THE MANU BUSINESS STORY

FROM FISH SHOP TO FLOW METERS

Complied Research and Memoirs of Alexander T Manu, 2024 – 2025.

Printed by Morgans Printing 210 Lyons Rd Five Dock 2046. 1st edition 2025.

From Fish to Flowmeters - The Manu to ManuFlo Story

"From humble beginnings as fishmongers to innovative leaders in electronic process control design and instrumentation manufacturing, this is the remarkable story of a family business driven by determination, ingenuity, and success. The Manu journey culminates in revolutionizing water and admixture measurement and control within the premix concrete industry and beyond it."

From the memoirs of Alexander T. Manu.

The beginning .....

THE HISTORICAL STORY OF MANU BUSINESSES IN AUSTRALIA;

FISH SHOPS, TV & RADIO, MANU ELECTRONICS, MANUFLO & MORE

1945 - Origins and Beginning – The Fish Shops in OZ.

In January 1939, Lazarous (Lazo) Manou (Manu) arrived in Australia from Greece, embarking on a journey marked by resilience and determination. He began working on eucalyptus farms in Majors Creek near Braidwood, NSW. When World War II broke out in Sept.1939, his family in Macedonia, Greece, became isolated. Lazo served in the army during the war, and after being discharged in 1942, he transitioned to a new venture—opening a fish shop at 242 Parramatta Road, Ashfield. Throughout the 1940s, he expanded his business, launching another fish shop at Strathallan Avenue, Northbridge. In 1951, Lazo purchased a property at 224 Sydney Street, Willoughby, NSW, and started a new fish shop there, continuing his legacy of hard work and entrepreneurship.

1950's Telephone

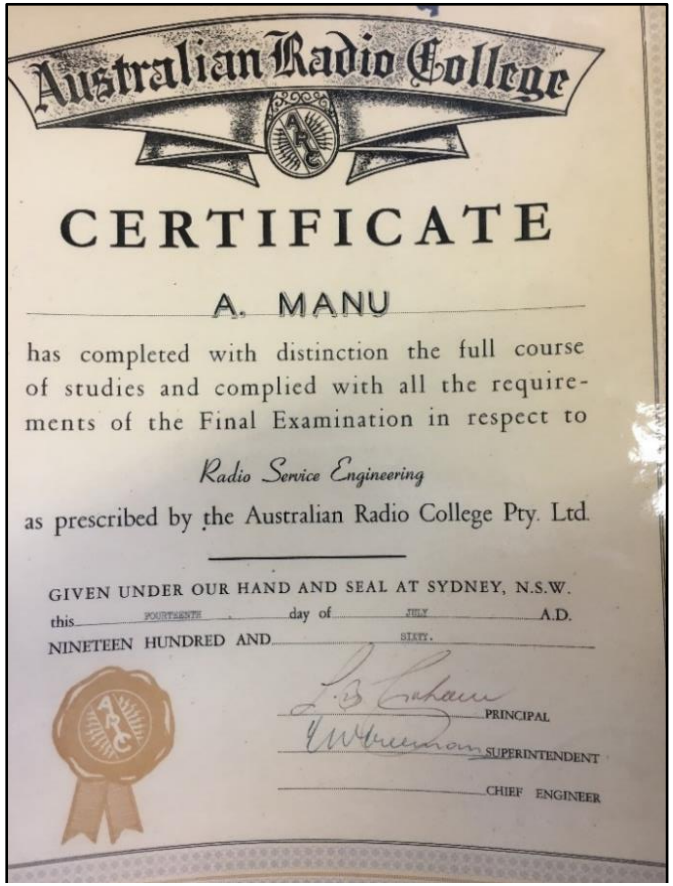
Early 1950's Lazo's Fish Shop at 224 Sydney Street, Nth Willoughby Sydney (Cnr of Penshurst St.) ►

Lazarus (Lazo) Manu

1960 - Manu Electronics in its infancy

Tony Manu, son of Lazo Manu, emerged from the turmoil of WWII and the Greek Civil War as a war refugee, having been discovered in Romania. With government assistance, he arrived in Sydney in 1955, carrying with him a background in Electronics, Radio, and TV technology.

During the late 1950s, Tony worked in various electromechanical roles while pursuing further study, culminating in the completion of an advanced Radio/TV technician course in July 1960. By night, he began repairing radios and televisions from his father's residence at 18 Bank Street, North Sydney—quietly laying the groundwork for what would become Manu Electronics. In 1961, seeking formal recognition of his skills and growing reputation, Tony registered the trading name "Manu Electronics." Encouraged by Lazo to take the next step, he was given space in a sub-divided portion of his father's fish shop at 224A Sydney Street, North Willoughby. In 1962, Tony officially launched his humble workshop.



Australian Radio College

CERTIFICATE

A. MANU

has completed with distinction the full course of studies and complied with all the requirements of the Final Examination in respect to

Radio Service Engineering

as prescribed by the Australian Radio College Pty. Ltd.

GIVEN UNDER OUR HAND AND SEAL AT SYDNEY, N.S.W.
this FOURTEENTH day of JULY A.D.
NINETEEN HUNDRED AND SIXTY.

PRINCIPAL
SUPERINTENDENT
CHIEF ENGINEER

1960 Radio Certificate

(Form 5) 295406

New South Wales.

BUSINESS NAMES ACT, 1934.
(Section 16.)

Certificate of Registration.

I hereby certify that registration pursuant to the Business Names Act, 1934, has been effected in respect of a business carried on at Willoughby under the Business Name of MANU ELECTRONICS

Given under my hand, at Sydney, this Twenty-nineth day of December one thousand nine hundred and sixty-one.

Registrar-General.

N.B. This certificate is required to be exhibited in a conspicuous position at the principal place of business.

Whenever a change is made or occurs in any of the particulars in respect of which any firm, individual or corporation is registered, a statement in the prescribed form should be sent by post or delivered to the Registrar General within fourteen days after such change. If any firm, individual or corporation ceases to carry on business or abandons the use of its business name, notice thereof in the prescribed form should be given to the Registrar General.

MI 2288 GOVERNMENT PRINTER.

Business Name Registration

...NEWAL ...EW SOUTH WALES

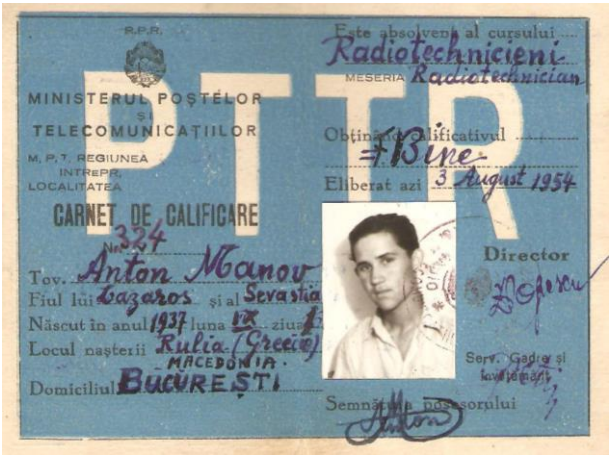
CORPORATE AFFAIRS COMMISSION

Business Names Act, 1962

CERTIFICATE OF REGISTRATION OF BUSINESS NAME

MANU ELECTRONICS
224A SYDNEY RD
WILLOUGHBY 2068

Business Premises Registration



R.P.R.

MINISTERUL POȘTELOR ȘI TELECOMUNICAȚIILOR

M. P. T. REGIUNEA
INTREPR.
LOCALITATEA

CARNET DE CALIFICARE

Nr. 324

Tov. Anton Manov
Fiul lui Lazaros și al Sevastia
Născut în anul 1937 luna IX ziua 1
Locul nașterii Rulia (Grecia) MACEDONIA.
Domiciliul BUCUREȘTI

Este absolvent al cursului Radiotehnicieni
MESERIA Radiotehnician
Obține calificativul Bine
Eliberat azi 3 August 1954

Director

Semnătura posesorului

Tony's Radio Tech Diploma -Romania1954

1962 - The TV and Radio Shop Business Begins

In 1962, Tony Manu opened the doors to his modest Electronic Goods & Appliance Sales & Repair business. Tucked into a narrow shop just 2.5 metres wide by 12 metres long, the space was humble—but the ambition was anything but.

From Monday to Friday, 9am to 5pm, and Saturdays until 12:30pm, Tony sold and repaired televisions, valve radios, and household appliances. As demand for black-and-white monochrome TVs surged, he introduced evening home service calls—often completing at least four visits per night, Monday through Friday.

Behind the scenes, his wife Lena became the backbone of the business, managing customer relations and bookkeeping with dedication.

Lena and Alex Manu 1967 (at rear of shop.

Shop rear with Tony's Holden 1970.

Original TV Valve items from the shop

Backlog of B&W TV's for repair

The TV Shop front

1965 – Manu's First Industrial Liquid Admixture Dispensing Equipment

A chance meeting in 1965 led Manu Electronics into a new realm of industrial application when Taubmans Co. (Embecon) commissioned the development of an automatic volumetric bottle dispenser system. Designed to precisely measure and dispense chemical admixtures into concrete mixes, this pioneering unit introduced Manu's engineering expertise to the concrete batch plant sector.

Building on this foundational opportunity, Manu Electronics unveiled the revolutionary Winstone Bridge **UME-01** — a dosage calculation system well ahead of its time. Featuring a float switch slide-bar setpoint unit, it offered remarkable accuracy and control in an industrial setting. Manufactured at the modest Willoughby shop, the UME-01 saw its first deployment at a batch plant in Botany, Sydney—quietly initiating a legacy of innovation that would shape the company's future in flow measurement technology.

4. ***UME-01*** *Dose Rate Pounds Dispenser Unit*

Bottle Chemical Cylinder

Botany Premix Concrete Batch plant 1965

1966 – The Measurement Challenge from Imperial to Decimal systems

On February 14th 1966, the business faced a significant challenge as the country transitioned from Imperial to Decimal currency. This shift came amid rapid technological and industrial advancements, exposing inefficiencies in the imperial monetary system that hindered commerce and industry in an increasingly interconnected global economy.

While the official conversion to metric measurements didn't begin until 1971, much of the chemical and electronics industry had already embraced metric units—driven by the fact that no imperial equivalents existed for emerging digital technologies. Over a 10-year period, the new currency transition had to align with updated fluid measurement equipment and invoicing processes to ensure a seamless operation.

Currency *- From Pence, Shillings, Stirling's, Florins & Pounds to simple Cents and Dollars.*

METRIC -> IMPERIAL CONVERSIONS						
METRIC MEASURE		EQUIVALENT TO		PRECISE CONVERSION		APPROXIMATE CONVERSION
1 millilitre			=	0.035195 fluid ounces	≈	0.035 fluid ounces
1 centilitre	=	10 millilitres	=	0.35195 fluid ounces	≈	0.35 fluid ounces
1 litre	=	1000 millilitres	=	35.1950 fluid ounces	≈	35.2 fluid ounces
1 litre	=	1000 millilitres	=	1.75975 pints	≈	1.76 pints
1 kilolitre	=	1000 litres	=	6.1103 barrels	≈	6.11 barrels
1 kilolitre	=	1000 litres	=	219.96916 gallons	≈	220 gallons
So 1 litre = 100 centilitres = 1000 millilitres						
www.math-salamanders.com						

Fluid Measurements *– Ounces to Millilitres.*

Road speed limits *– Miles to Kilometres.*

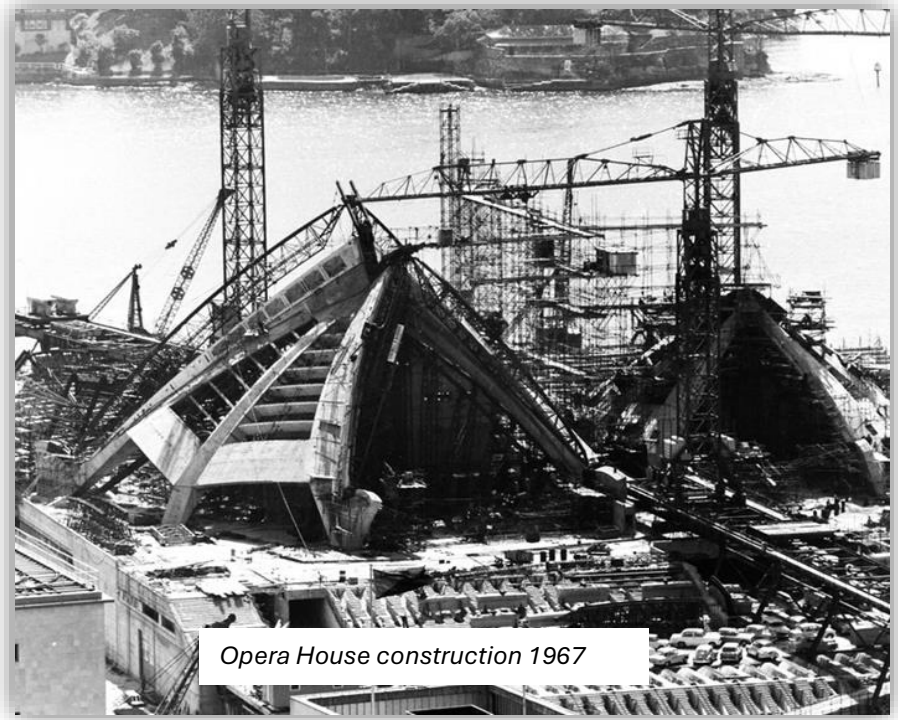
Postage Stamps *-Shillings to Cents.*

1967 – A Prestige order for the Sydney Opera House

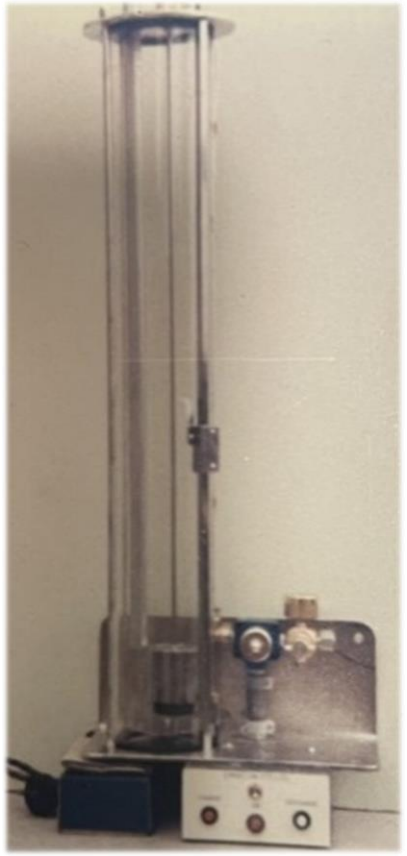
In 1967, Manu Electronics marked a proud chapter in its early history with the advancement of its bottle dispenser technology. The newly developed **UME02** automatic charge/discharge controller featured a magnetic slide-bar float switch set point and automatic pump drive—ushering in enhanced precision for volumetric liquid dispensing.

This leap in functionality earned Manu Electronics a landmark commission: installation at the concrete mixing plant on site at the iconic Sydney Opera House construction project. Tony Manu personally supervised and serviced the additive dispenser system, ensuring its performance met the rigours of such a high-profile site.

That same year, Peter Georgieski joined the company, becoming Tony's trusted right-hand man. For nearly a decade, Peter played a vital role in servicing TVs and radios, while also assembling dispenser systems—contributing to the company's growth in both consumer electronics and industrial technology.



Opera House construction 1967



Pictured right; Manu Electronics designed and assembled Volumetric bottle Charge-discharge pumped dispenser systems for measurement of chemical construction additives which are added to premixed concrete batches. ▶

Far right is the ***UME02*** *dual system with small and large bottle cylinders.* ▶

1969 - Expansion of the Willoughby Shop Premises

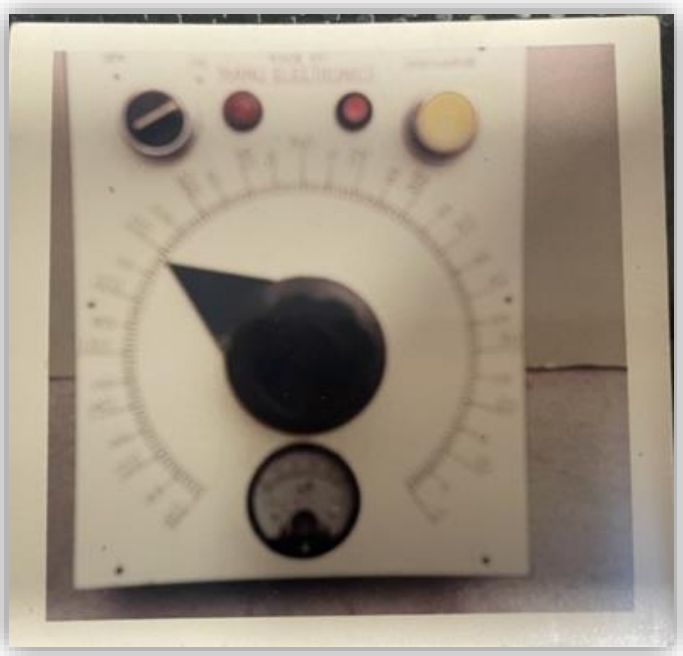
By 1969, the TV and radio business was booming, during the week, Tony and Peter kept the shop thriving—serving customers, repairing equipment, and managing the growing industrial side of the business. After hours Tony was still conducting at least five after-hours service calls each evening.

Lena, ever industrious, juggled responsibilities between the electronics shop and assisting her father-in-law Lazo in his adjacent fish shop, drawing on skills from her earlier experience in her family's fish shop business in Melbourne.

As Tony's business soared and space dwindled, Lazo made the heartfelt decision to retire and close the fish shop. He leased his premises to Tony, allowing the conversion of 224 Sydney Street into a full-fledged TV, Radio, and Appliance store. The rear shed and smaller workshop were dedicated solely to the expanding industrial dispenser equipment operations—marking a critical evolution in Manu Electronics' growth.

A three-bedroom unit was also built above the new shop premises. Saturdays became a bustling family tradition: Lena, baby Cathy, young Alex, and Lazo—the retired but ever-present patriarch—all gathered in the shop, while Tony travelled across Sydney and even as far as Newcastle and Wollongong installing and servicing Manu Equipment at concrete batch plants.
At day's end, Lena and the kids would take the bus home to their newly built residence at 13 Ballyshannon Road, Killarney Heights.

Inside the newly expanded TV & Radio shop with Lazo pictured.



Prototype dial-up set point batch controller.

1970 – Manu Electronics seeding the next generation

In 1970 Tony reaches out directly to Texas Instruments in the USA to source electronic components for his innovative dispenser designs. With a strong belief in fostering a passion for electronics from an early age, Tony purchases a hobby kit for Alex, encouraging hands-on exploration. Manu Electronics is poised for a bright future.

MANU ELECTRONICS

224a SYDNEY STREET, WILLOUGHBY NORTH

TV — RADIOS — TRANSISTORS — TAPE RECORDERS
AND ELECTRONIC DISPENSERS

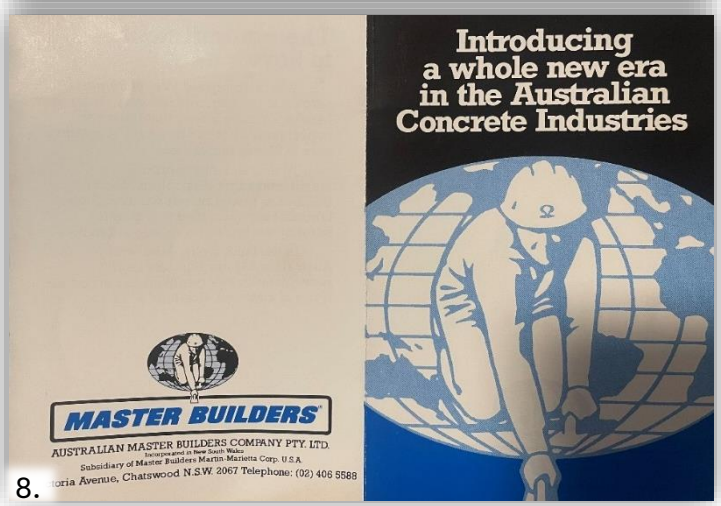
TO: TEXAS INSTRUMENTS
Supply Company
776Palomar Avenue SUNYVALE CALIFORNIA

We received your quotation for TIL 138 at $1.79 each
Please receive our cheque of $100.00 to cover air fr
and packing, with the rest of it forward appropriate
number of TIL 138,s devices,

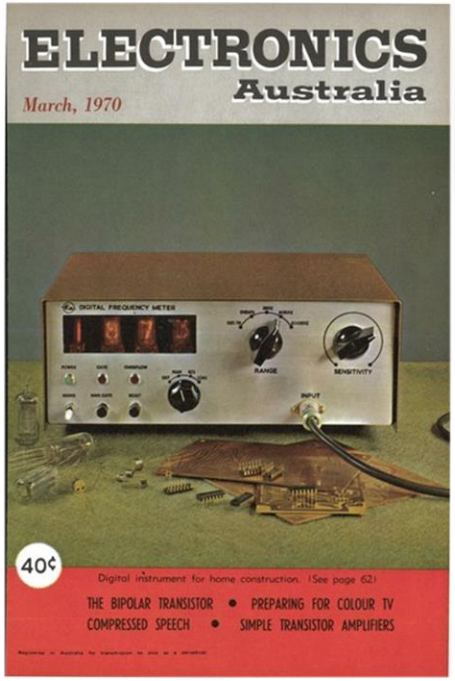
NEEDED URGENTLY

P.S. Could you please inform us if you stock
.5inch four digit LCD displays and
.1inch four digit LED displays multiplexed.

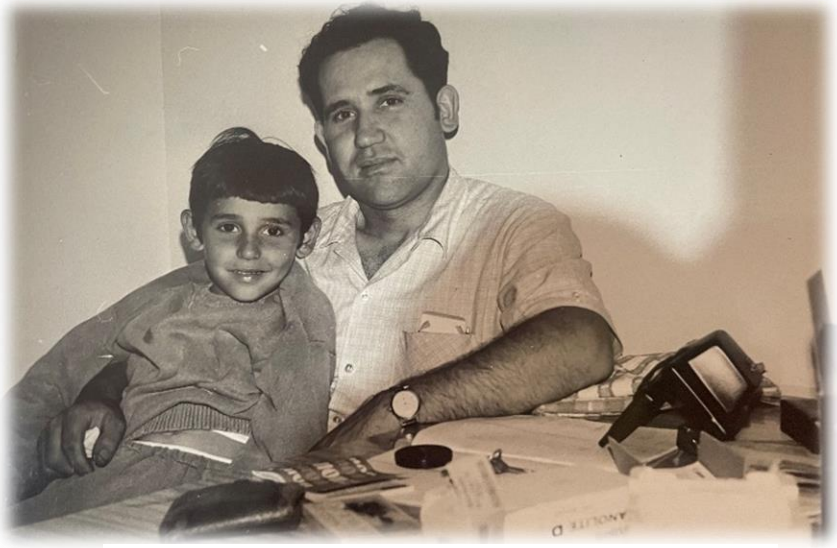
Do you handle other manufacturers devices
or you do not.



Before PC's the typewriter was synonymous for all forms of professional written communication.



One of Tony's many Electronics magazines. ▲



Tony with Alex at the home work bench -1970. ▲

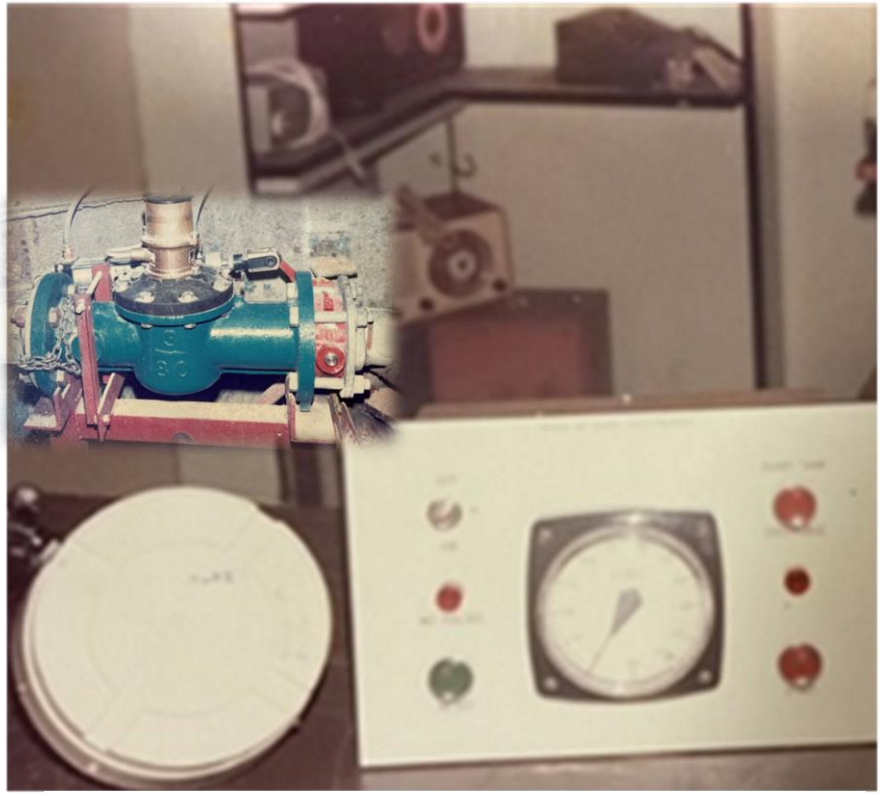
Alex's electronics hobby kit. ▲

1970's - Introduction of Manu Automatic Selection Batch Control

The Manu Businesses had become a well-known presence in Sydney's lower north shore. Their shop at Willoughby stood across from the North Willoughby pub, a local social hub where friendly residents and business owners gathered to share a drink and connect.

The first Manu Electronics water batch controller **UME06** with Kent pulse turbine meter is installed in a batch plant at Pyrmont Sydney.

Manu Electronics and Tony's reputation for design and manufacture of innovative products for volumetric flow measurement solutions are becoming well known in Sydney. A growing number of prominent Construction Chemical Companies approach Tony for custom design of measurement systems for admixtures in concrete batch plants, include Relcrete, Sternson of Canada and Master Builders.



*First **UME6** Manu water batch controller with Kent pulse meter.* ▲

***UME04** Dispenser for Sterson (Canada) with custom bottle overflow alarm* ►

Master Builders Dispenser. ▲

1970's Contact Directory. ▲

The early to mid 1970's, New Preset Batch Controller and Pulse Output Flowmeters

In response to significant industry challenges, Manu Electronics took a revolutionary step to address the risks and inefficiencies faced by batch plant operators. Traditionally, operators needed to remain within visual sight of bottle cylinder dispenser systems in the batch room. This setup posed safety risks due to potential canister ruptures or explosions, compounded by the high costs of installing visual cameras, dust interference, and the cumbersome, time-intensive process of bottle cleaning.

Clients approach Manu Electronics to design a remote system with a fail-safe system. Manu Electronics responds with the design and introduction of the **UME-08** Batch Controller with the **MEG20** world first 1 pulse per 1 millilitre admixture flowmeter. The flowmeter is a mechanical domestic water meter sourced from the Emmco/Email factory at Waterloo NSW, which is then converted by Manu.

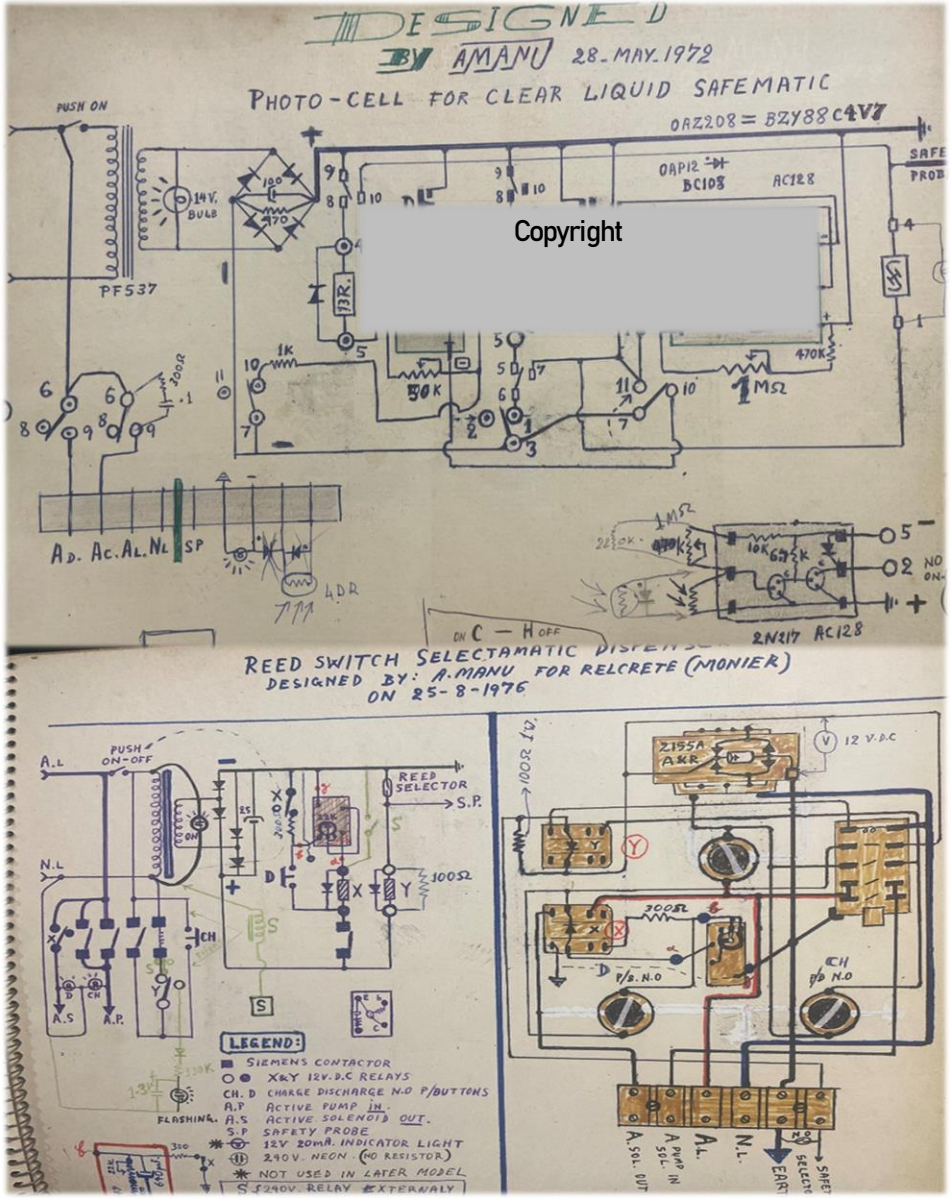
In the early1970's, **TTL** Transistor-Transistor Logic 7400 series high current 5VDC circuits are employed for the **UME08** logic operation.

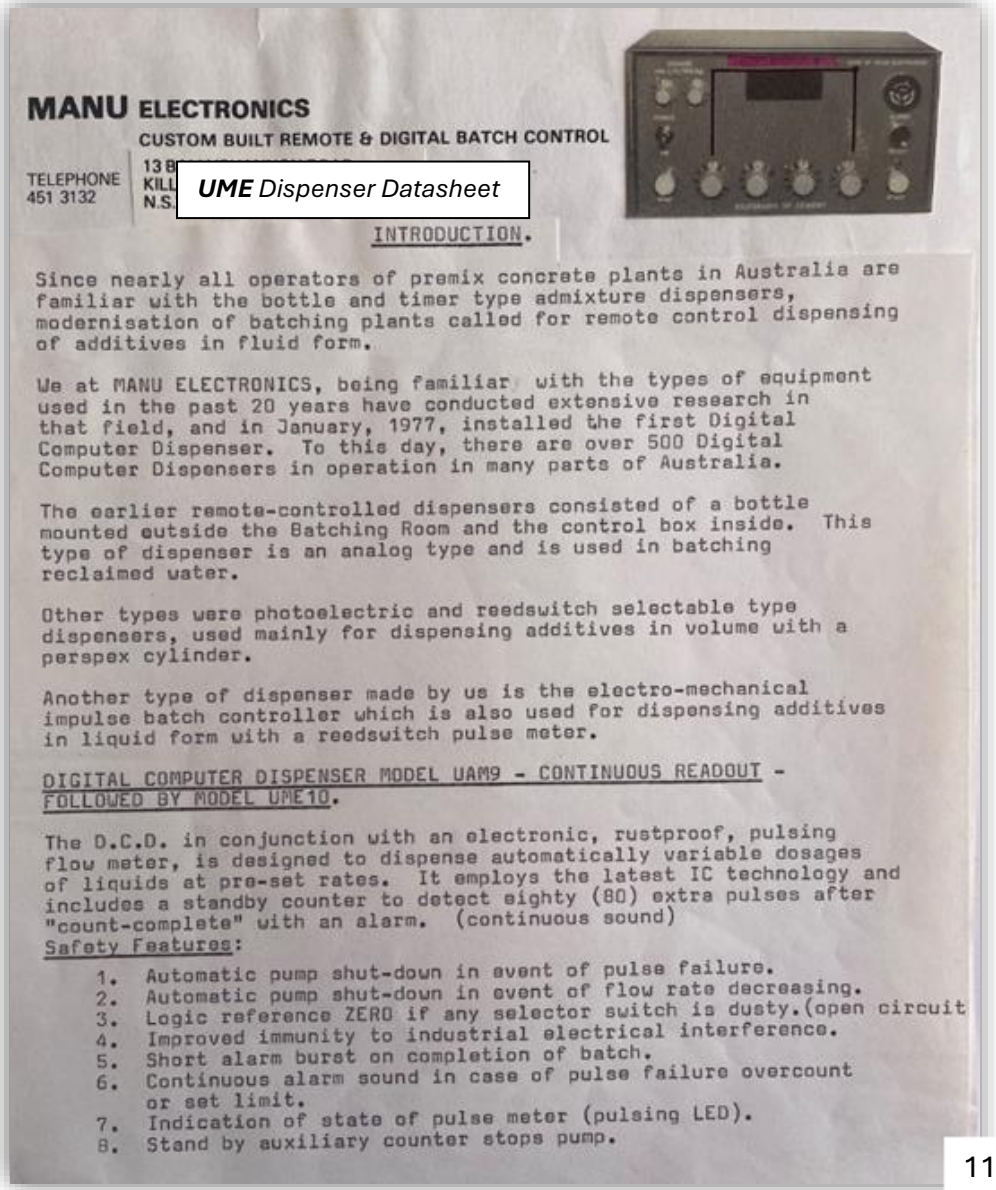
UME07 Select-O-Matic *Litres Dispenser for Relcrete, Rotary Dial Selector Knob count back Batch Controller.* ▲

UME4 *Bottle Dispenser Controllers,* ***UME07*** *Select-O-Matic Dial Batch Controller,* ***UME8*** *Batch Controller and new Green* ***MEG20*** *admix pulse flowmeter.* ◄

1970's - Tony Manu's ground breaking Dispenser circuit drawing designs

Many late nights were spent by Tony analysing, conceptualizing, designing, and meticulously drafting circuits—each step bringing ideas to life. Once perfected, these designs transitioned into production, evolving from vision to reality as they were skilfully manufactured.





MANU ELECTRONICS

CUSTOM BUILT REMOTE & DIGITAL BATCH CONTROL

TELEPHONE 451 3132

***UME** Dispenser Datasheet*

INTRODUCTION.

Since nearly all operators of premix concrete plants in Australia are familiar with the bottle and timer type admixture dispensers, modernisation of batching plants called for remote control dispensing of additives in fluid form.

We at MANU ELECTRONICS, being familiar with the types of equipment used in the past 20 years have conducted extensive research in that field, and in January, 1977, installed the first Digital Computer Dispenser. To this day, there are over 500 Digital Computer Dispensers in operation in many parts of Australia.

The earlier remote-controlled dispensers consisted of a bottle mounted outside the Batching Room and the control box inside. This type of dispenser is an analog type and is used in batching reclaimed water.

Other types were photoelectric and reedswitch selectable type dispensers, used mainly for dispensing additives in volume with a perspex cylinder.

Another type of dispenser made by us is the electro-mechanical impulse batch controller which is also used for dispensing additives in liquid form with a reedswitch pulse meter.

DIGITAL COMPUTER DISPENSER MODEL UAM9 - CONTINUOUS READOUT - FOLLOWED BY MODEL UME10.

The D.C.D. in conjunction with an electronic, rustproof, pulsing flow meter, is designed to dispense automatically variable dosages of liquids at pre-set rates. It employs the latest IC technology and includes a standby counter to detect eighty (80) extra pulses after "count-complete" with an alarm. (continuous sound)

Safety Features:

1. Automatic pump shut-down in event of pulse failure.
2. Automatic pump shut-down in event of flow rate decreasing.
3. Logic reference ZERO if any selector switch is dusty.(open circuit
4. Improved immunity to industrial electrical interference.
5. Short alarm burst on completion of batch.
6. Continuous alarm sound in case of pulse failure overcount or set limit.
7. Indication of state of pulse meter (pulsing LED).
8. Stand by auxiliary counter stops pump.

1970s – Designing and Manufacturing a Range of Dispenser Products

To meet each customer's request for individuality, Manu Electronics not only etched custom corporate logos onto front panel fascia's but also designed dispenser and control units with subtle, unique variations tailored to specific customer needs. Tony collaborated with Mr. George Lizier, the chief PCB designer, who meticulously hand-drew the blueprints. These blueprints enabled the manufacturing of PCBs based on Tony's original hand-drawn circuit designs.

UME03 *to* ***UME09*** *model series dial up liquid Admixture dispenser units.*

Equipment from Hymix Pyrmont, next to the Fish Markets

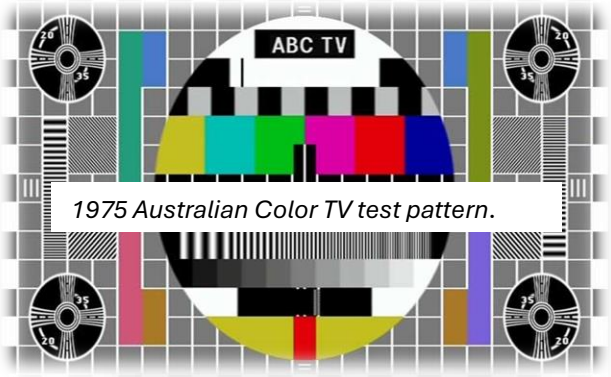
1974 to 1975 - Industry technology changes and introduction of Colour TV

Manu Electronics revolutionized industry operations with its dispenser and flowmeter systems, relying on word-of-mouth promotion. Positive news spread rapidly about the revolutionary Manu equipment, which offered functionality and significant cost savings.

In 1974, Manu Electronics introduced the **UME09** Preset Batch Controller, equipped with innovative watchdog safety systems when paired with **MEG20** 1 pulse per 1 milliliter flowmeters. The system provided critical fail-safe features: stopping the pump and alerting the operator in case of meter pulse blockage or failure. Embraced by the concrete industry for accurate chemical measurement, Manu equipment expanded rapidly across Australian states.

The first overseas Equipment order for **UME09** and **MEG20** is received from W.R.Grace Singapore.
To keep up with growing demand Alex and Lena were assisting Tony, Peter, Trevor and Dufty in wiring and soldering of equipment PCB's.

The electronics sector underwent a major shift in 1975 with the introduction of color TV's and transistor radios in Australia. As these devices became more reliable and large department stores entered the market, profit margins diminished, and black-and-white TVs and large valve radios became obsolete. This industry shift significantly impacted Manu Electronics' TV and radio sales and service, prompting a pivotal refocus of the overall business operations.



1975 Australian Color TV test pattern.


COLOUR TELEVISION TRAINING SCHOOL

This Certifies that

Anthony Manu

has satisfactorily completed
and been duly examined in
the subjects prescribed for our

COLOUR TELEVISION TECHNICIAN'S COURSE

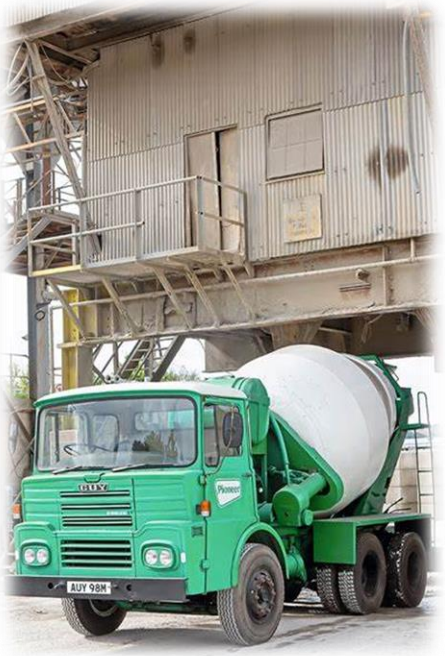
and, in recognition thereof,
is hereby awarded this

CERTIFICATE

WITNESS *the signatures of the officers of*
TETIA TRAINING SCHOOL

this 10th day of May 19 73.

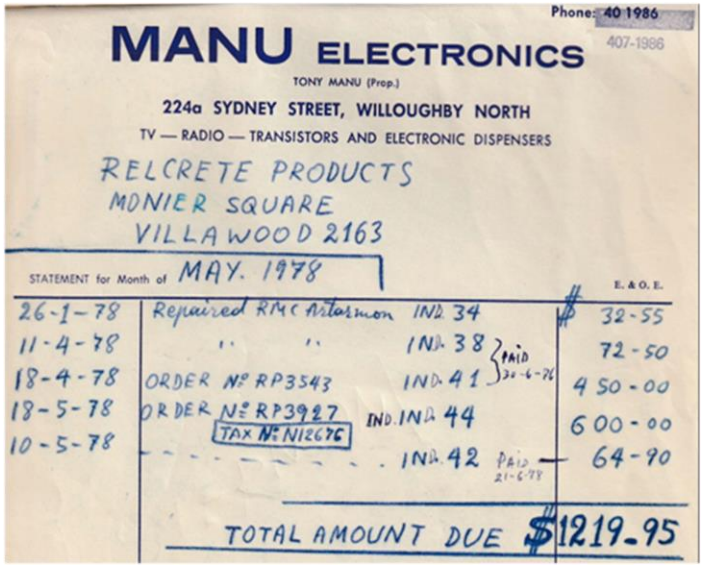
UME-09 *"Litres" Batch Controller*



Pioneer Concrete delivery truck -1974. ▲

1976 - The industrial flow measurement business grows organically.

The industrial flow measurement sector continues its natural ascent, with Manu Electronics securing expanding national orders from leading concrete producers—Monier (Relcrete) and Readymix Concrete Co (both manufacturing their own admixtures at the time), also Master Builders (Embecon) and W.R. Grace. This growing clientele marked a significant turning point in the company's reach and reputation.
The equipment was redesigned to use the more power efficient and faster processing speeds of **CMOS** integrated circuits.
All Batch Controllers were now manufactured with CMOS parts operating on +12VDC. Nephew Trevor assisted with Tony's logic designs, while Alex populated and soldered PCB's at home for extra pocket money.



MANU ELECTRONICS

TONY MANU (Prop.)

224a SYDNEY STREET, WILLOUGHBY NORTH

TV — RADIO — TRANSISTORS AND ELECTRONIC DISPENSERS

Phone: 40 1986 407-1986

RELCRETE PRODUCTS
MONIER SQUARE
VILLAWOOD 2163

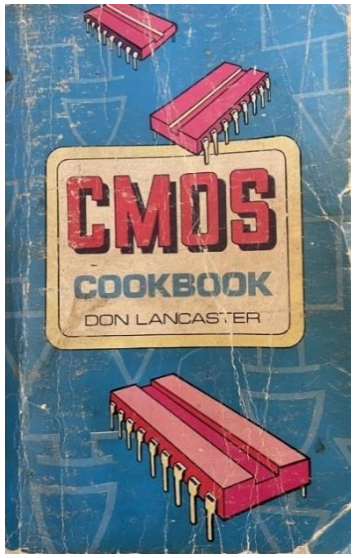
STATEMENT for Month of MAY. 1978

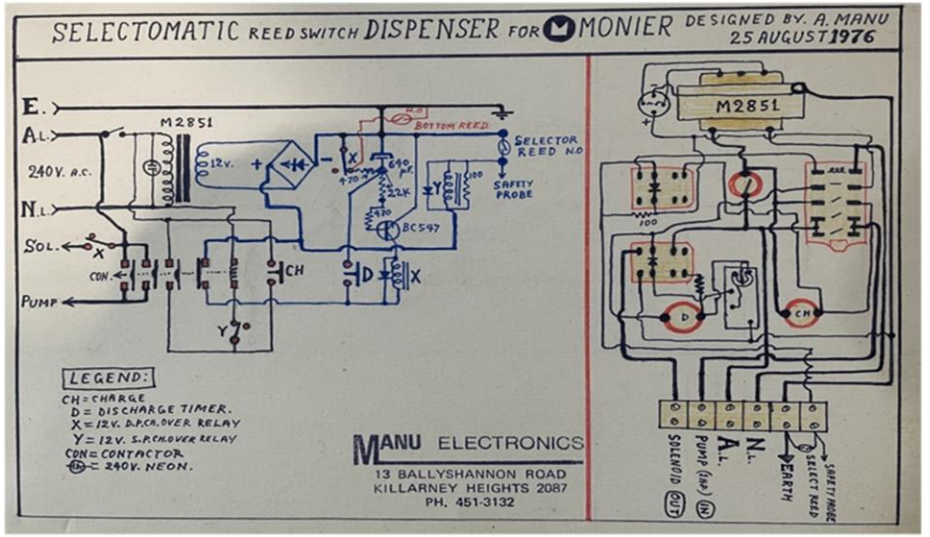
			E. & O. E.
26-1-78	Required RMC Artarmon	IND. 34	$ 32-55
11-4-78	" "	IND. 38 PAID 30-6-78	72-50
18-4-78	ORDER Nº RP3543	IND. 41	4 50-00
18-5-78	ORDER Nº RP3927	IND. IND. 44	600-00
10-5-78	TAX Nº N12676	IND. 42 PAID 21-6-78	64-90
		TOTAL AMOUNT DUE	$1219-95

◄ *1978 Relcrete invoice.*

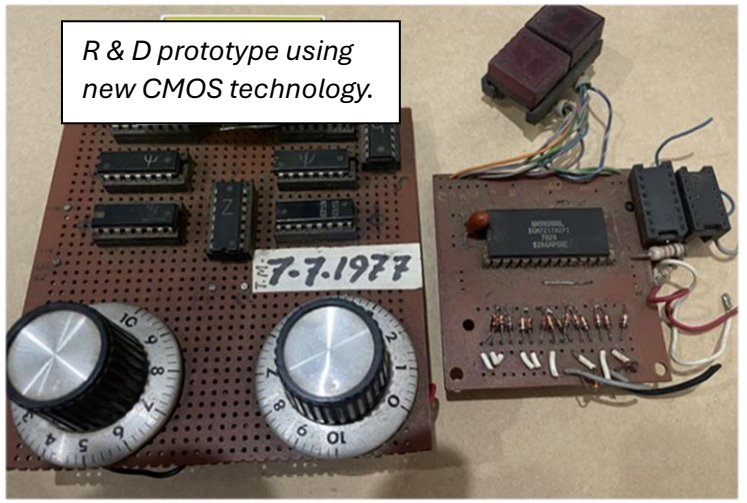
Select-O-Matic circuit ►

CMOS design book .▼





*Advance Australia Trade Show with **UME9** Manu equipment on display with AIC's Peter Elliot*
◄ *1978.*



R & D prototype using new CMOS technology.

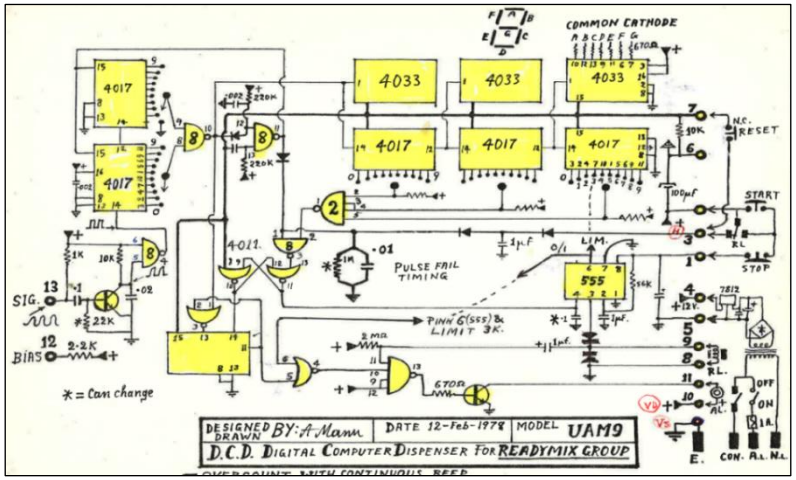
1976 to 1979 - The Manu deal with Readymix Concrete and the new UME10 Batch Controller.

The **UME-09** Superflow series Batch Controllers set a new benchmark in the industry by introducing a world-first variable dose-rate rotary knobs as an optional feature for ratio volumetric dispensing of chemicals. These innovative models were first installed in South Australia for Readymix Concrete Company, then quickly expanding to other states due to their superior functionality and reliability.

In 1979, Manu Electronics unveiled the all-new **UME-10** Batch Controller, packed with enhanced features including Limit, Pulse-Fail, and Flow safety function visual LED indicators. This next-generation controller addressed critical safety and efficiency needs, further establishing Manu Electronics as a leader in industrial dispensing technology.

▲ ***UME09*** *KG's Dose Rate units +* ***MEG20****'s.*

UME09*'s in Batch room.* ▲



◄ ***UME09*** *Circuit Diagram*

UME9 *Cubic Metres Dose Rate model* ►

1979 – National recognition in the Readymix Report Newsletter

In 1979, Manu Electronics dispensing equipment received recognition in the Readymix (Holcim) national newsletter. This acknowledgment highlighted the significant impact of Manu's technologies on the concrete industry, further solidifying their reputation as a trusted and pioneering provider of chemical dispensing solutions.

Readymix

readymix report

AUGUST 1979

Readymix producing own admixtures

A joint decision made by SA Region and Head Office in mid 1978 brought about the commencement of the manufacture of conventional and Superflow admixtures in the SA Region. Working with an American company the initial development included the building and installation of blending equipment and other facilities at the Brompton Plant in late 1978.

During early 1979 all Metro concrete plants were fitted with conventional (water reducing and retarding) admixtures and Superflow admixtures dispensing equipment; the equipment was the latest electronic digital control and flow meter system in modular form.

Since the commissioning of the equipment Batch Operators have been most impressed with the increased efficiency which has resulted. Superior equipment has enabled the batcher to select and batch one of three admixtures at any one time.

Readymix (SA) has been using the new units in metro plants since April 1979 and recently has noted a small but significant improvement in both reduction and setting times.

The admixtures are manufactured in 5260 litre batches held in central storage tanks for subsequent transfer to a converted cement tanker with a capacity of 11 000 litres which is used to supply all metro plants; the same systems are used for superplasticising admixtures.

Classic 70's Multi-Voltmeter

Extract article from the Newsletter

1980 - One door closes and another opens

After 18 remarkable years at the Willoughby shop, the era of TV/radio sales and service came to an end due to drastically declining profit margins. Tony initially hoped to re-lease Lazo's shop to start a Video/VCR rental business, involving Alex in its operation, while continuing to use the premises for the burgeoning industrial flow measurement business. However, Lazo declined this plan, prompting Tony to vacate and close the TV and radio business. He relocated the growing industrial operation to the garage workshop at the family home on 13 Ballyshannon Road, Killarney Heights.

In the early years, Tony had been managing complete installations, handling wiring and plumbing himself. However, as demand for Manu systems surged, admixture companies began employing specialist admixture technicians and electrical contractors to support the installation and any onsite servicing needs of new Manu equipment. This shift allowed Manu Electronics to focus on innovation and production techniques to satisfy the ever-growing demand for its advanced flow measurement solutions.

*All new **UME-10-D** Dual Batch Controllers with the latest safety features for dispensing of W.R and A.E.A chemicals*

The closure of the TV shop marked the loss of a cherished gathering place for family, friends, and the local community. Over the years, the shop had become a hub, where three generations of the Manu family would come together after school and on Saturdays, sharing moments that transcended work. It was a space filled with laughter, connection, and a sense of belonging, leaving behind memories that would remain deeply treasured by all who were part of its story.

1980's – A decade of change, opportunities and development of new products

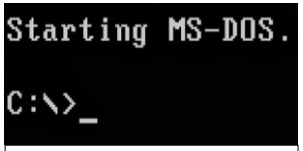
The garage workshop at the family home in Killarney Heights became the new headquarters of Manu Electronics, marking the beginning of another period of innovation and product development. At the request of concrete batch plant customers, groundbreaking products were designed and manufactured.

One such product the **MSI** Manu Sequencer Indicator device monitored and indicated the completion of each batch of individual ingredients added —solids, water, and chemicals— to concrete mixes. It was instrumental in preventing double batching or dosing of ingredients in busy metro pre-mix concrete batching plants (prior to the advent of PLC's), ensuring efficiency and precision in batch production.

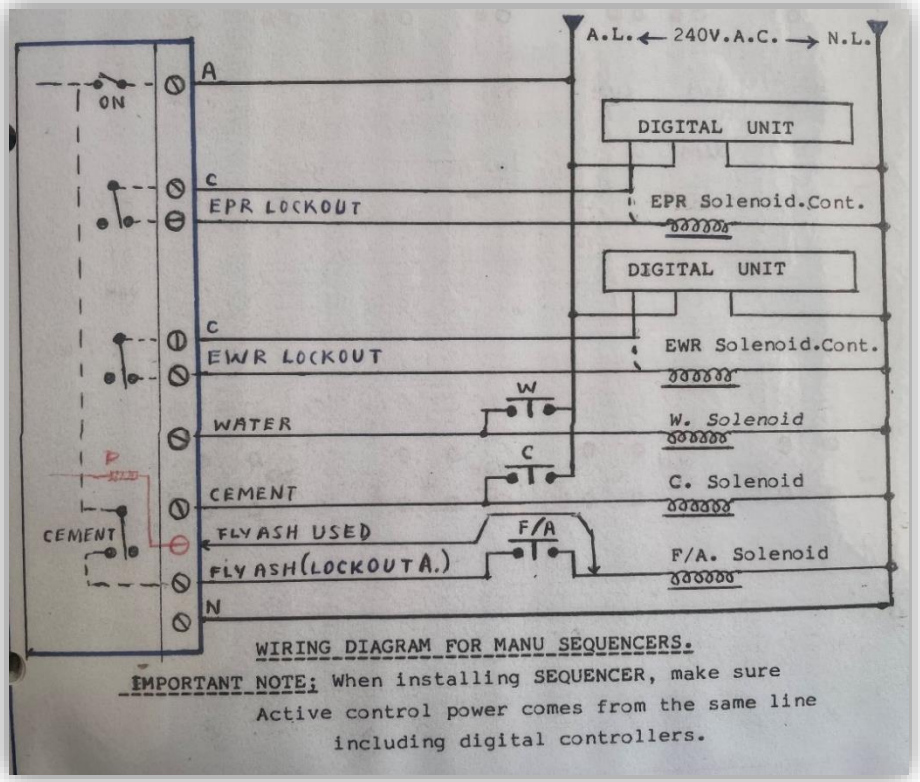
In 1981, Alex completed his HSC and expressed a desire to join the business full-time. However, Tony encouraged Alex to first gain experience with an external outfit. In early 1982, Alex secured employment with Prime Computer Inc., a U.S.-based boutique computer manufacturer and software developer. Despite this, Alex continued to support the family business after hours during periods of peak demand. That same year, David Mott joins full-time, further strengthening the small team as the business humbly grows.

18. ***MSI*** *-Manu Sequencer Indicator*

1980's clock dial phone.



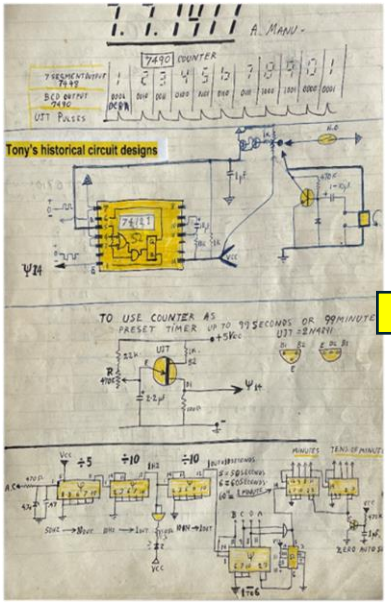
Microsoft MS-DOS introduced 1981.



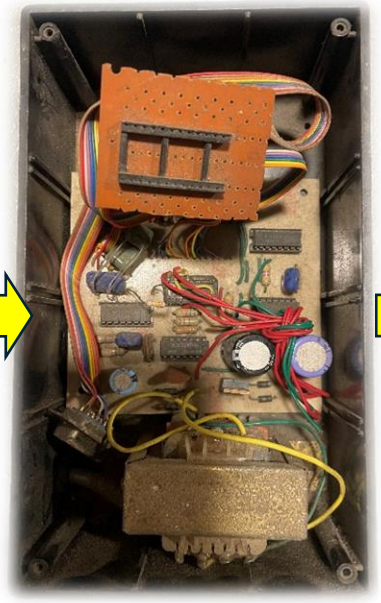
1980's Milestones – From Concept Drawings to Tangible Products

For the early years, Manu Electronics relied on the expertise of its trusted Printed Circuit Board designer, Mr. George Lizier (GJL), to transform ideas into reality. The development journey began with Tony Manu's hand-drawn circuit concepts, which were translated into hardwired prototypes. Once refined, these designs were handed over to GJL, who meticulously plotted and mapped each circuit, drafting blueprints for PCB mass production. With the blueprint complete, the boards were populated with precision—each component carefully selected and placed to form the final product. This structured, collaborative process became the backbone of Manu's product development methodology.

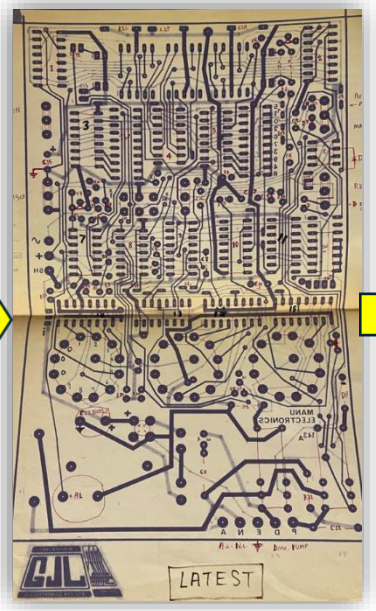
Aside from the advent of computer-aided design and modern manufacturing techniques, the essence of this method remains unchanged. The commitment to precision, collaboration, and craftsmanship underpinned every Manu Electronics / ManuFlo product innovation.



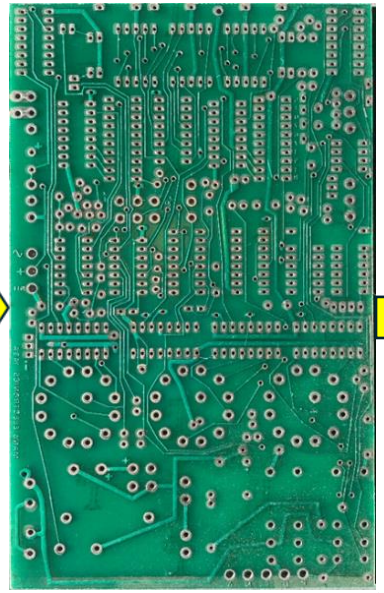
1. *Circuit drawing design*



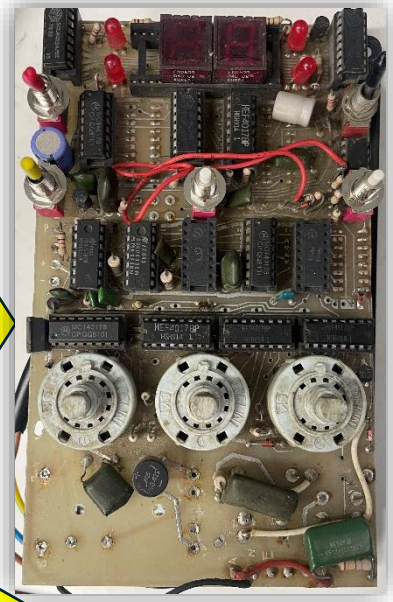
2. *Wired Prototype*



3. *PCB Blueprint*



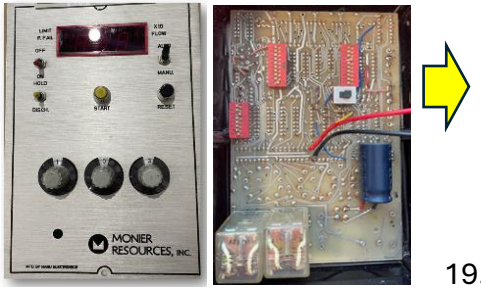
4. *Completed PCB*



5. *Parts populated PCB*

Design and Production process sequence for the ME143A Batch Controller for the USA market -yr. 1981.

6. *Completed* ***ME143A*** ► *product, ready for export.*

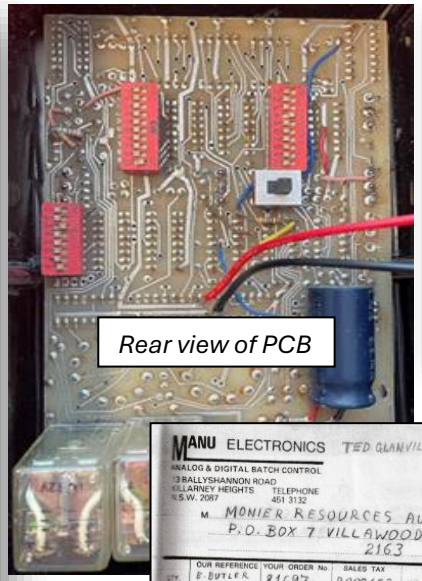


1981 to 1983 – Exports to the USA

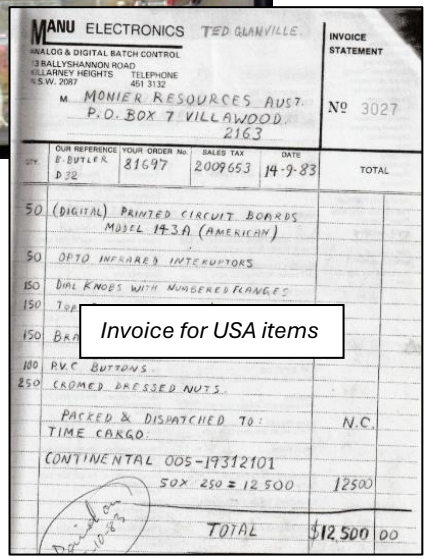
In 1981, Manu Electronics secured a major contract to design, manufacture and supply 110VAC Batch Controllers to the USA for Monier Inc Concrete Products Co. The units were configured in US-Ounces, Manu is further commissioned to convert **USA** manufactured Amtec and Carlon water meters with the same **MEG20** optical slotted disc sensor technology for the application. The flowmeter top heads are received for conversion then returned to the USA with the all-new Manu **ME143A** Batch Controllers with over 500 units made.

Despite this success, the supply ceased in 1983. Later, Manu Electronics discovered that its primary USA based competitor had replicated the flowmeter technology part-for-part, posing a significant challenge to Manu's intellectual property and innovation legacy.

***ME143A** Batch Controller*



Rear view of PCB



Invoice for USA items

(Above) Manu converted high-resolution optical pulse head for Amtec Flowmeter and (Below) Carlon/Manu USA Flowmeter.

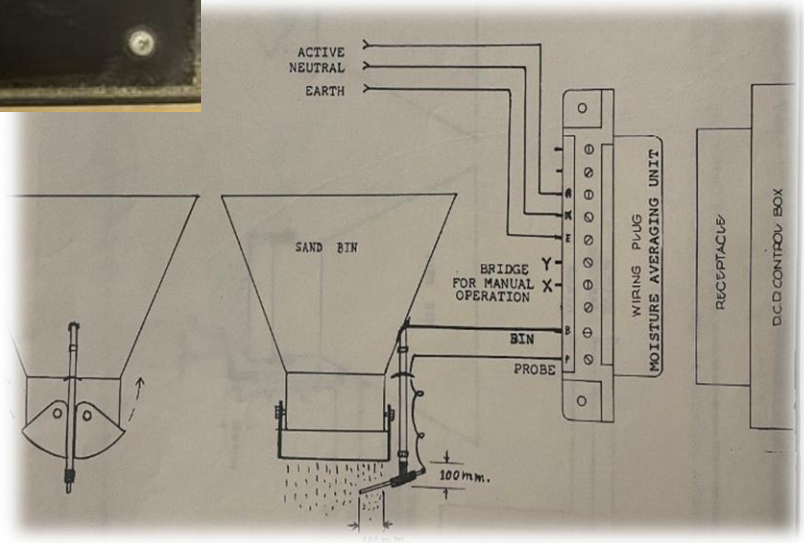
1982 - The Moist-O-Matic Indicator

The **MEM84** Moist-O-Matic control indicator was paired with a moisture sensing probe, this was another breakout design, installed at the base of the sand storage bin chutes. The device detected the moisture content of the sand to be added concrete mix. It enabled batchers to adjust and add ingredients as needed for optimal consistency of the concrete mixes being batched directly into the mobile concrete truck mixer barrel. While this product showed great potential, a combined lack of human resources for promotion and difficulty in accessing the installation point of the moisture probe led to its early discontinuation.

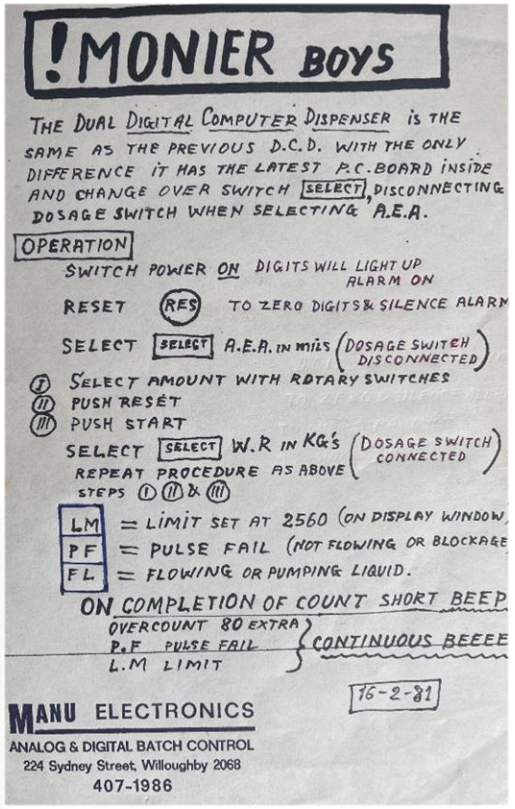
MEM84 *Manu Moist-O-Matic indicator.* ▲

Sand moisture probe ▲

Rheem Order for Manu equipment ▲



◄ *Moist-O-Matic probe location schematic wiring*

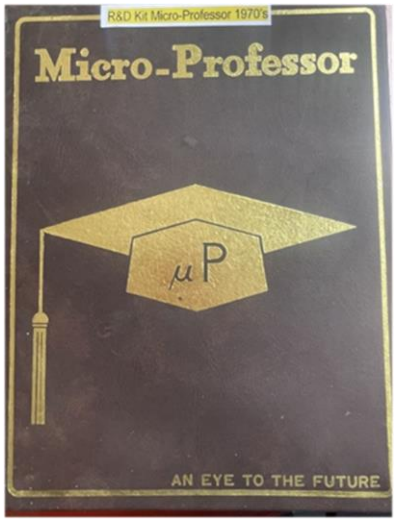


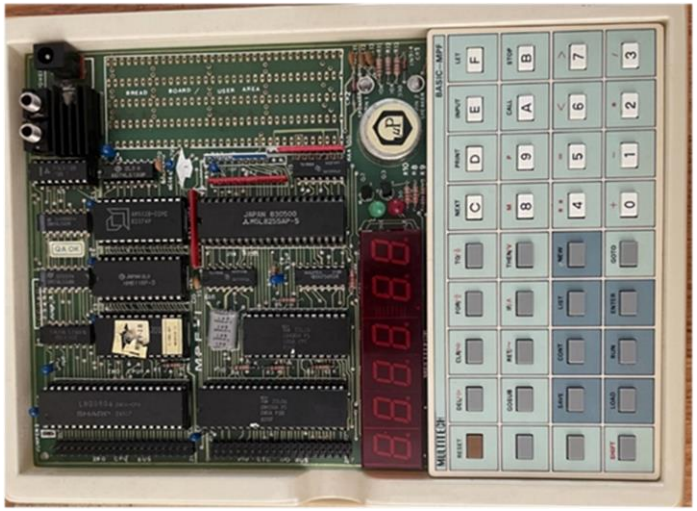
Tony's hand written rapid response, equipment operational advice. ▲

1982 – The design and introduction of the ME182A Batch Controller

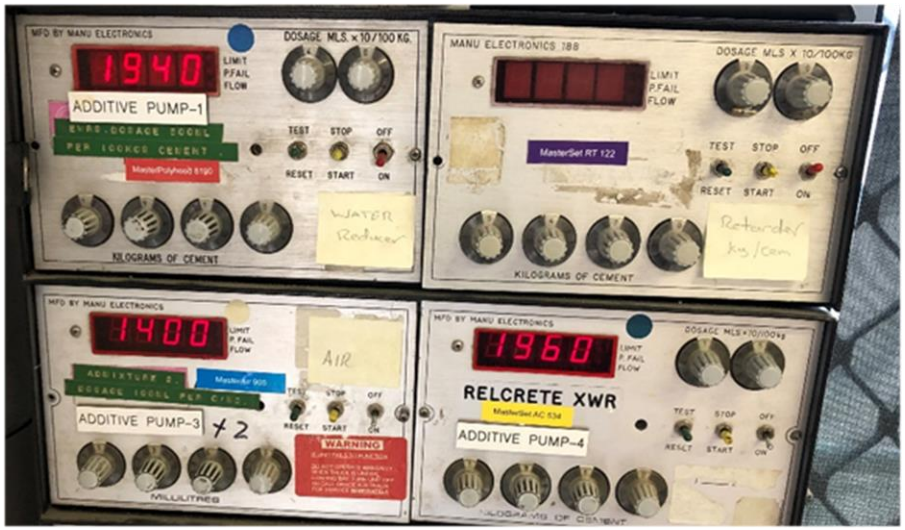
The **UME-09/10** units were an undeniable success but proved labour-intensive to manufacture. In 1982, Tony designed and unveiled the **ME182A**, a compact, panel-mount batch controller inspired by the earlier **ME143A** model created for the USA market. This digital batch controller revolutionized the industry by enabling more efficient manufacturing while offering a host of advanced features.

The **ME182A** had a compact front-mount PCB and a versatile panel-mount design, alongside enhanced operational safety features. Retaining the trusted plug-in plug-out design, the **ME182A** ensured seamless interchangeability and effortless servicing. Its adaptable design allowed it to be mounted into console cutouts or integrated into the **SHB** and **DHB** metal housing box range. To this day, many **ME182A** units remain in operation across regional concrete batch plants—a testament to their rugged build & unsurpassed reliability.

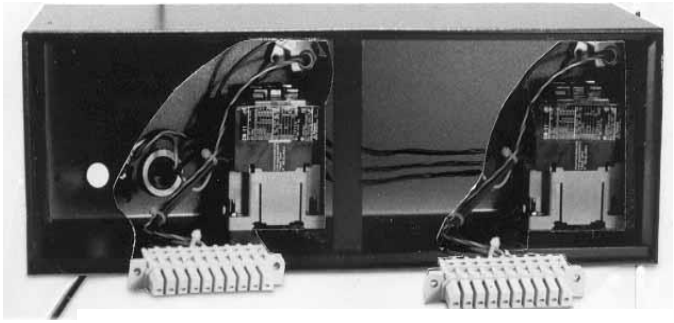




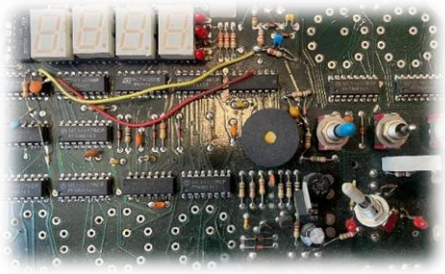
Micro-Professor *kit assisted in design of product circuits.*



ME182 *Variable Doserate KG's Batch Controllers*

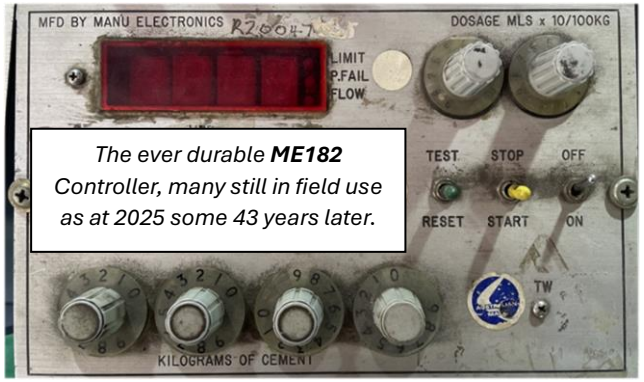


DHB *housing box wired contactor/pump outlets*



Populated ME-PCB

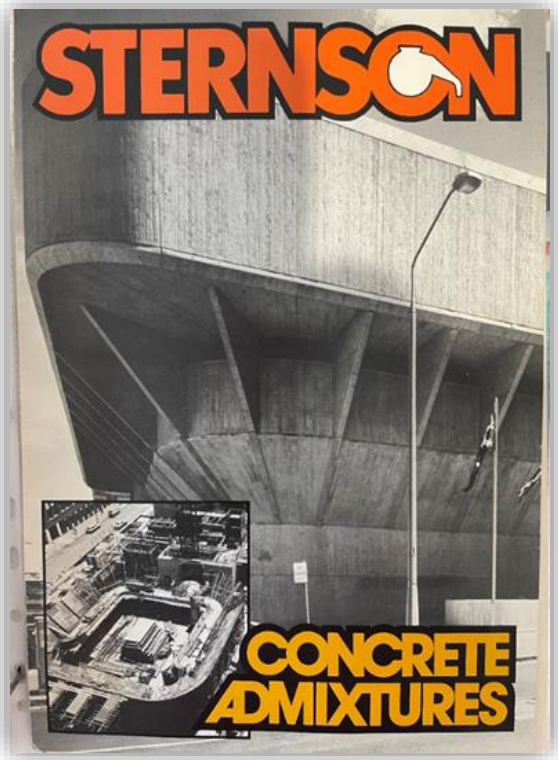
Prototype Counter



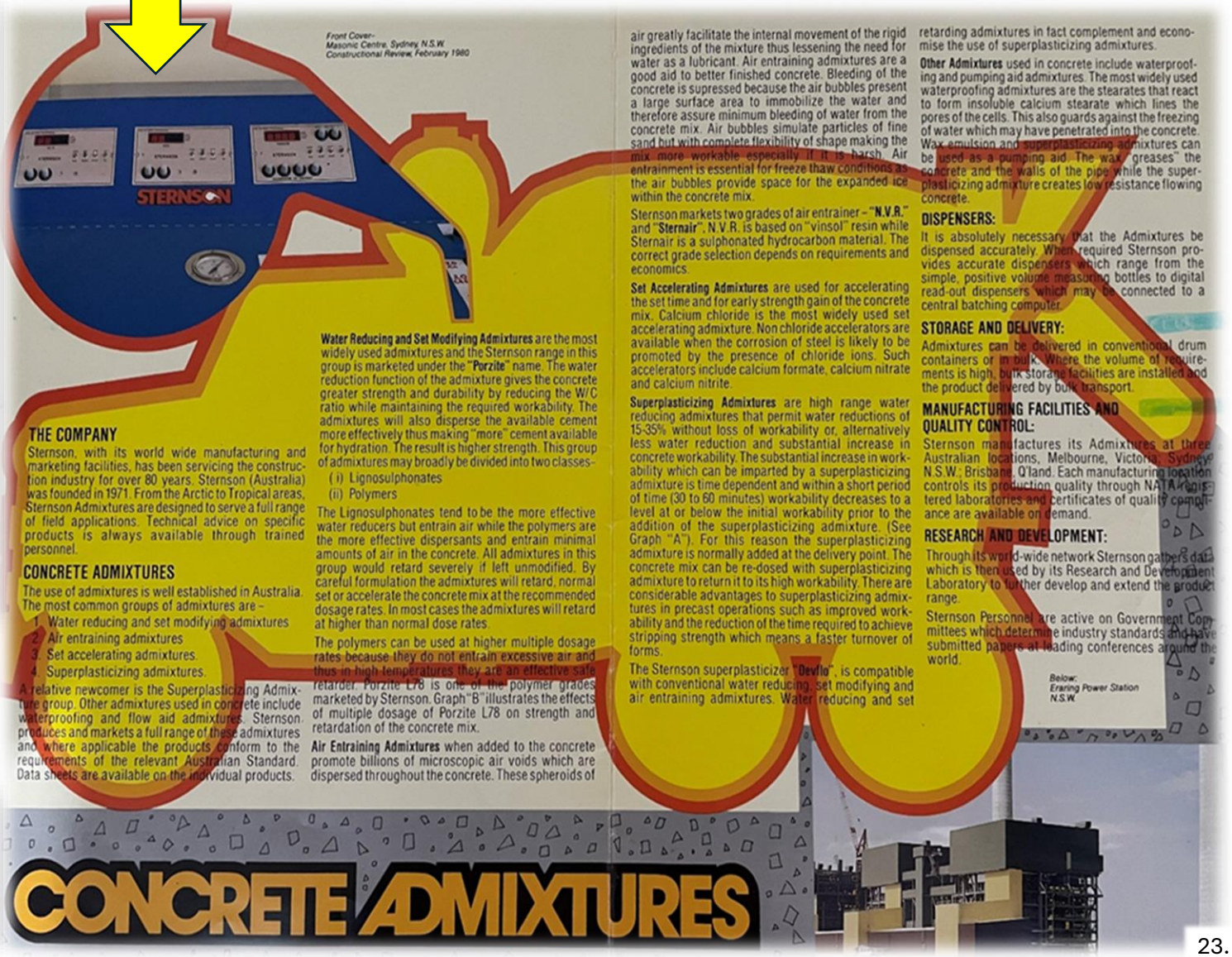
The ever durable ***ME182*** *Controller, many still in field use as at 2025 some 43 years later.*

1982 – National recognition in the Sternson Admixtures Newsletter

In 1982, Sternson, a leading Canadian chemical manufacturer, prominently featured the innovative Manu **ME182A** Batch Controllers in its industry Newsletter publication. This recognition further cemented Manu's reputation as a leader in the field.

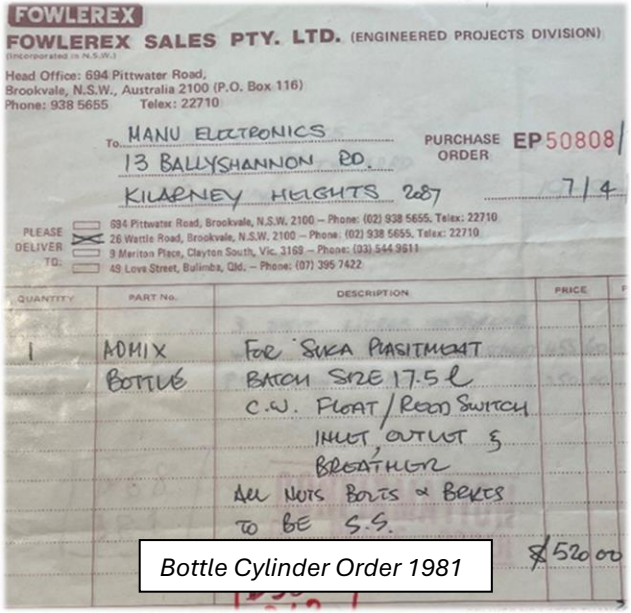


Above:
Unique concrete construction of the Sydney Masonic Centre using Sternson Porzite chemicals 1979.



1980's – Repositioning the Old and New Business

The Manu Process Control business was still operating from the home garage, but change was coming. There is still lingering demand for acrylic sight bottle dispenser systems, Tony who always satisfied customers continued to make them till 1983. In 1981, Tony designs for Joe Galea, from Westend End Industries the advanced **UBM81** Universal Batch Monitor Controller with Rate/Total indicator LCD for use in the mining industry, unfortunately no known samples survive. The **DB25** print dump output plug is designed for **ME182A** controllers.



FOWLEREX

FOWLEREX SALES PTY. LTD. (ENGINEERED PROJECTS DIVISION)

Head Office: 694 Pittwater Road, Brookvale, N.S.W., Australia 2100 (P.O. Box 116)
Phone: 938 5655 Telex: 22710

To MANU ELECTRONICS
13 BALLYSHANNON RD.
KILLARNEY HEIGHTS 2087

PURCHASE ORDER EP50808

7/4

PLEASE DELIVER TO:
694 Pittwater Road, Brookvale, N.S.W. 2100 – Phone: (02) 938 5655, Telex: 22710
26 Wattle Road, Brookvale, N.S.W. 2100 – Phone: (02) 938 5655, Telex: 22710
9 Meriton Place, Clayton South, Vic. 3169 – Phone: (03) 544 9611
49 Love Street, Bulimba, Qld. – Phone: (07) 395 7422

QUANTITY	PART No.	DESCRIPTION	PRICE
1	ADMIX BOTTLE	FOR SIKA PLASTIMENT BATCH SIZE 17.5 L C.W. FLOAT/REED SWITCH INLET, OUTLET & BREATHER ALL NUTS BOLTS & BRKTS TO BE S.S.	$520.00

Bottle Cylinder Order 1981

NEW SOUTH WALES RENEWAL

CORPORATE AFFAIRS COMMISSION

BUSINESS NAMES ACT, 1962

Section 20(3) 11

Certificate of Registration of Business Name

THIS IS TO CERTIFY that the undermentioned business name is registered under the Business Names Act, 1962.

Unless previously cancelled, registration will remain in force until the date shown hereon.

Given under the seal of the CORPORATE AFFAIRS COMMISSION at Sydney this twenty-third day of August 19 83

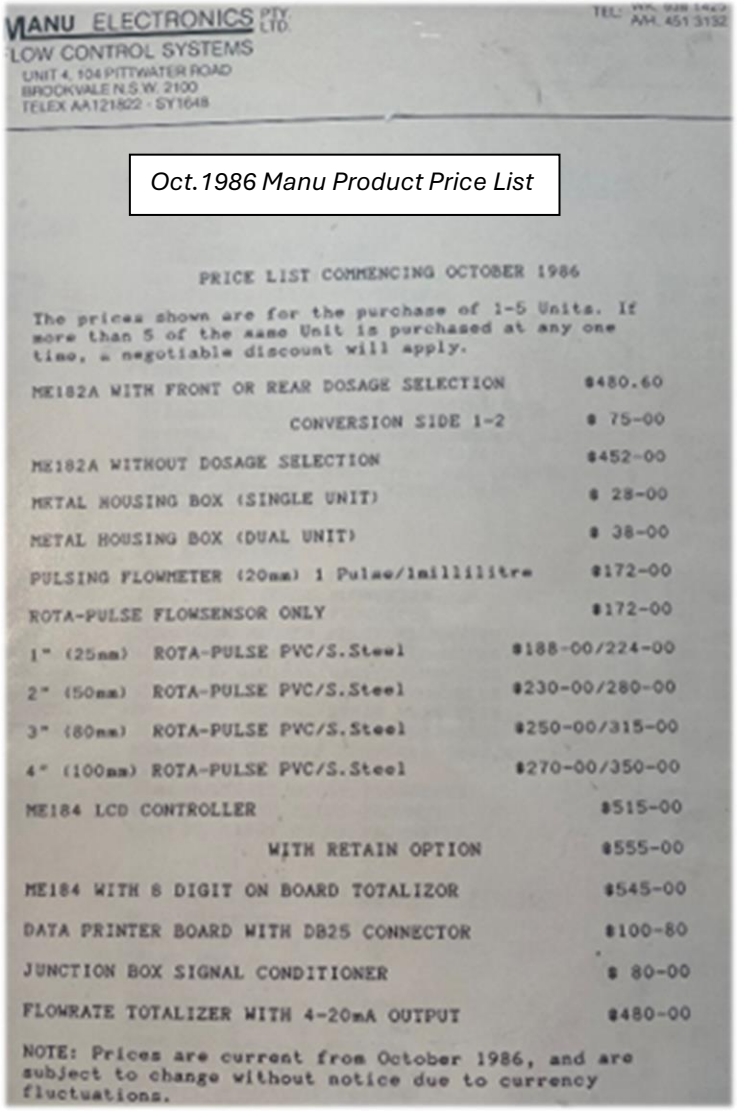
Commissioner

Business name and address of place or principal place of business:

MANU ELECTRONICS
13 BALLYSHANNON ROAD
KILLARNEY HEIGHTS

Date of expiry of registration. 31 July 1986

Business Name No. B53660-46



MANU ELECTRONICS PTY. LTD.
FLOW CONTROL SYSTEMS
UNIT 4, 104 PITTWATER ROAD
BROOKVALE N.S.W. 2100
TELEX AA121822 · SY1648

TEL: [illegible] AH. 451 3132

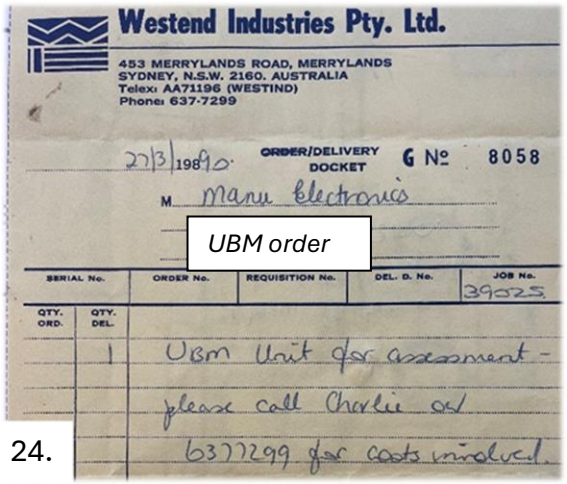
Oct. 1986 Manu Product Price List

PRICE LIST COMMENCING OCTOBER 1986

The prices shown are for the purchase of 1-5 Units. If more than 5 of the same Unit is purchased at any one time, a negotiable discount will apply.

ME182A WITH FRONT OR REAR DOSAGE SELECTION	$480.60
CONVERSION SIDE 1-2	$ 75-00
ME182A WITHOUT DOSAGE SELECTION	$452-00
METAL HOUSING BOX (SINGLE UNIT)	$ 28-00
METAL HOUSING BOX (DUAL UNIT)	$ 38-00
PULSING FLOWMETER (20mm) 1 Pulse/1millilitre	$172-00
ROTA-PULSE FLOWSENSOR ONLY	$172-00
1" (25mm) ROTA-PULSE PVC/S.Steel	$188-00/224-00
2" (50mm) ROTA-PULSE PVC/S.Steel	$230-00/280-00
3" (80mm) ROTA-PULSE PVC/S.Steel	$250-00/315-00
4" (100mm) ROTA-PULSE PVC/S.Steel	$270-00/350-00
ME184 LCD CONTROLLER	$515-00
WITH RETAIN OPTION	$555-00
ME184 WITH 8 DIGIT ON BOARD TOTALIZOR	$545-00
DATA PRINTER BOARD WITH DB25 CONNECTOR	$100-80
JUNCTION BOX SIGNAL CONDITIONER	$ 80-00
FLOWRATE TOTALIZER WITH 4-20mA OUTPUT	$480-00

NOTE: Prices are current from October 1986, and are subject to change without notice due to currency fluctuations.



Westend Industries Pty. Ltd.

453 MERRYLANDS ROAD, MERRYLANDS
SYDNEY, N.S.W. 2160. AUSTRALIA
Telex: AA71196 (WESTIND)
Phone: 637-7299

27/3/1980 ORDER/DELIVERY DOCKET G № 8058

M Manu Electronics

UBM order

SERIAL No.	ORDER No.	REQUISITION No.	DEL. D. No.	JOB No.
				39025

QTY. ORD.	QTY. DEL.	
	1	UBM Unit for assessment -
		please call Charlie on
		6377299 for costs involved.

***UME9/10** batch Controllers*

1983 – New factory premises and the new MEK20 Admixture Flowmeter

In 1983, encouraged by industry peers to take Manu Electronics to the next level, Tony purchased a 100m2 factory at U4/104 Old Pittwater Rd Brookvale, marking a key step in professionalizing the operation. By 1984, the team expanded with Tim Schonel, joining Tony, Lena, and Alex (working part-time), transforming the business into a dedicated two-and-a-half men and one-woman operation.

In 1984, the **MEK20** flowmeter is introduced, a rotary piston positive displacement design with a 1 pulse per 1 milliliter output, replacing the earlier **MEG20** model. The **MEK20** units, originally (Davies-Kent) mechanical register water meters manufactured at Box Road, Caringbah, were expertly modified at Manu headquarters using proprietary technology. The **MEK20** quickly became the mainstay 20mm admixture flowmeter for the next 12 years. Later additions to the product range included the **KGG20** (Davies-Shephard) and **MED20** (Dobbie-Dico) models, further expanding Manu Electronics' innovative lineup.

Head Internals

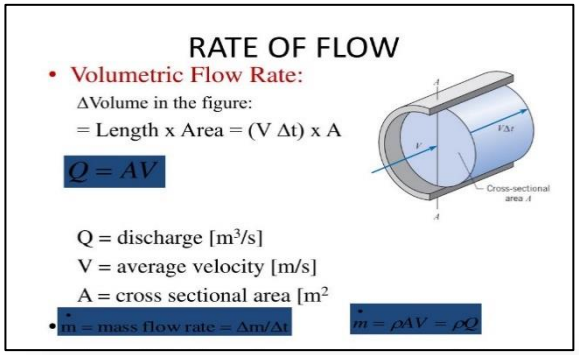
***MEK20 Admixture** pulse flowmeter.*

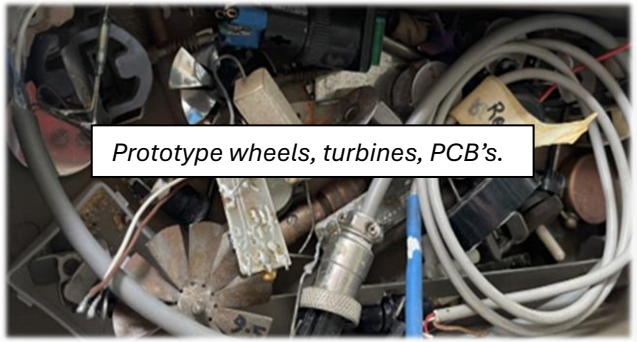
Internal chamber

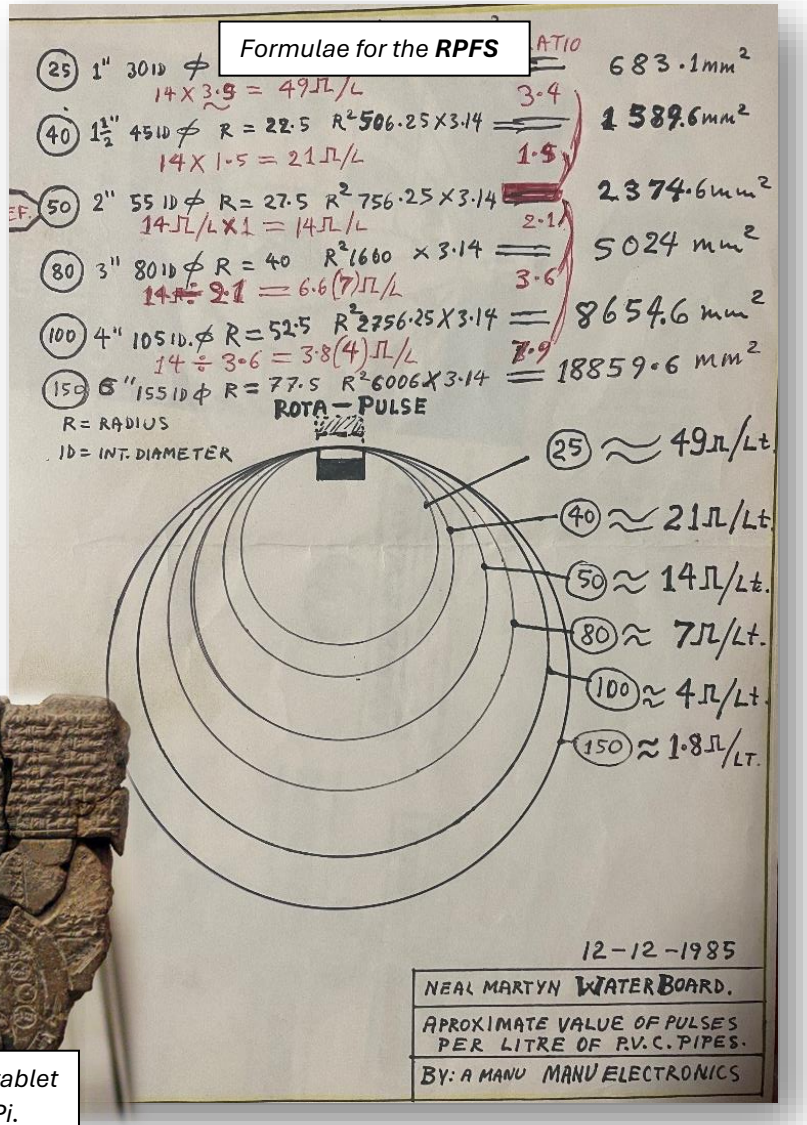
Tony & Alex outside the Brookvale factory premises 1992.

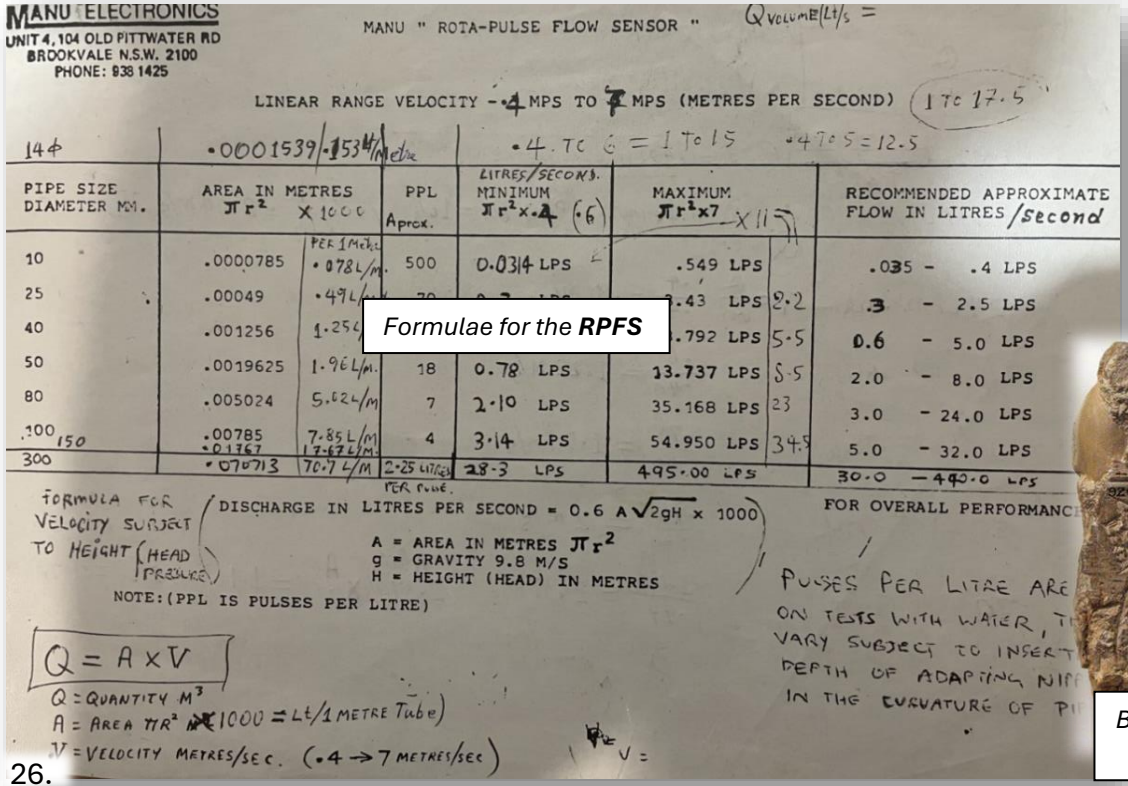
1980's – Understanding Fluid Dynamics an essential element to Manu's success

Tony delved deeply into the study of fluid dynamics, which were first applied by the ancient Egyptians and Babylonians. One Babylonian tablet 1680 BC indicates a value of 3.125 for Pi. Previous studies and proven formulas by the past thinkers, are applied by Tony to design future tangible products like the **RPFS** flowmeter, where some are installed in 2 metre pipes at the iconic snowy mountains scheme.









Formulae for the **RPFS**

Babylonian tablet formula Pi.

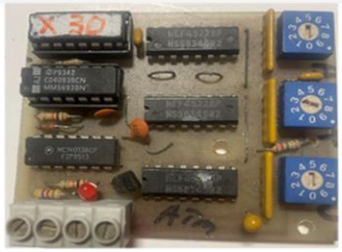
1983 - Research & Development of the RPFS pulse output flowmeter

Up to now many Concrete Batch Plant water and Slump-stand water flowmeters were using Kent PD-Piston of clock face mechanical manual reset type or Turbine low-res pulse types. These devices were prone to challenges, including high head losses and particle jamming, which limited their performance and reliability.

Tony had been studying, designing and experimenting with various designs of water meters since the late 1970's. This culminates with the introduction of the **Rota Pulse** Insertion Paddlewheel Pulse Output Flowmeter (**RPFS**) in 1983, with pipe sizes available from 25mm to 100mm pipe sizes in PVC or S/S materials. The Signal Conditioner Card (**SCC**) is also introduced for enhanced pulse output scaling. This is another game changer as it allows Manu to enter the diverse water measurement market with its own manufactured product.

Various Prototype flowmeters

Workaholic Tony pictured designing new products day & night.



◄ ***SCC*** *pulse scaling card*

Prototype RPFS flow meter

1983 to 1985 - Export Order and the new FRT Flowrate Indicator Display Unit for Sydney Water

In 1983, Manu Electronics secured another export order for the **ME182A** Controller and **MEK20** flowmeter, destined for Singapore. During this era, orders were still processed via telex or post, reflecting the communication technologies of the time. By 1985, the introduction of the fax machine proved to be a transformative advancement for the business. This new technology revolutionized sales and technical support by enabling scanned documents to be sent directly to clients and received instantaneously.

In 1985 Tony meets the head of the Sydney Water Trade-waste Division Mr Neal Martyn and designs the **FRT** indicator with pulse and 4-20mA outputs for use with the new **RPFS** insertion flowmeter. The systems are recommended for wastewater measurement in the official policy guideline manual for Sydney Water.

During this time Batch Plants now embrace the Manu **ME182A** water controllers and **RPFS** flow meters for batching/measuring their main plant water (dispensed into concrete mix) for pipe sizes 40, 50, 80 and 100mm with calibration within 5% accuracy.

GRACE **W. R. GRACE (SINGAPORE) PRIVATE LIMITED**
25, TANJONG PENJURU, JURONG INDUSTRIAL TOWN, SINGAPORE 2260.
TELEPHONE: 2653033 CABLE: DAREX TELEX: RS 25347

Purchase Order No. S- 2031 Date, April 25 19 83

To: Manu Electronics
13 Ballyshannon Road
Killarney Heights 2087
Sydney, New South Wales, Australia

Shipping Mark: W R GRACE SINGAPORE S-2031
Our Ref. No. S-2031
Final Destination Singapore

Bill to: W R Grace (Singapore) Pte Ltd
25 Tanjong Penjuru
Singapore 2260

Ship to: Same as above

Documents Required:
Commercial Invoice 4
Original B/L 3
Copy B/L 4
Certificate of origin 4
Packing List
Marine Insurance Policy Covering Warehouse to Warehouse (All Risks) Clauses for 110% Full C.I.F. Value.

Terms: 30 days
Delivery Date. As soon as possible
Shipment by: seafreight Prepaid / Collect

Quantity	DESCRIPTION	PRICE Unit	Total
	DO NOT DUPLICATE - CONFIRMATION ONLY REF: OUR TLX 1100 APRIL 25,1983		
2 units	DIGITAL COMPUTER DISPENSER PANEL MOUNT TYPE ME182-A		A$ 880.00
2 units	FLOW METER		A$ 300.00
		EX WORKS (?)	A$1,180.00

Special Instructions: Please acknowledge receipt of this order by returning the yellow copy to us at your earliest convenience and telex / cable advise shipment status when available.

PLEASE COMPLETE AND RETURN W. R. GRACE (SINGAPORE) PRIVATE LIMITED

TO: MANU ELECTRONICS

NNNN
ZCZC B0A9392 XAA022 MPN440 TL1179
AASD HL RSSE 032
SINGAPORE 32/29 23 1620

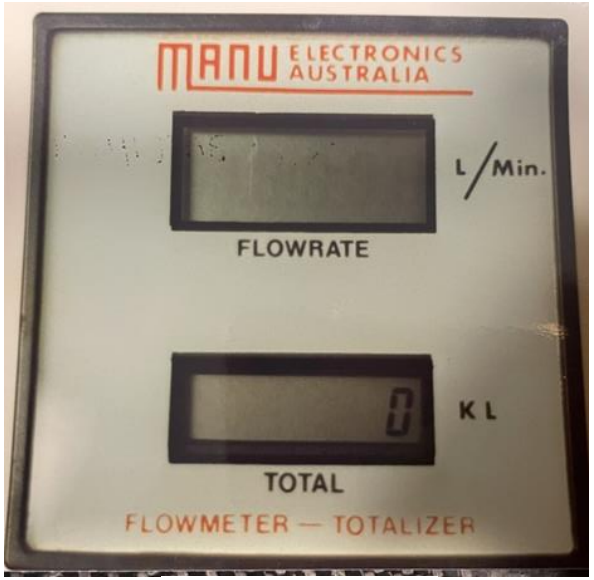
LT
TEL.NO.451-3132
MANU ELECTRONICS
SYDNEY AUSTRALIA

OVERSEAS TELECOMMUNICATIONS COMMISSION (AUSTRALIA) INTERNATIONAL TELEGRAM OTC

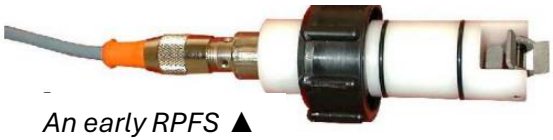
▲ *The Telex order.*

◄ *Official Singapore order mailed.*

The FAX machine ► a business game changer.



The original FRT ▲



An early RPFS ▲

1985 - New ME184 Batch Controller and RPFS orders for major production plants

The **ME184** dual LCD Batch Controller is introduced to the product range, offering rear adjustable K-factor calibration and added battery backed LCD totaliser. An order is received for the Mauri Food Processing Plant for **ME184** and **RPFS-PVC80** water flowmeters.

The company receives an order for **ME184** and **RPFS-GAL50** water flow sensors for Mt Piper Power Station and for the MBT factory ops. In July 1985, Manu Electronics sole partnership is registered as Manu Electronics Pty Ltd, with Tony, Lena & Alex as Directors.

Mauri Process Engineering Co.
A division of Burns, Philp & Co. Ltd. (Inc. in NSW)

Purchase order

67 EPPING ROAD,
P.O. BOX 219,
NORTH RYDE, N.S.W.
AUSTRALIA 2113
Phone (02) 888 9488
Telex Mauri AA21276

CONFIRMATION ONLY
==========

MANU ELECTRONICS
UNIT 4,
104 OLD PITTWATER ROAD,
BROOKVALE NSW 2100

Date: 13th November, 1985
Requisition number: 12408

No. MP 1257

This order number must be quoted on all invoices and dockets

Please supply the undermentioned and deliver to: TO BE ADVISED. DELIVERY BY 10TH DECEMBER 1985

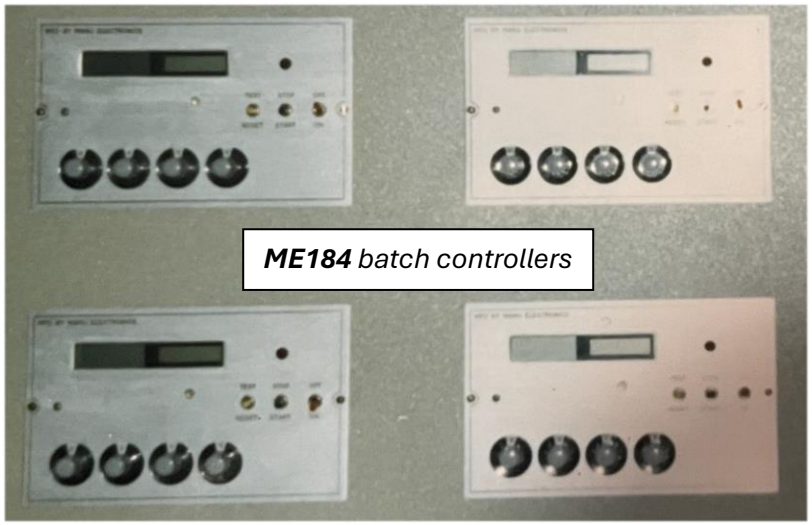
QUANTITY	DESCRIPTION	PRICE
4	ME182A LED BATCH CONTROLLER WITH EXTERNAL 6 DIGIT LED TOTALIZER. UNIT TO BE WATERPROOF AND INCLUDE RUBBER BOOTS OVER THE SWITCHES. 240V OUTPUT REQUIRED FOR SOLENOID AND PUMP CONTACTOR WHICH IS ACTIVE ON START AND NON ACTIVE AT END OF BATCH BOOTS NS030L C&K	$477 PLUS $ 59 EACH
4	ROTAPULSE UNITS 1" NOMINAL (1¼ BSPF) IN 316 SS	$195 EACH
	TOTAL ORDER	$2,924

D49 204

NOTE: UNITS WILL BE HANDLING VINEGAR AND THE REQUIRED ACCURACY IS ½% OF BATCH SIZE WHICH MAY BE BETWEEN 23 TO 274 L AT A RATE OF APPROXIMATELY 4500 L/HR 75 L/MIN 1.25 L/SEC.

I hereby certify that Burns Philp & Co. Ltd. is the holder of Sales Tax No. 2-060-995

For and on behalf of



***ME184** batch controllers*

***RPFS** flow sensor installed and Tony Manu at Mt Piper Power Station 1985*

1982 to 1986 – Alex at Prime Computer, the Milk Run Business and Manu Electronics.

In early 1982, Alex secured a full-time job at Prime Computer Inc at Blue St North Sydney. By 1984, he returns to part-time work at Prime Computer 9am-1pm three days per week while dedicating residual time to Manu Electronics and the newly acquired Milk Run business.

In late 1983, with life savings and a loan from his parents, Alex buys the local Killarney Heights milk run business which included a 2 ton milk delivery truck. The business entailed delivering dairy products—such as milk bottles and cartons, eggs, and other items—from the Dairy Farmers Milk Depot in Belrose. Operating six days a week from 3 PM to 8.30 PM, Alex managed all-weather deliveries to designated households in Killarney Heights and returned empty bottles to the depot after each run.

However, the business faced significant challenges when the Dairy Commission of NSW was deregulated, allowing supermarket giants to sell and import milk. This policy change drastically devalued the business, and Alex ultimately sold it at a loss in early 1986.

Prime mainframe room- Nth.Syd 1983. ▲

◄ Prime H/O 15 Blue St Nth Sydney.

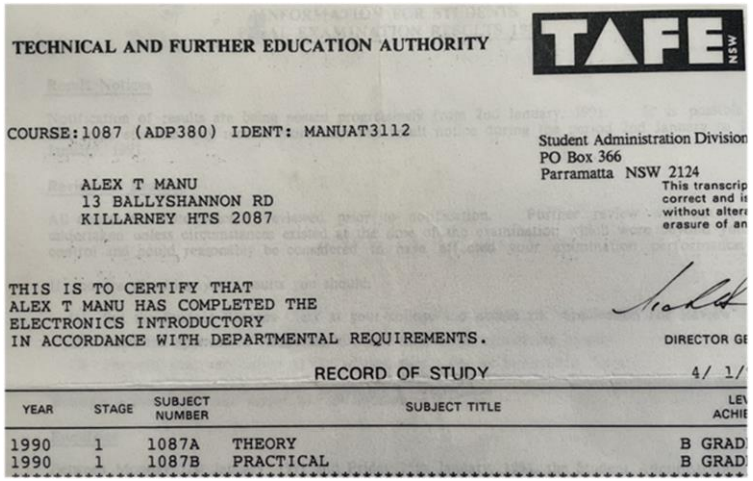
Commuting to Prime was either by Train or Drive with the Kingswood. ▲

1986 – Return to Origins.

After disposal of the Milk Run Business, in August 1986, Alex convinces Tony to have 3 weeks off work and join him in Greece (after a 40 year absence after leaving the war torn region), Alex stays on and travels to Sweden and throughout Europe until December 1986.

The Milk delivery truck.

Soldering PCB's. ▲



TECHNICAL AND FURTHER EDUCATION AUTHORITY

TAFE NSW

COURSE:1087 (ADP380) IDENT: MANUAT3112

Student Administration Division
PO Box 366
Parramatta NSW 2124

ALEX T MANU
13 BALLYSHANNON RD
KILLARNEY HTS 2087

This transcrip
correct and i
without alter
erasure of an

THIS IS TO CERTIFY THAT
ALEX T MANU HAS COMPLETED THE
ELECTRONICS INTRODUCTORY
IN ACCORDANCE WITH DEPARTMENTAL REQUIREMENTS.

DIRECTOR GE

RECORD OF STUDY

4/ 1/

YEAR	STAGE	SUBJECT NUMBER	SUBJECT TITLE	LEV ACHIE
1990	1	1087A	THEORY	B GRAD
1990	1	1087B	PRACTICAL	B GRAD

Continuing the electronics study legacy.

Ancestral village Rula/Kotas where the Manu's began businesses.

Tony & Alex arrive in Macedonia Greece.

1984 to 2009 -Catherine intertwined with the Manu businesses

The Manu's were very much a family team, supporting one another across various businesses. Since 1984, Catherine occasionally assisted Alex with milk run deliveries in Killarney Heights. In 1988, she began her part-time journey with Manu Electronics, working at the first Brookvale factory until 1992, where she assembled, soldered, and tested electronic products.

After returning from Europe in 1993, following various endeavours, Catherine, with the help of Tony and Alex, established the Medusa Bric-a-Brac and Furniture business in 1995. This new venture was set up in Tony's shop at 334 Penshurst Willoughby, just two doors down from the original TV Electronics business. The business thrived until 2009 when advancements in online buying and selling platforms impacted its viability, along with the arrival of her son, Michael.

Catherine 1983 on Alex's milk truck, ready to assist with the day's deliveries.

◄ *Rear of the new Medusa Premises 1995.*

*Catherine in 1988 assembling and soldering **ME188** Controllers, Lena pictured in the background.*

1995 to 2009 - The Manu Medusa Furniture Shop – Charismatic Creativity

The Manu family was always creative and resourceful, a spirit that flowed through Catherine Manu—an inspired restorer, painter and sculptor. The Medusa furniture business embodied this passion, thriving as a hub of creativity for 14 years. Throughout its journey, Catherine received invaluable support from her parents, Tony and Lena Manu, who played a vital role in the business's success.
An iconic enterprise, Medusa even earned a feature appearance on the Kerri-Anne Kennerley Midday Show on Channel 9—cementing its legacy as a Manu business that will always be remembered and never forgotten.

Catherine restoring items for future sale ▲

Madam Medusa. ▲

Lena minding the shop whilst Catherine is out buying. ▲

Lunch at Medusa, Tony assisting Catherine and Mark ▼

◄ The famous shop front window display at night.

1986 to 1988 - Alex returns from Europe and Joins the Business fulltime heralding change

Following a pivotal call from Tony, Alex returned from Europe in Dec.1986 to join Manu Electronics full-time. Determined to build his expertise, Alex enrolled in electronics courses at TAFE, attending three nights a week for the next three years. During this time, he absorbed Tony's vast knowledge of flow dynamics, while also honing his skills in accounting, business and computing. Equipped with this diverse expertise, Alex initiated a series of transformative changes within the business. Manu Electronics P/L then implemented a modernization and expansion adding manufacturing machines and mezzanine levels to the Brookvale Factory unit.
New modernized product specification datasheets are produced and a Amiga-64 accounting computer and printer system is installed.

Tony and Alex critically examined the product range, engaging with markets and customers to identify their needs. This collaborative effort led to the design of new products and an expanded range to meet growing application opportunities. The **MEK** admix pulse flowmeter series, originally limited to 20mm, was now offered in additional sizes of 25, 32, 40, and 50mm, to meet expanding customer requirements.
The first **MEKLCD4** resettable flowmeters are introduced to the product range with the first LCD micro-amp Ni-cad battery -powered with an incredible 8-year life. After a concrete truck driver is killed peering into the mixing barrel, the first Manu Resettable flowmeter is installed on the rear of a mobile concrete truck mixer in 1988, it becomes mandatory government requirement a few years later.
The business grows and employs more staff, Cath Manu, Randall-G., Steve Vasiliou, Hannele-S and young Stephane-G (aka the Frenchman) join the business from 1988 onwards. On the memorable date 8/8/88 the respected old patriarch Lazarous Manu passes on.

Tony with the thumbs up for the new office equipment.

MEK20LCD4 *Reset Meter* ▶

Readymix Truck with first reset meter installed ▼

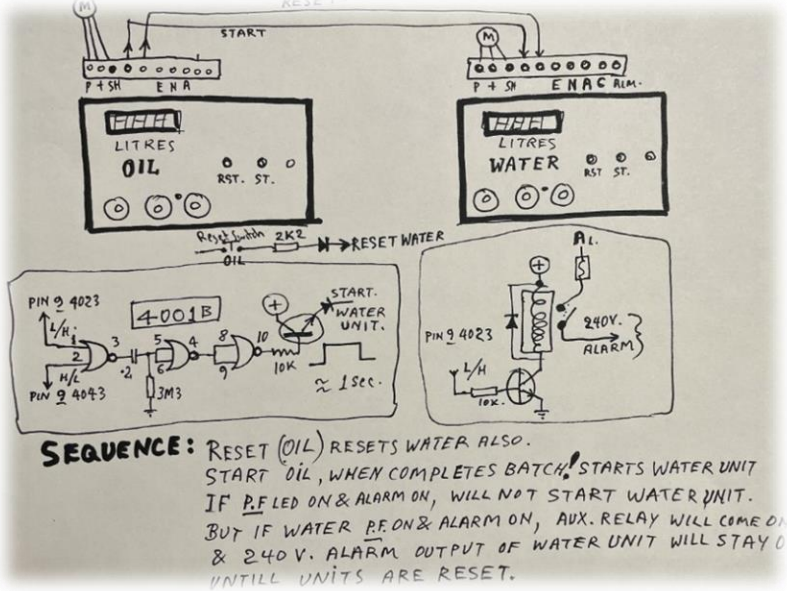
1987 to 1989 – Exciting times ahead - ME188 Batch Controller and more

In 1988, the **ME188** Batch Controller was introduced as a significant upgrade to the **ME182A** design, incorporating improved internal components. Over the next seven years, the unit dominated the market, with more than 7,000 units produced before being succeeded by the ME995 series in 1995.

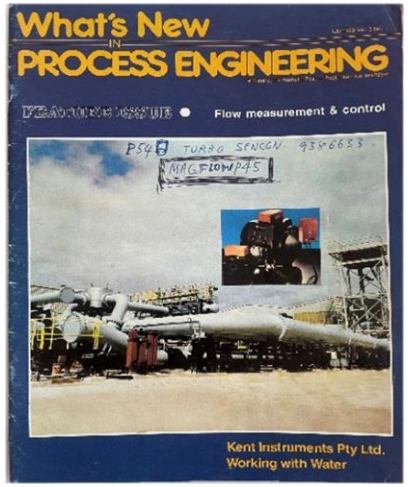
True to their innovative spirit, the Manu's consistently responded to customer needs, refining and enhancing products. Tony, always at the forefront of design, developed new circuit concepts that revitalized existing products. Amidst the team's relentless pace and dedication, the factory's legendary table tennis table became a cherished lunchtime escape—a stress-relieving staple that endured for the next 25 years.

◄ *Custom Frequency Generator for testing ME188 units.*

Snail mailed Purchase Order from N.Z. ▲



Acclimatizing to the latest PC technology. ◄



Custom design mod for Gainsborough hardware VIC. 1989 ▲

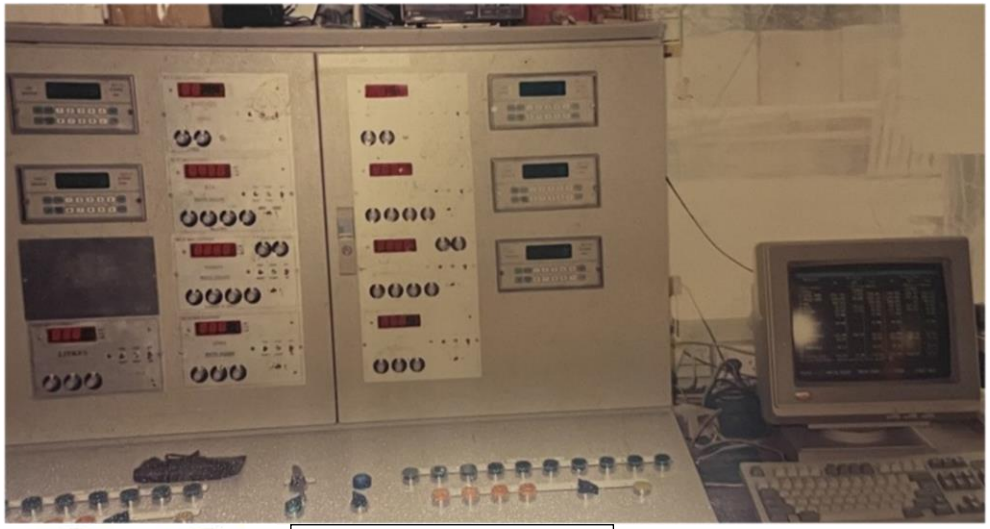
The much loved Table Tennis Table, was a lunch break necessity. ►

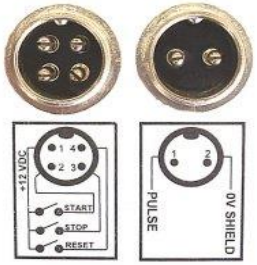
1980's – The coming of PLC/Computers and Manu revolutionizes the Premix Concrete Batch Plant Industry

In 1986, the Australian Compu-Batch Computer/PLC system was installed at the first Concrete Batch Plant at Boral Artarmon. The Manu ME182A Controllers proven advanced safety features, prompted the industry to request their integration into the overall operating system. To meet this demand, Tony designed an interface command function for the **ME182A's**, incorporating Opto-isolated pulse output **MC2** plugs, which were connected to PLC inputs.

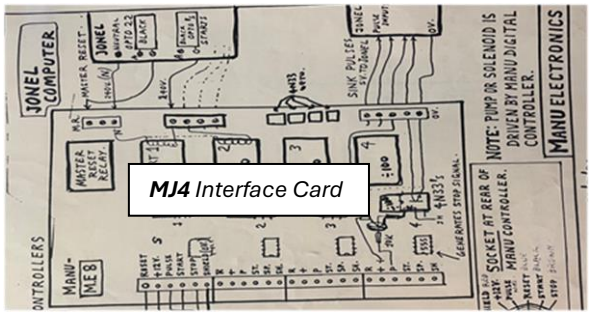
In 1988, American computer batch systems began entering the market, including Jonel, Phoenix, Alcon-Eagle, and later Command Batch. The Jonel System was installed at Pioneer Concrete Pyrmont, while the Phoenix System was implemented at Hymix Concrete Pyrmont. However, the PLC Input AC or DC-I/O speeds of these systems were limited and unable to handle the highly accurate 1000ppl resolution pulses of the Manu Admix flowmeters. To address this issue, pulse dividers such as **PCB10/20/50/100** pulse divider cards were employed to restrict pulse speeds.

For 240VAC I/O configurations PLC inputs, necessitated further innovations from Manu to enable the PLCs to interface with the ME Batch Controllers. This led to the development of the **MJ4** and **MP4** four-channel interface cards, equipped with **-5P** interface plugs, specifically designed to integrate with the Batch Controllers.





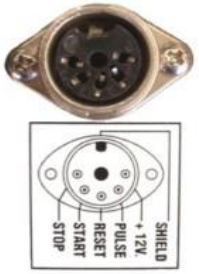
▲ *Boral Artarmon with Compu-Batch PC and Manu **ME182A +MC2** interface.*



***MJ4** Interface Card*

PCB50

▲ *Pioneer Pyrmont with Phoenix PC and Manu **ME188 +5P +MJ4** interface.*



The 1980's – A highly successful decade comes to a close

Major product milestones included export sales to key international markets such as the USA, Hong Kong, Singapore, and New Zealand. Notable product launches included the compact **ME182/188** Batch Controllers, **MEK** pulse output and **LCD** resettable flowmeters, **FRT** flowrate/total indicators, and the **RPFS** Rota Pulse Flow Sensor. The automation of Concrete Batch Plants through computerized systems marked a significant leap forward, while expanded sales catered to broader fluid measurement applications. Key improvements during this period encompassed the establishment of a new factory, installation of the renowned Manu V-notch Sydney Water-Board-inspired Flowrig, and the adoption of technologies such as the facsimile machine with a scanner, mobile cell phones, and advanced computer systems. The company's growth was fueled by Tony's seasoned wisdom and experience, combined with Alex's fresh energy and drive.

Manu's Motorola Mobile phone was indispensable for onsite service.

Milestone: *1987-88 FY sales reach $ 295K, up 30% from the previous year.*

Pictured late 1980's: The famous Manu Test Flow Rig and still in use to this present day at the current premises in 2025.

1990's – Manu Electronics Dream Team.
Golden Decade of Products and Sales

*Above: The Barby's. Below: Jess with **MEK** production line.*

1998: L to R : Felix Palibino, Jess Baylon, Manu's Alex, Lena, Tony, Hannele & Stefan

1990's – Manu Equipment wins supply for major construction project contracts Worldwide

Manu **ME188** Batch Controllers, along with **MEK20** Flowmeters and **MJ4** interface cards, were successfully integrated with the USA Eagle automated batch systems. Manu consistently outperformed the American Bottle systems in the measurement of liquid admixtures at major project sites, including the Sydney Harbour Tunnel Project in 1991, the HK Lap Kok Airport project, and many others. For concrete mix applications demanding safe, accurate, and economical dispensing of blended construction admixtures, Manu Measurement Systems became the preferred choice.

The business reached a pivotal position, selling its systems to some of the largest global construction chemical companies, including Master Builders Tech., W.R. Grace, Fosroc and Sika, all of which had branches worldwide. This led to a ripple effect as overseas executives visiting Australia witnessed Manu Systems in operation firsthand. Australian expats such as Brian Carrick from MBT introduced Manu equipment in Indonesia, Vietnam and Hong Kong. Similarly, Steve Dyball promoted Manu systems in the Middle East, Chris Soler in South America, and Kerry Carr in Australia and China, all of whom strongly endorsed Manu's products. Additionally, Australian PLC/computer batch system companies, including George Hancock from Compubatch and Allan Reece from Autocon, offered complete system packages locally and internationally. Then the introduction of the **ME991** LCD Batch Controller in 1991 further solidified Manu's reputation for innovation and excellence.

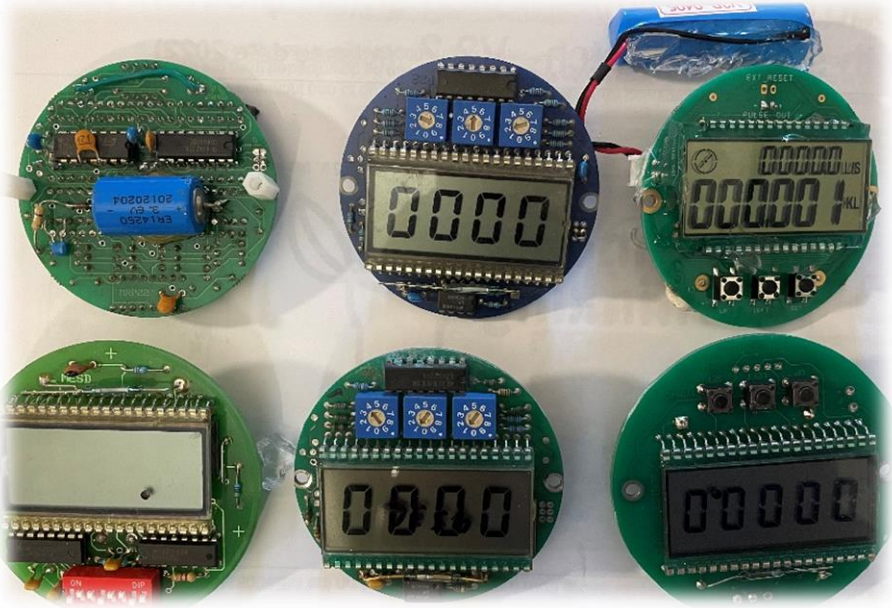
1991 – Tony & Alex in the bowels of the Harbour Tunnel.

*A proud Tony in the Batch room of the onsite concrete mixing plant with a Manu Electronics **ME188** controllers interfaced with PLC/Computer system.*

1990's – The rise of Resettable LCD Flowmeters

The introduction of LCD resettable flowmeters in 1987 marked a pivotal moment, giving rise to an entirely new application market that would see exponential growth over the coming decades. Manu's groundbreaking designs set the stage for the expansion of the **MEKLCD4** range, which would include sizes such as 20mm, 25mm, 32mm, 40mm, and 50mm. At the time, the Davies-Kent **KG** mechanical clock face counter reset meter range was the industry standard for reset meters. However, Manu revolutionized the market with its compact magnetic flip-top lid LCD reset meters, fundamentally altering industry dynamics. In 1991, Davies-Kent & Davies-Shephard approached Manu to supply **LCD-PCB** modules for its large-scale production, replacing traditional mechanical reset heads. This collaboration evolved into a significant strategic partnership.

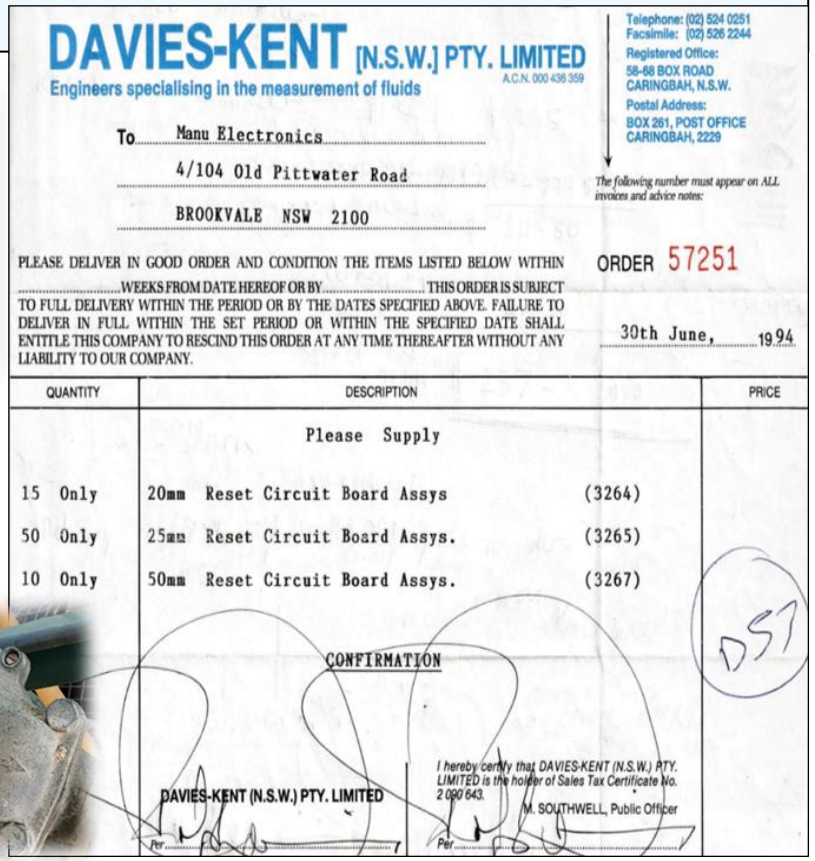
These Rotary Piston Positive Displacement flowmeters proved ideal for clean water applications and were widely utilized in Concrete Batch Plant Slump-Stands, as well as in irrigation and general water transfer systems. However, their limitations included pressure losses, susceptibility to internal damage from water hammer, and vulnerability to contamination from dirty fluids. With growing demand for concrete truck reset meters and increased inquiries for process and irrigation applications, Tony and Alex were inspired to design a future range of resettable flowmeters entirely manufactured by Manu Electronics, ensuring innovation and reliability.



PCB LCD resettable internal battery powered modules 1990's to present. ▲

▲ LCD-PCB in brass Kent capsule.

Original clock face KENT reset meter. ►



DAVIES-KENT [N.S.W.] PTY. LIMITED
A.C.N. 000 436 359
Engineers specialising in the measurement of fluids

Telephone: (02) 524 0251
Facsimile: (02) 526 2244
Registered Office:
58-68 BOX ROAD
CARINGBAH, N.S.W.
Postal Address:
BOX 261, POST OFFICE
CARINGBAH, 2229

To Manu Electronics
4/104 Old Pittwater Road
BROOKVALE NSW 2100

The following number must appear on ALL invoices and advice notes:

ORDER 57251

PLEASE DELIVER IN GOOD ORDER AND CONDITION THE ITEMS LISTED BELOW WITHIN ..... WEEKS FROM DATE HEREOF OR BY ..... THIS ORDER IS SUBJECT TO FULL DELIVERY WITHIN THE PERIOD OR BY THE DATES SPECIFIED ABOVE. FAILURE TO DELIVER IN FULL WITHIN THE SET PERIOD OR WITHIN THE SPECIFIED DATE SHALL ENTITLE THIS COMPANY TO RESCIND THIS ORDER AT ANY TIME THEREAFTER WITHOUT ANY LIABILITY TO OUR COMPANY.

30th June, 1994

QUANTITY	DESCRIPTION	PRICE
	Please Supply	
15 Only	20mm Reset Circuit Board Assys (3264)	
50 Only	25mm Reset Circuit Board Assys. (3265)	
10 Only	50mm Reset Circuit Board Assys. (3267)	

CONFIRMATION

DAVIES-KENT (N.S.W.) PTY. LIMITED
Per .....

I hereby certify that DAVIES-KENT (N.S.W.) PTY. LIMITED is the holder of Sales Tax Certificate No. 2 080 643.
M. SOUTHWELL, Public Officer
Per .....

DS7

1990's – The Sydney Water Board – Special Projects, Trade-Waste Measurement and Samplers

Since the mid-1980s, Manu's relationship with Sydney Water evolved into a trusted partnership, enabling the company to deliver rapid, custom solutions tailored to customer needs. Manu provided high-resolution pulse flowmeter solutions for flowrate monitoring applications. In 1993, at the request of the Sydney Water Board, the company developed the Automatic Sampling Machine (**ASM**) for the Trade-waste department.

The original **FRT** was eventually replaced by the **FRT01** and later the **FRT02**, designed for outdoor use and featuring MIL-spec output plugs as the new standard for connection to water capture sampling machines. Over 100x **FRT01/02** systems, along with **RPFS** flow sensors, were installed at industrial sites, with annual calibration managed by contractor Joe Hajdu. Over time, Magflows were introduced as a premium upgrade option.

WATER BOARD
SYDNEY – ILLAWARRA – BLUE MOUNTAINS

PURCHASE ORDER No. YG0006156
(No. MUST be quoted on all invoices, delivery dockets and correspondence)
SEE BACK FOR CONDITIONS

Date: 25/05/93 Revision No.: 0 of 0 Page No.: 1

Deliver To:
GOODS TO BE PICKED UP

Purchasing Officer: TONY GALLAGHER Phone: 644-0349
Requisitioning Officer: R.STEWART Phone: 7960649
Requisition No.: YGR929811

To:
MANU ELECTRONICS
4/104 OLD PITTWATER RD
BROOKVALE

2100

Forward Invoices To:
PO BOX 170
YAGOONA
2199

Payment Enquiries: PHONE: 6440 469

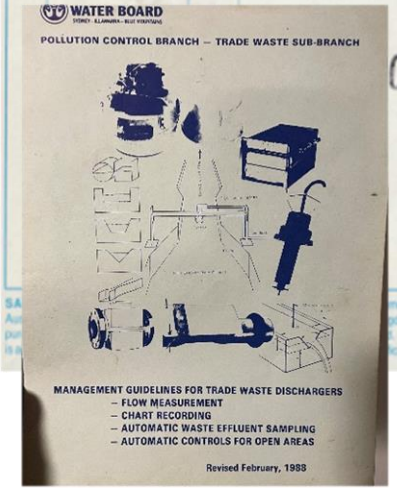
Delivery Required By: 25/05/93

Settlement Terms: 30 DAYS AFTER INVOICE DATE

Line	Quantity	Quantity Unit	Description	Board's Item Number	Price	Price Unit	Line Value
1	4.0000	EACH	PULSE HEADS FOR KG50&80MM		350.00000	EACH	1400.00

TOTAL VALUE 1400.00

1993 -Sydney Water Board order for Manu-Kent high-res pulse units.



WATER BOARD
POLLUTION CONTROL BRANCH – TRADE WASTE SUB-BRANCH

MANAGEMENT GUIDELINES FOR TRADE WASTE DISCHARGERS
– FLOW MEASUREMENT
– CHART RECORDING
– AUTOMATIC WASTE EFFLUENT SAMPLING
– AUTOMATIC CONTROLS FOR OPEN AREAS

Revised February, 1988

WATER BOARD
PURCHASE ORDER
No. 292 330946
(No. MUST be quoted on all invoices & delivery d
Forward Invoice To:
WATER BOARD - North Western Region
P.O. Box 272 St Marys N.S.W. 2760
Phone: (02) 673 9605 Fax: (02) 673 9673

Manu Electronics
4/104 Old Pittwate, Rd
Brookvale 2100
Att: Tony

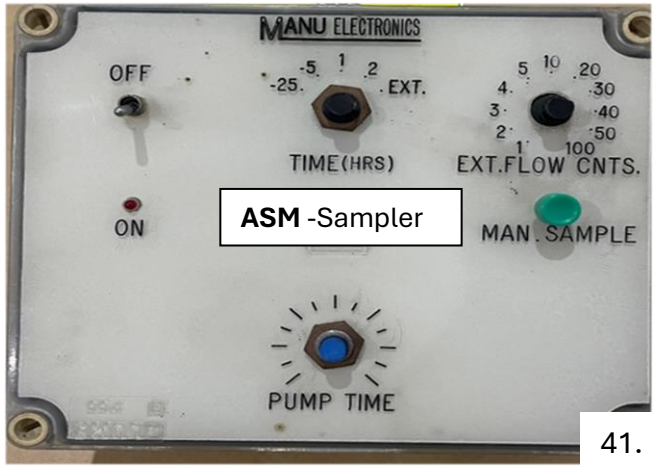
Delivery Required By 31/7/90
Deliver To: Manu Rd Mennington

Quantity 4
Description of Goods or Service: Flowmeter, 4 Digit ¾ DSP LCD
Unit of Purchase EACH
Price Per Unit $275-00
Contract Reference
CONFIRMATION

Description of Goods or Service

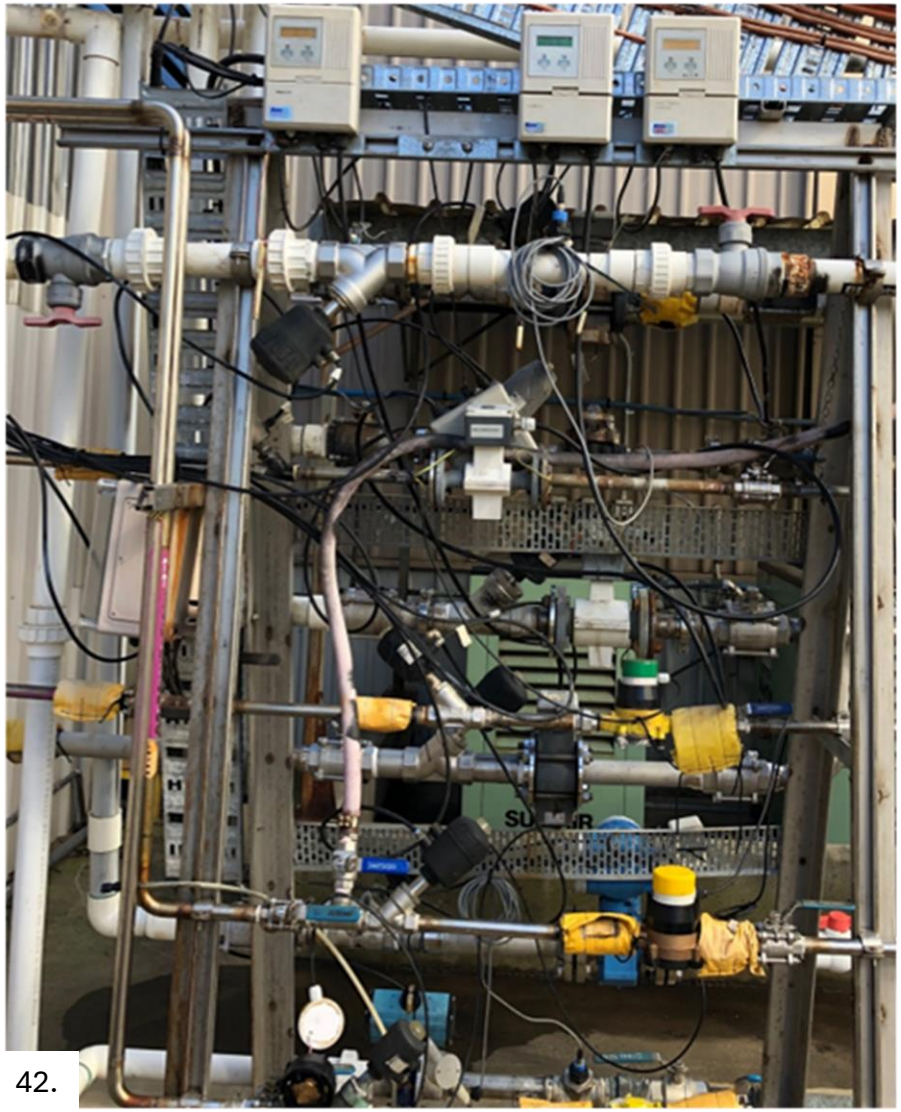
◀ *Manu FRT/RPFS mentioned in 1988 Water Board manual.*

Push button phone



1990's – Manu Equipment used in Admix Production Plants and on Admix Delivery Tankers

Manu's **ME188**, **ME991**, and **ME992** Batch Controllers, along with their Flowmeters, achieve significant popularity in admixture production plants and on admixture delivery tankers. Locations include Australia, New Zealand and various international markets, including Southeast Asia, South America, South Africa, and later the Middle East. Major global construction chemical companies such as **MBT-BASF**, **W.R. Grace**, **SIKA**, and **Fosroc** incorporated Manu's innovative solutions, further cementing the company's reputation for precision and reliability in the industry.



*1995 -MBT Jakarta Admix Plant with **ME992** Batch Controllers with Manu flowmeters.* ▲

*1991 to Present -BASF/MBS Sydney Admix Plant Tank Farm with Manu **MFS, RPFS, MES20-ST** and **MES25** flowmeters connected to various Manu Batch Controllers.* ◄

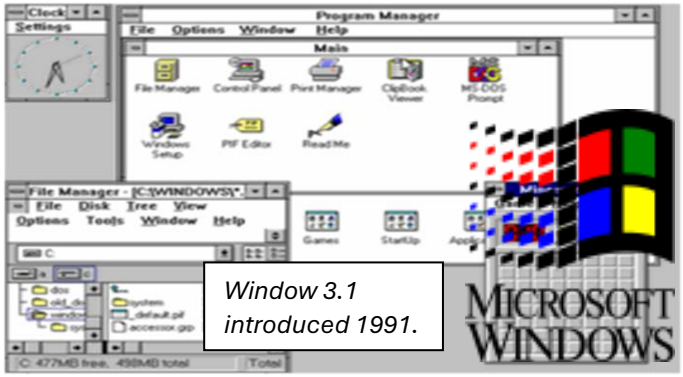
1991 to 1992 – The ME992 Batch Controller and MagMaster Flowmeter

The **ME992** LCD Batch Controller was designed to meet enhanced calibration accuracy requirements to within 1% adjustment, featuring a **x17** pulse input multiplier. This innovation supported the growing demand for the Rota Pulse Flow Sensor, widely used in larger pipes for measuring main plant water in Concrete Batch Plants.

As environmental regulations evolved, the need for capturing and reusing wash water in Concrete Batch Plants became increasingly important. The subsequent rise in the use of recycled water with sediment prompted the addition of the ABB-Magmaster and rebranded and reconfigured by Manu as the **MFS Magflow**, to the product range. This maintenance-free solution became a optimal choice for heavy recycle water batching measurement applications. Furthermore, the **MFS-**Magmaster was adopted for high-volume admixture measurement in Admixture production plants and on Admixture delivery tankers, seamlessly integrating with Manu batch controllers.
The introduction of Windows 3.1 was another milestone for the business. It enabled Alex to implement emails, create improved datasheets and leverage data tools to enhance operations. Manu then established its online presence with its website: **www.ozemail.com.au/-manu/index.html.**

ME992


MFS

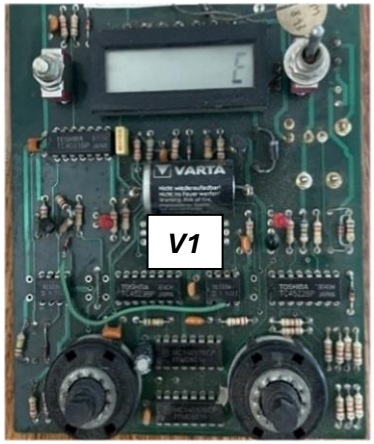


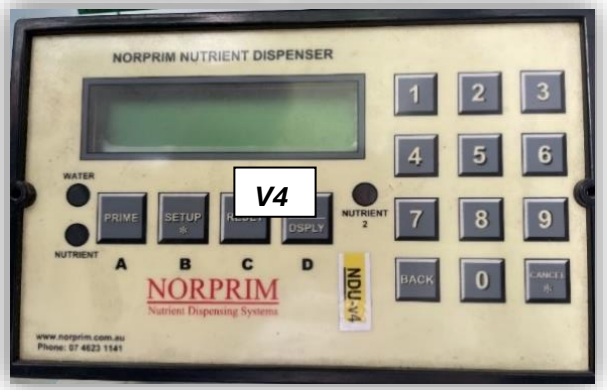
Window 3.1 introduced 1991.

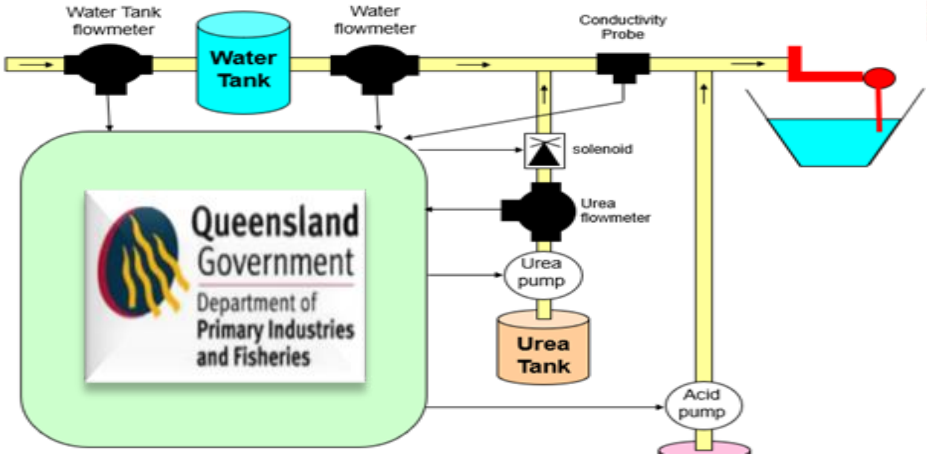

L to R: Tony, Stephane, Alex, Steve and Randall. ►

1991 - Nutrient Dosing Units designed for Northern Territory-DPI, QLD-DPI and Norprim

The Northern Territory and Queensland Department of Primary Industries & Fisheries approached Manu to collaborate on designing a system to assist farmers in proportionally dosing liquid urea nutrients into drinking water troughs for cattle and livestock in arid regions of NT and QLD. Over the next 25 years, Manu developed four **NDU** dosing unit models, incorporating **RPFS** flow sensors and **MEHR** flowmeters. The most successful design was the **NDU-v3**, with approximately 250 units produced. Tony travelled to Alice Springs, NT, to meet with government officials and farmers, gaining firsthand insights into the systems in operation. This partnership not only addressed critical agricultural needs in challenging environments but also highlighted Manu's innovative approach and commitment to supporting sustainable farming solutions.







Manu and Norprim deliver Healthy Cattle in arid zones

The Manu-Norprim nutrient dosing system, also known as water medication, was endorsed in regional newspapers for its effectiveness and ease of use. True to the Manu philosophy, the system was designed with simplicity and reliability at its core, ensuring effortless operation. Remarkably, at some sites they are still operating—a testament to its enduring quality.

Supplement devices

Water medicators give good results

by Désirée Bawden,
QUEENSLAND DEPARTMENT OF PRIMARY INDUSTRIES

In trials in central Queensland, pregnancy rates for breeder cattle supplemented with a Norprim water medicator (dispenser) were 15 per cent higher than for those with access to a dry lick.

A medicator is another way of administering medicine to animals through a controlled water supply. The average weight of the cattle on the water medicator was also slightly higher than those on the dry lick. Likewise the weaning weight of progeny in the water medicator trials exceeded those in the dry lick paddock.

LIVESTOCK

Queensland DPI

Northern Territory Government

NORTHERN TERRITORY DEPARTMENT OF PRIMARY INDUSTRY & FISHERIES

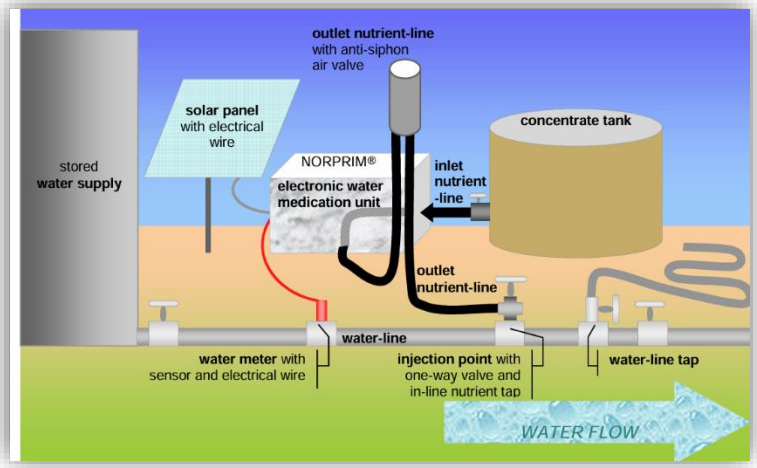
Keith Hill
Advisory Officer
Alice Springs

Arid Zone Research Institute
South Stuart Highway
PO Box 8760 ALICE SPRINGS
NT 0871 AUSTRALIA

Tel: 08 8951 8
Fax: 08 8951 8
Mobile: 0418 804
A/H: 08 8953

Putting a shade cover over the nutrient concentration tank and control box prevents the control box from

▲ *1992 article*



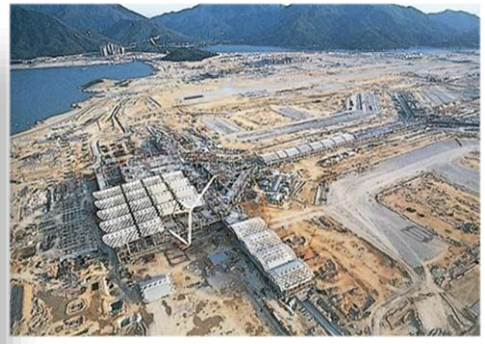
◄ *Healthy livestock due to water medication*

Original brochure with pictured NDU system and RPFS flow meter ▲

1991 to 1993 - ME693 six channel pulse divider interface LCD counter card

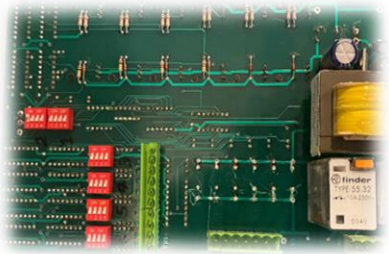
The **IC4CH**, a 4-channel interface unit, was designed in 1991 for Autocon P/L and incorporated Manu's proven dispensing safety features. Shortly afterward, the **ME693** unit was developed in response to requests from USA-based Computer/PLC batch system companies. These companies assured admixture suppliers that their PLC software included adequate flow safety protocols, negating the need for Manu Batch Controller safety features for flowmeters. The **ME693** was equipped to facilitate 6-channel counting and pulse division of the high-resolution **MEK20/KGG20** flowmeter pulses, while isolating pulse outputs to either 5-24VDC or 110-240VAC for PLC pulse inputs.

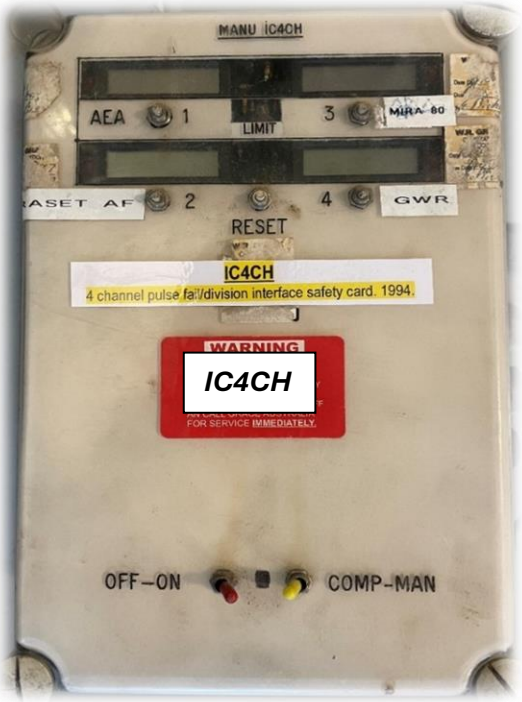
However, some years later, chemical overdosing incidents underscored the risks of relying solely on PLC software limited safety features. Manu's robust backup safety systems were subsequently reintegrated into computerized batching systems for flowmetered direct-feed volumetric setups, restoring confidence in operational safety standards. Over 200x **ME693** units were installed across Australia, New Zealand, Hong Kong, Singapore, and Indonesia, with a few still in operation today—a testament to Manu's enduring reliability.



Lap-Kok HK airport construction site ▲

*Manu **ME188** equipment pictured interfaced with Hood-Favco Computer batching system used at HK Airport site to measure critical chemicals. ◄*





◄ *Rear **ME693** PCB.*

1993 – Exports to South-East Asia and South America boom due to the father and/son workaholic team

Tony and Alex were deeply committed to their industry clients, continually engaging and collaborating to design, manufacture, and bring innovative products to market that address specific application requirements. Their relentless passion for overcoming challenges and achieving business success leads them to embrace demanding 12 to 16-hour workdays, five days a week, with additional half day Saturdays—a true testament to their work ethic and dedication. As Tony begins traveling more frequently for leisure, Alex takes on increasing responsibilities, growing more confident and immersed in the many facets of the business. Together, their father-and-son synergy continued to drive Manu's progress and innovation, making them an inspiring team.

GRACE

W. R. GRACE (HONG KONG) LIMITED

DEVON HOUSE, 20TH FLOOR, 979 KING'S ROAD, QUARRY BAY, HONG KONG. TEL: 5902828 FAX: 8112661 TELEX: 73663 CABLE: HKDAREX

基利士(香港)有限公司 香港鰂魚涌英皇道979號德宏大厦二十字樓

Purchase Order No. HK- 5798 **Date:** DEC 10 93

To : MANU ELECTRONICS PTY LTD., FLOW CONTROL SYSTEMS UNIT 4,104 OLD PITTWATER ROAD, BROOKVALE, NSW 2100, AUSTRALIA. FAXED 02-9385852 ATTN: ALEX MANU	**Shipping Mark :**	**Our Ref. No.** HK5798/40 **Final Destination** HONG KONG
Bill to : W.R. Grace (Hong Kong) Limited ~~Wilson House, 12-13 Fl., 19-27 Wyndham St., Central, Hong Kong~~ (see new address above)	**Documents Required:** Commercial Invoice 3 Original B/L Copy B/L Certificate of Origin Packing List Air Way Bill Marine Insurance Policy to be Arranged by: SELLER	
Deliver to : W.R. GRACE (HK) LTD. DEVON HOUSE, 20th FL., 979 KING'S ROAD, QUARRY BAY, HONG KONG.		
Terms : AGAINST INVOICE		
Shipment Date : PROMPT		
Shipment by : AIR FREIGHT "PREPAID"		

Quantity	Description	Price Unit (each)	Price Total
8 each	KG'S BATCH CONTROLLER - ME188-3	AUD535.00	AUD 4,280.00
4 each	S12C S12 + Central Computer Hold	90.00	360.00
4 each	MJ4 4 CH. Interface Card	620.00	2,480.00
18 each	KGG20 Flowmeter - 20mm	235.00	4,230.00
8 each	ME188-6 Litres 99.9 Batch controller	535.00	4,280.00
			AUD 15,630.00
	Delivery to airport		250.00
	Total FOB		AUD 15,880.00
	*** *** ***		Plus add freight costs Melbourne to HK.

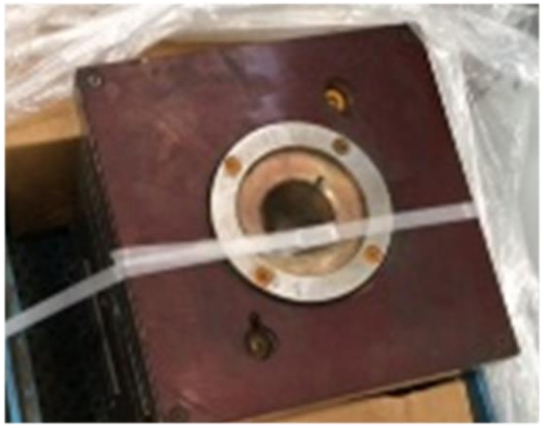
Important: All Invoices and documents must be sent to GRACE HK only.

*1993 – Grace HK order for new **ME188-3-S12-C** Batch Controllers, **MJ4** PLC interface cards and **KGG20** Admix pulse flowmeters for the Hong Kong Lap-Kok new airport* project.

1990's – Continued Growth requires improved methods of manufacture and outsourcing

To meet growing demand, new injection moulds were developed for the **RPFS** and the upcoming ABS-plastic **ME995** housing casings. The **ME995** facias transitioned from hand-painted engraved aluminium panels to silk-screened designs, enhancing production efficiency. Additionally, Rota Pulse rotor wheels, previously machine-riveted, began being made in larger numbers using die-cast moulding, while MRP heads and bodies were sand-casted in larger volumes at local foundries.

Higher volume selling products that once required hand assembly and soldering were now outsourced for assembly and wave soldering. Local companies such as GJL (George Lizier), Allegro, Benetron, Ramzonics, Shaw Process Castings, and others played a key role during this transition. However, as local component and labour costs increased over time, more production was eventually outsourced to overseas destinations.



◄ ***RPFS*** *mould.*

The various ***RPFS*** *rotor wheels cycle of development and use. From pressed alloy, PVC-ABS moulded, alloy casted, to the final sinted model type in use today.* ▲

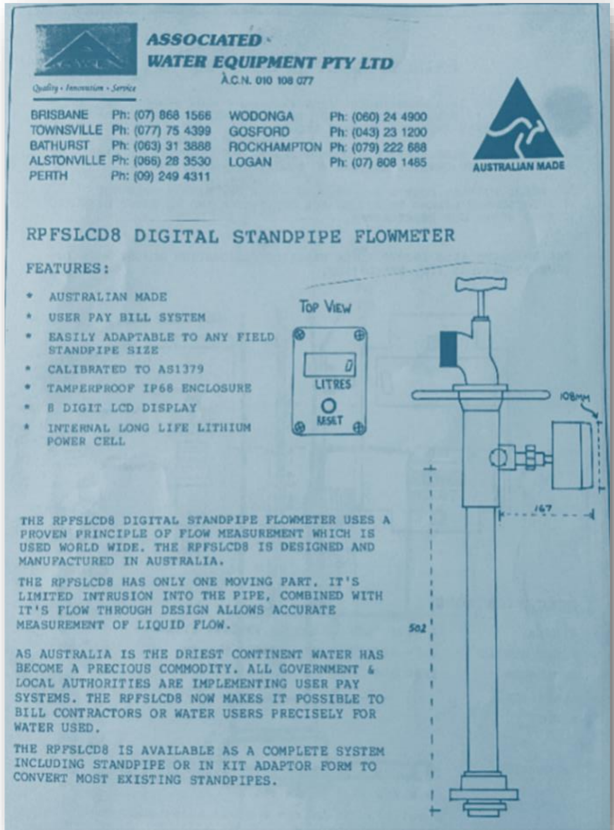
Contracted mass PCB production. ►

Tony and Nick making the 1st RPFS PVC wheel mould. ►

The trusted Mastercraft Lathe was still in use at 2025.

1990's – RPFS Rota Pulse expands into Irrigation and general water measurement applications

Tony and Alex were relentless innovators, thinking around the clock to tackle fluid measurement challenges presented by their clients. The father-and-son duo often worked late into the night, solving problems, performing calculations, flow testing and designing improved products. One notable effort was the development of the first version of the **LCD Standpipe** flowmeter (20+ year pre-cursor to the current Smart-Pipe™), created for AWE and Davies-Shephard between 1993 and 1997.
The **RPFSLCD4** and **RPFSLCD8** models were also introduced during this time, specifically catering to irrigation applications for pipes with diameters of up to 300mm. In addition, the company was commissioned by the CSIRO to design a special **RPFS** 6mm Copper low flow tube flowmeter for use in its laboratory at North Ryde.



ASSOCIATED WATER EQUIPMENT PTY LTD
A.C.N. 010 108 077
Quality • Innovation • Service

BRISBANE Ph: (07) 868 1566
TOWNSVILLE Ph: (077) 75 4399
BATHURST Ph: (063) 31 3888
ALSTONVILLE Ph: (066) 28 3530
PERTH Ph: (09) 249 4311
WODONGA Ph: (060) 24 4900
GOSFORD Ph: (043) 23 1200
ROCKHAMPTON Ph: (079) 222 688
LOGAN Ph: (07) 808 1485

AUSTRALIAN MADE

RPFSLCD8 DIGITAL STANDPIPE FLOWMETER

FEATURES:

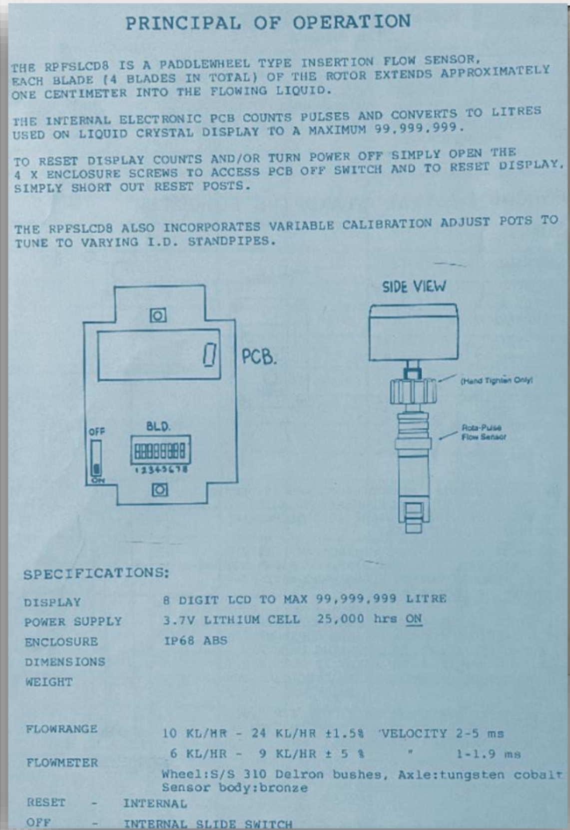
- AUSTRALIAN MADE
- USER PAY BILL SYSTEM
- EASILY ADAPTABLE TO ANY FIELD STANDPIPE SIZE
- CALIBRATED TO AS1379
- TAMPERPROOF IP68 ENCLOSURE
- 8 DIGIT LCD DISPLAY
- INTERNAL LONG LIFE LITHIUM POWER CELL

THE RPFSLCD8 DIGITAL STANDPIPE FLOWMETER USES A PROVEN PRINCIPLE OF FLOW MEASUREMENT WHICH IS USED WORLD WIDE. THE RPFSLCD8 IS DESIGNED AND MANUFACTURED IN AUSTRALIA.

THE RPFSLCD8 HAS ONLY ONE MOVING PART. IT'S LIMITED INTRUSION INTO THE PIPE, COMBINED WITH IT'S FLOW THROUGH DESIGN ALLOWS ACCURATE MEASUREMENT OF LIQUID FLOW.

AS AUSTRALIA IS THE DRIEST CONTINENT WATER HAS BECOME A PRECIOUS COMMODITY. ALL GOVERNMENT & LOCAL AUTHORITIES ARE IMPLEMENTING USER PAY SYSTEMS. THE RPFSLCD8 NOW MAKES IT POSSIBLE TO BILL CONTRACTORS OR WATER USERS PRECISELY FOR WATER USED.

THE RPFSLCD8 IS AVAILABLE AS A COMPLETE SYSTEM INCLUDING STANDPIPE OR IN KIT ADAPTOR FORM TO CONVERT MOST EXISTING STANDPIPES.



PRINCIPAL OF OPERATION

THE RPFSLCD8 IS A PADDLEWHEEL TYPE INSERTION FLOW SENSOR, EACH BLADE (4 BLADES IN TOTAL) OF THE ROTOR EXTENDS APPROXIMATELY ONE CENTIMETER INTO THE FLOWING LIQUID.

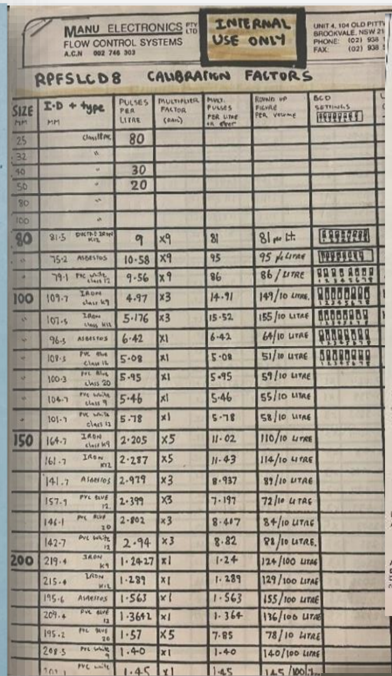
THE INTERNAL ELECTRONIC PCB COUNTS PULSES AND CONVERTS TO LITRES USED ON LIQUID CRYSTAL DISPLAY TO A MAXIMUM 99,999,999.

TO RESET DISPLAY COUNTS AND/OR TURN POWER OFF SIMPLY OPEN THE 4 X ENCLOSURE SCREWS TO ACCESS PCB OFF SWITCH AND TO RESET DISPLAY. SIMPLY SHORT OUT RESET POSTS.

THE RPFSLCD8 ALSO INCORPORATES VARIABLE CALIBRATION ADJUST POTS TO TUNE TO VARYING I.D. STANDPIPES.

SPECIFICATIONS:

DISPLAY	8 DIGIT LCD TO MAX 99,999,999 LITRE
POWER SUPPLY	3.7V LITHIUM CELL 25,000 hrs ON
ENCLOSURE	IP68 ABS
DIMENSIONS	
WEIGHT	
FLOWRANGE	10 KL/HR - 24 KL/HR ±1.5% VELOCITY 2-5 ms 6 KL/HR - 9 KL/HR ± 5 % " 1-1.9 ms
FLOWMETER	Wheel:S/S 310 Delron bushes, Axle:tungsten cobalt Sensor body:bronze
RESET -	INTERNAL
OFF -	INTERNAL SLIDE SWITCH



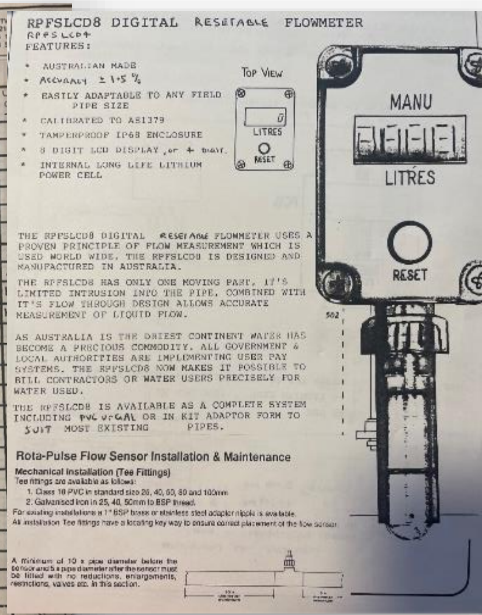
MANU ELECTRONICS PTY LTD
FLOW CONTROL SYSTEMS
A.C.N 002 746 303

INTERNAL USE ONLY

UNIT 4, 104 OLD PITTWATER ROAD BROOKVALE, NSW 21
PHONE: (02) 938 1
FAX: (02) 938 5

RPFSLCD8 CALIBRATION FACTORS

SIZE MM	I.D + type MM	PULSES PER LITRE	MULTIPLIER FACTOR (RAM)	MULT. PULSES PER LITRE or other	ROUND UP FIGURE PER VOLUME	BCD SETTINGS
25	Class 18 PVC	80				
32	"					
40	"	30				
50	"	20				
80	"					
100	"					
80	81.5 Ductile Iron K12	9	x9	81	81 per Lt.	
"	75.2 Asbestos	10.58	X9	95	95 per Litre	
"	79.1 PVC white class 12	9.56	x9	86	86 / Litre	
100	109.7 Iron class K9	4.97	x3	14.91	149/10 Litre.	
"	107.5 Iron class K12	5.176	x3	15.52	155/10 Litre	
"	96.3 Asbestos	6.42	x1	6.42	64/10 Litre	
"	109.3 PVC Blue class 12	5.08	x1	5.08	51/10 Litre	
"	100.3 PVC Blue class 20	5.95	x1	5.95	59/10 Litre	
"	104.7 PVC white class 9	5.46	x1	5.46	55/10 Litre	
"	101.7 PVC white class 12	5.78	x1	5.78	58/10 Litre	
150	164.7 Iron class K9	2.205	x5	11.02	110/10 Litre	
	161.7 Iron K12	2.287	x5	11.43	114/10 Litre	
	141.7 Asbestos	2.979	x3	8.937	89/10 Litre	
	157.9 PVC Blue 12	2.399	x3	7.197	72/10 Litre	
	146.1 PVC Blue 20	2.802	x3	8.407	84/10 Litre	
	142.7 PVC white 12	2.94	x3	8.82	88/10 Litre.	
200	219.4 Iron K9	1.2427	x1	1.24	124/100 Litre	
	215.4 Iron K12	1.289	x1	1.289	129/100 Litre	
	195.6 Asbestos	1.563	x1	1.563	155/100 Litre	
	209.4 PVC Blue 12	1.3642	x1	1.364	136/100 Litre	
	195.2 PVC Blue 20	1.57	x5	7.85	78/10 Litre	
	208.5 PVC white 9	1.40	x1	1.40	140/100 Litre	
	[illegible] PVC white	1.45	x1	1.45	145/100 [illegible]	



RPFSLCD8 DIGITAL RESETABLE FLOWMETER
RPFSLCD4
FEATURES:

- AUSTRALIAN MADE
- ACCURACY ± 1.5 %
- EASILY ADAPTABLE TO ANY FIELD PIPE SIZE
- CALIBRATED TO AS1379
- TAMPERPROOF IP68 ENCLOSURE
- 8 DIGIT LCD DISPLAY, or 4 DIGIT.
- INTERNAL LONG LIFE LITHIUM POWER CELL

THE RPFSLCD8 DIGITAL RESETABLE FLOWMETER USES A PROVEN PRINCIPLE OF FLOW MEASUREMENT WHICH IS USED WORLD WIDE. THE RPFSLCD8 IS DESIGNED AND MANUFACTURED IN AUSTRALIA.

THE RPFSLCD8 HAS ONLY ONE MOVING PART. IT'S LIMITED INTRUSION INTO THE PIPE, COMBINED WITH IT'S FLOW THROUGH DESIGN ALLOWS ACCURATE MEASUREMENT OF LIQUID FLOW.

AS AUSTRALIA IS THE DRIEST CONTINENT WATER HAS BECOME A PRECIOUS COMMODITY. ALL GOVERNMENT & LOCAL AUTHORITIES ARE IMPLEMENTING USER PAY SYSTEMS. THE RPFSLCD8 NOW MAKES IT POSSIBLE TO BILL CONTRACTORS OR WATER USERS PRECISELY FOR WATER USED.

THE RPFSLCD8 IS AVAILABLE AS A COMPLETE SYSTEM INCLUDING PVC or GAL OR IN KIT ADAPTOR FORM TO SUIT MOST EXISTING PIPES.

Rota-Pulse Flow Sensor Installation & Maintenance

Mechanical Installation (Tee Fittings)
Tee fittings are available as follows:
1. Class 18 PVC in standard size 25, 40, 50, 80 and 100mm
2. Galvanised Iron in 25, 40, 50mm to BSP thread.

For existing installations a 1" BSP boss or stainless steel adaptor nipple is available.
All installation Tee fittings have a locating key way to ensure correct placement of the flow sensor.

A minimum of 10 x pipe diameter before the sensor and 5 x pipe diameter after the sensor must be fitted with no reductions, enlargements, restrictions, valves etc. in this section.

MANU ELECTRONICS
FLOW CONTROL SYSTEMS
A.C.N 002 746 303

UNIT 4, 104 OLD PITTWATER ROAD
BROOKVALE NSW 2100 AUSTRALIA
PHONE: (020 938 1425
FAX: (02) 938 5852

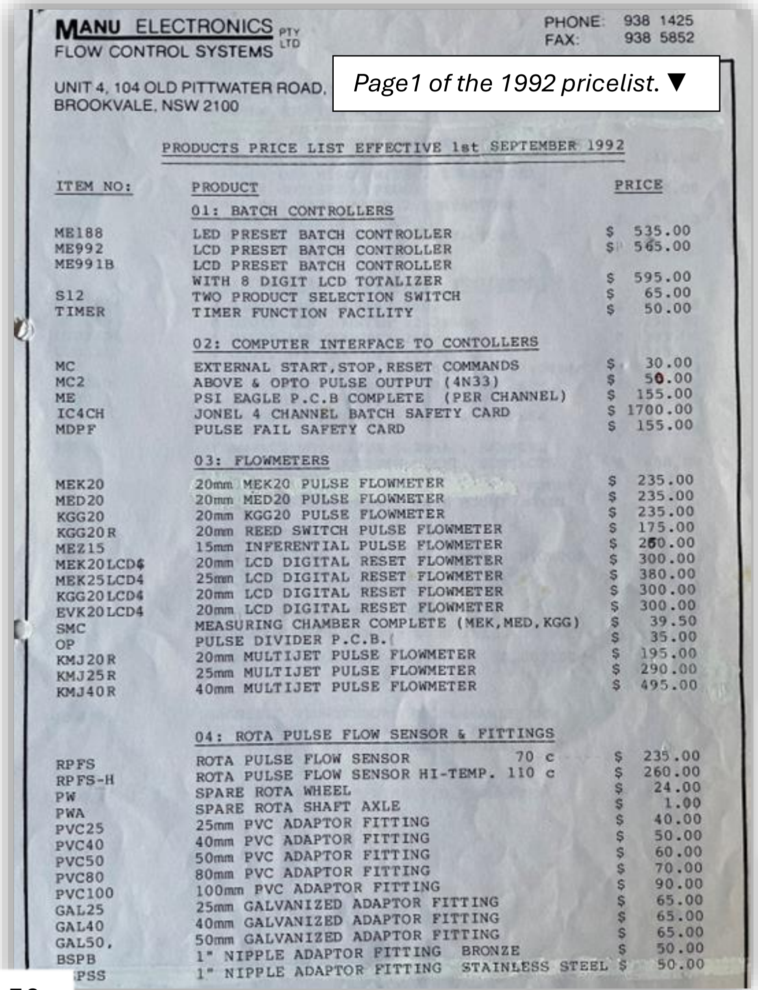
CSIRO

The RPFS pipe adaptor range ▼

1994 – Expanding Networks and Strategic Pricing

As the business continued to progress, the growth of its endorsed network of installers, resellers, and agent companies had created the need for a newly structured pricelist system. This revised structure introduces tiered discount incentives, aimed at further encouraging product adoption and expanding market reach.

A special mention goes to Andrew Lowcock, Trevor Campbell and others, whose respective companies were poised to become the leading contracted installers and servicing agents for Manu Electronics equipment systems across Australia. Their involvement marked a significant step forward in enhancing on-ground support and national servicing capabilities for the water measurement applications.



MANU ELECTRONICS PTY LTD
FLOW CONTROL SYSTEMS

PHONE: 938 1425
FAX: 938 5852

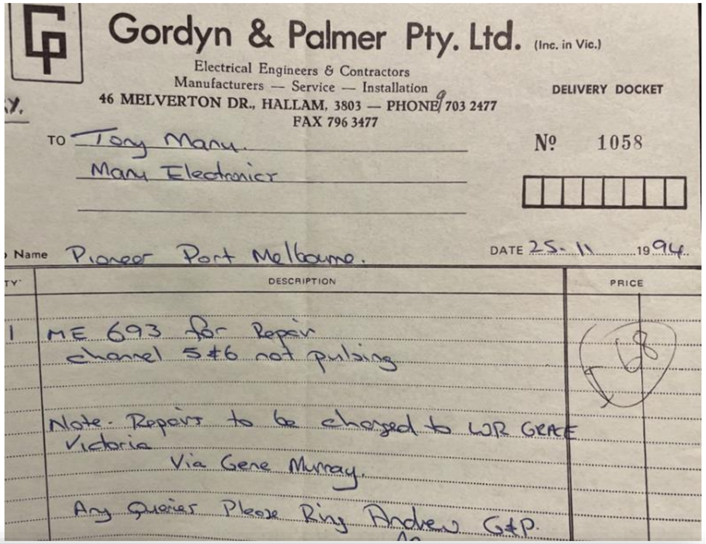
UNIT 4, 104 OLD PITTWATER ROAD,
BROOKVALE, NSW 2100

PRODUCTS PRICE LIST EFFECTIVE 1st SEPTEMBER 1992

ITEM NO:	PRODUCT	PRICE
	01: BATCH CONTROLLERS	
ME188	LED PRESET BATCH CONTROLLER	$ 535.00
ME992	LCD PRESET BATCH CONTROLLER	$ 565.00
ME991B	LCD PRESET BATCH CONTROLLER WITH 8 DIGIT LCD TOTALIZER	$ 595.00
S12	TWO PRODUCT SELECTION SWITCH	$ 65.00
TIMER	TIMER FUNCTION FACILITY	$ 50.00
	02: COMPUTER INTERFACE TO CONTOLLERS	
MC	EXTERNAL START, STOP, RESET COMMANDS	$ 30.00
MC2	ABOVE & OPTO PULSE OUTPUT (4N33)	$ 50.00
ME	PSI EAGLE P.C.B COMPLETE (PER CHANNEL)	$ 155.00
IC4CH	JONEL 4 CHANNEL BATCH SAFETY CARD	$ 1700.00
MDPF	PULSE FAIL SAFETY CARD	$ 155.00
	03: FLOWMETERS	
MEK20	20mm MEK20 PULSE FLOWMETER	$ 235.00
MED20	20mm MED20 PULSE FLOWMETER	$ 235.00
KGG20	20mm KGG20 PULSE FLOWMETER	$ 235.00
KGG20R	20mm REED SWITCH PULSE FLOWMETER	$ 175.00
MEZ15	15mm INFERENTIAL PULSE FLOWMETER	$ 250.00
MEK20LCD4	20mm LCD DIGITAL RESET FLOWMETER	$ 300.00
MEK25LCD4	25mm LCD DIGITAL RESET FLOWMETER	$ 380.00
KGG20LCD4	20mm LCD DIGITAL RESET FLOWMETER	$ 300.00
EVK20LCD4	20mm LCD DIGITAL RESET FLOWMETER	$ 300.00
SMC	MEASURING CHAMBER COMPLETE (MEK, MED, KGG)	$ 39.50
OP	PULSE DIVIDER P.C.B.	$ 35.00
KMJ20R	20mm MULTIJET PULSE FLOWMETER	$ 195.00
KMJ25R	25mm MULTIJET PULSE FLOWMETER	$ 290.00
KMJ40R	40mm MULTIJET PULSE FLOWMETER	$ 495.00
	04: ROTA PULSE FLOW SENSOR & FITTINGS	
RPFS	ROTA PULSE FLOW SENSOR 70 c	$ 235.00
RPFS-H	ROTA PULSE FLOW SENSOR HI-TEMP. 110 c	$ 260.00
PW	SPARE ROTA WHEEL	$ 24.00
PWA	SPARE ROTA SHAFT AXLE	$ 1.00
PVC25	25mm PVC ADAPTOR FITTING	$ 40.00
PVC40	40mm PVC ADAPTOR FITTING	$ 50.00
PVC50	50mm PVC ADAPTOR FITTING	$ 60.00
PVC80	80mm PVC ADAPTOR FITTING	$ 70.00
PVC100	100mm PVC ADAPTOR FITTING	$ 90.00
GAL25	25mm GALVANIZED ADAPTOR FITTING	$ 65.00
GAL40	40mm GALVANIZED ADAPTOR FITTING	$ 65.00
GAL50	50mm GALVANIZED ADAPTOR FITTING	$ 65.00
BSPB	1" NIPPLE ADAPTOR FITTING BRONZE	$ 50.00
[illegible]PSS	1" NIPPLE ADAPTOR FITTING STAINLESS STEEL	$ 50.00

Page1 of the 1992 pricelist. ▼

PRECEPT SERVICES P/LTD.
0418373180
03 93261296
03 93262796 FAX
PURCHASE ORDER
DATE 27/9/94
To Manu Electronics (FAX) 02 99385852 ATT STEPHAN.
Deliver To 15 Fletcher street Essendon 3040
Customer Reference
Date Required By ASAP
Quantity | Description
1 | LWIC Card for hot Water to Eagle.
1 | LWIC Card for [illegible]



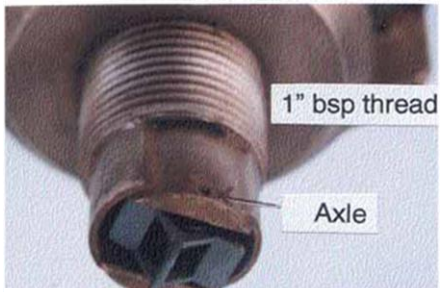
Gordyn & Palmer Pty. Ltd. (Inc. in Vic.)
Electrical Engineers & Contractors
Manufacturers — Service — Installation
46 MELVERTON DR., HALLAM, 3803 — PHONE 703 2477
FAX 796 3477
DELIVERY DOCKET
№ 1058
TO Tony Manu
Manu Electronics
Name Pioneer Port Melbourne. DATE 25-11 1994
DESCRIPTION | PRICE
1 ME 693 for Repair channel 5 & 6 not pulsing
Note - Repairs to be charged to LWR GEAR Victoria Via Gene Murray.
Any Queries Please Ring Andrew G&P.

Orders from Andrew Lowcock ▲ ▶

Proud Grandparents Tony & Lena with Hannah & Laura at the factory 1994. ▶

1994 - Introduction of MRP Integral LCD Resettable Flowmeters and Remote Counter Display Options

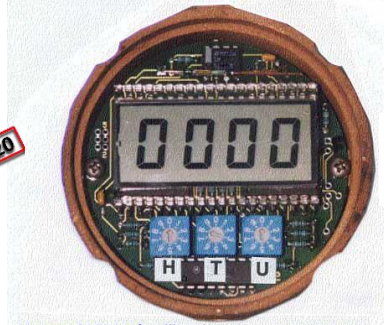
In 1994 Manu designs and introduces the **MRP** series of screwed insertion LCD resettable paddlewheel flowmeters. The **MRP20** 20mm LCD reset meter was specifically designed for mobile concrete truck mixers. The **MRPU4** series is introduced to accommodate pipe diameter sizes from 25 to 50mm with a range of **PVC** and **GAL** galvanised pipe fittings.
Over the next three decades nearly every Concrete Batch Plant in Australia and New Zealand will have a **MRP20** on its fleet of Mobile Concrete Transit Mixer Trucks and **MRPU4** reset meters installed on their Slump-Stands. They also gain popularity in overseas markets.
During this time, the **MRP** series underwent continuous improvements, incorporating the latest advancements in electronic and mechanical components.
The **MET4** & **MET8** remote counter resettable bat.pwr IP65 modules are introduced for connection to various flowmeters for remote aps.



MRP screwed insertion design. ▲

*Tony's handmade **MRP** assembly jigs and earlier models.*

*Mobile mixer truck with **MRP20** fitted.* ▲



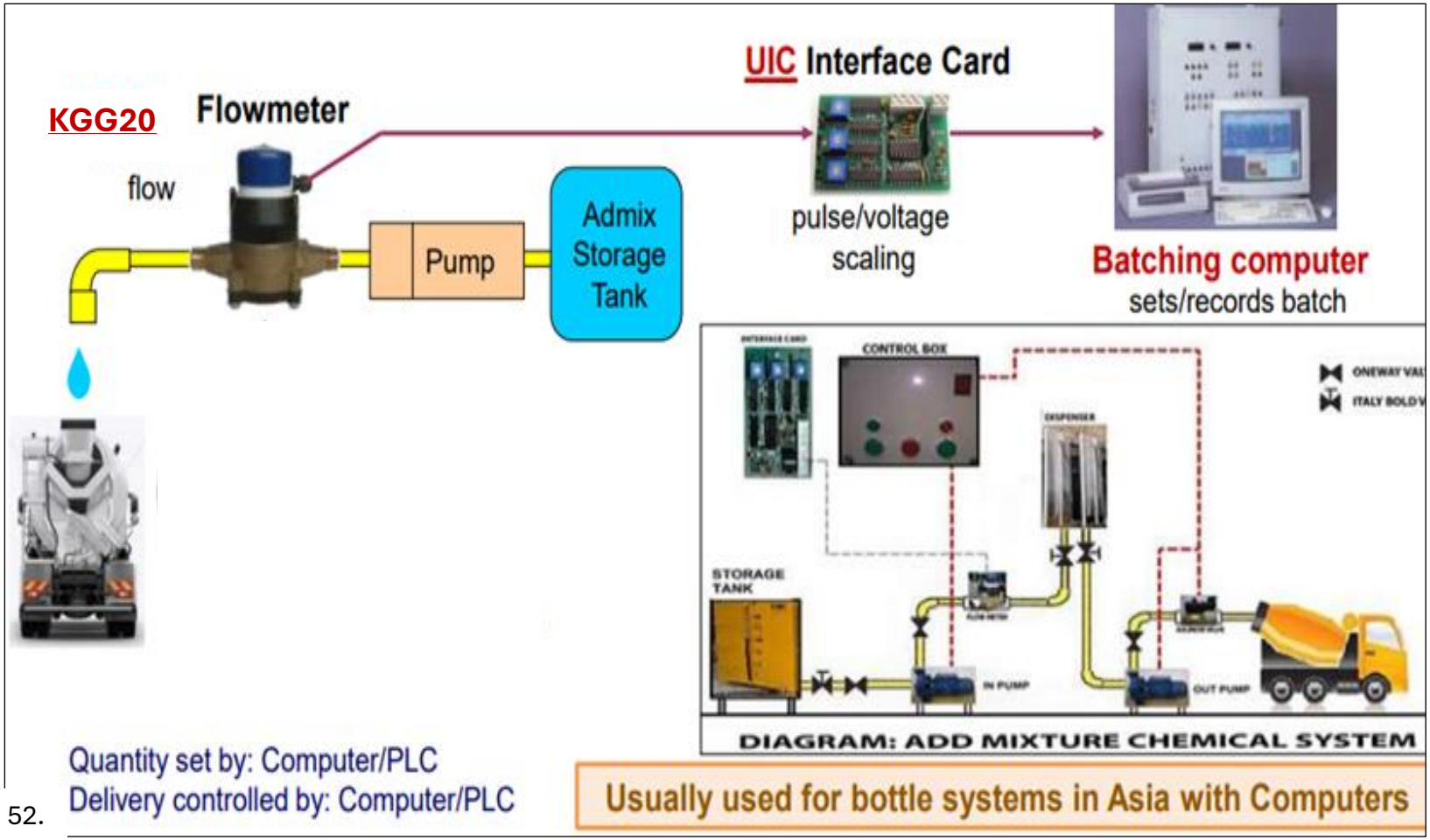
Internal view of calibration decade switches

MRPU4-GAL50 50mm ▶

1994 – Manu enters the Malaysian market with the UIC/A2 interface card, challenging its American adversaries.

Manu's equipment continued to gain traction across various Asian countries, attracting the attention of international admixture company W.R. Grace Malaysia. The company had been utilizing USA based flowmeters, which featured antiquated geared pulses scaled within the head of the meter and low-resolution 240VAC pulses directly connected to PLCs, accompanied by sight bottle canisters.

Manu offered the superior **KGG20** 1p./1ml low-voltage 12VDC high-resolution pulse flowmeters, paired with the specially designed **UIC/A2** divider interface card. This innovative card enabled safer DC pulse transmission in the field, converting AC pulses within the batch-room cabinet. It also allowed pulse scaling to be performed conveniently in the batch-room, offering adjustable configurations for 10, 20, 50, or 100 pulses per litre.



Opto22 AC input (max.15Hz)

***UIC/A2** card*

1995 – Chariots of Gold – ME995 Batch Controllers and ME5IC Interface Cards

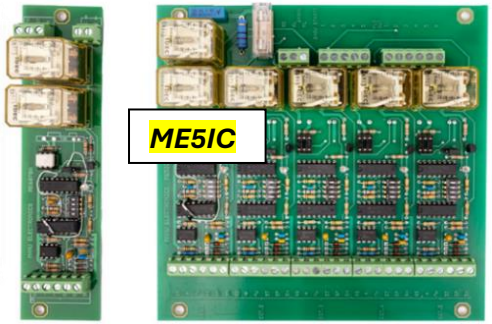
To meet the growing demand for Manu batch controllers, the necessity of improving manufacturing capabilities for larger-scale production became clear. In response, Alex and Tony designed and introduced the **ME995** Rotary Selector Dial Preset Batch Controller model series, achieving remarkable success. This design embraced the latest advancements in manufacturing technology and electronics, incorporating injection-moulded case housings and custom ABS facias. It replaced the highly successful **ME182A/188** aluminium case/facia units, originally introduced in 1982, of which approximately 10,000 units were produced. The interchangeability between the models made the upgrade to the **ME995** a strategically successful decision.

To date, the **ME995** boasts an impressive 30-year product life, with over 13,000 units manufactured—a testament to its innovative design and widespread acceptance. These controllers are still in operation across Concrete Batch Plants and general liquid process applications in regions such as Australia, New Zealand, the South Pacific, Southeast Asia, the Middle East and South America.

ME995-7D

ME995-3KH

ME995-2

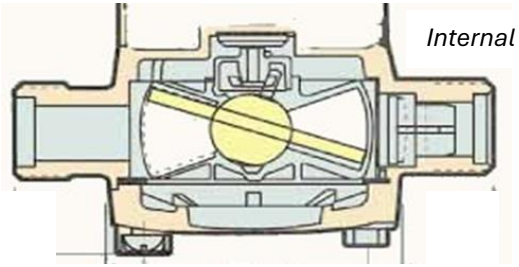


1995 - The revolutionary MES (Sizes 20-40mm) PD nutating disc admixture flowmeters

Introduced in 1995, the **MES** range of **pulse output** and **LCD resettable** flowmeters revolutionized the measurement of liquid admixtures. Most units are still operational today, with over 50,000 flowmeters having been manufactured and in use worldwide.

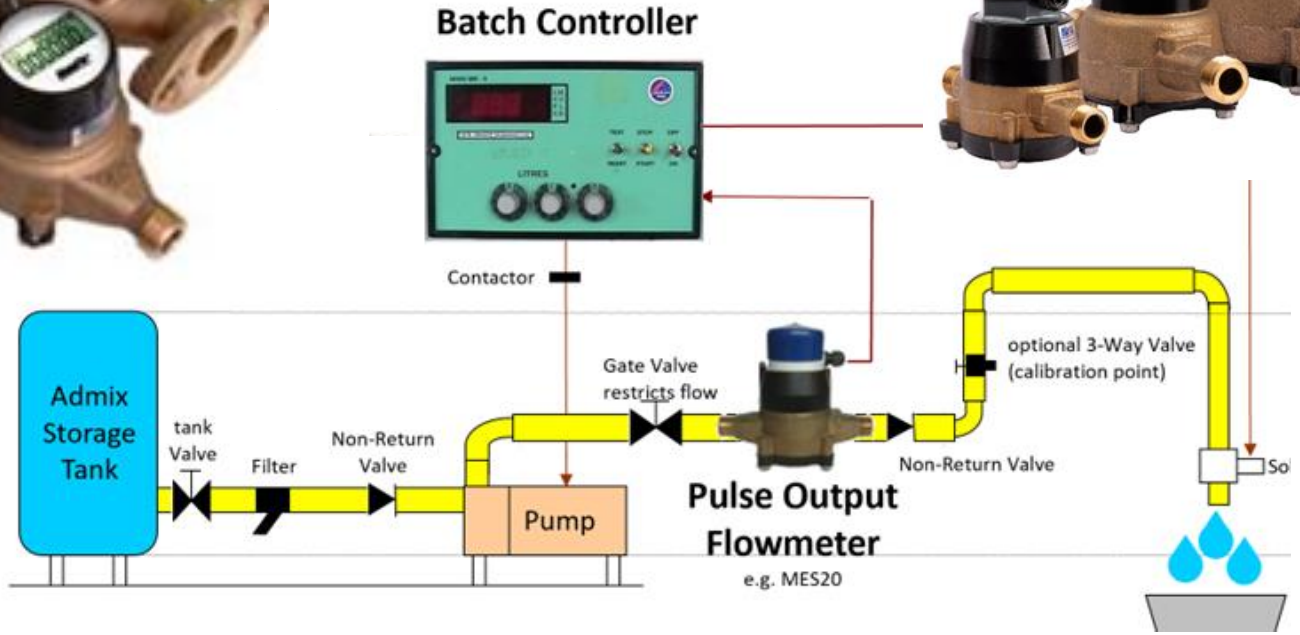
Unlike the previous **MEK** rotary piston type meters, the nutating disc flow chamber can pass small impurities without jamming, whilst maintaining exceptional accuracy with only minimal head-losses. Measurement of concrete admixtures and water-based chemicals with varying specific gravities up to 1.4 was now achieved with higher flowrate capacities.
The Pulsehead or Resettable LCD head units are coupled to the meter body with a bayonet lock and turn fitting —eliminating the need for screws as seen in earlier models. Overtime the units are continuously upgraded with the latest cutting-edge technologies. They are still being manufactured in sizes from 20, 25, 32 & 40mm. The offering was later expanded to include a 50mm size model.

MESLCD range



*Internal **MES** chamber*

MES-P range



Microsoft Windows95

Release of Windows.95 further enhances the business capabilities.

1995 – Visit to Hong Kong secures mainland China market opportunities.

Alex embarked on a mission to Hong Kong to promote Manu product solutions and expand the company's presence in the HK/Guangzhou region. During his visit, he engaged with major chemical admixture manufacturers, including MBT, Sika, W.R. Grace and agent Planters Co.

In a pivotal meeting with Mr. KW-Chan from W.R. Grace, Mr Chan inquired whether Manu Electronics could meet the demands of the emerging mainland Chinese market. Alex emphasized the company's successful sales in the USA market, showcasing its capabilities and reliability. This discussion led to a breakthrough—securing substantial orders for mainland China through the Minhang-Shanghai special economic development zone. The **ME188-3G** Batch Controller with interface was then developed as a custom model for the China market.

GRACE

GRACE CHINA LTD.
30 Hong He Road, Shanghai Minhang Economic and Technological (Development) Zone, Shanghai China
Tel: 0086-21-4300950 Fax: 0086-21-4300425

Purchase Order No. CH/95/143 Date: 95-12-19

To:	Shipping Mark:	Our Ref. No.
Manu Electronic Ltd. Attn: Mr. Alex Manu	EOA CH/95/143 UWA	CH/95/143
	Final Destination: Shanghai	
Bill to: Grace China Ltd. 30 Hong He Road, Minghang Eco. & Tec. (Dev.) Zone, Shanghai 200240 China Attn: Tracy Yuan Tel: 0086-21-64300950 Fax: 0086-21-64300425	Documents Required: Commercial Invoice X Original B/L X Copy B/L X Specification X Packing List X Air Way Bill	
Deliver to: ==== same as above ====		
Terms: T/T	Marine Insurance Policy to be Arranged by:	
Shipment Date: ASAP Shipment by: DHL		

Quantity		Description	Price Unit	Total
20	pcs	ME188-3G Controller	AUD	670.00 /pcs
20	pcs	MES20 Flowmeter	AUD	285.00 /pcs
Total: 40	pcs	(Packed in one Box)	Total: AUD	19,100.00

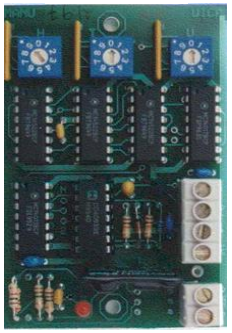
Please accept this fax as firm order
No official purchase order will be posted

GRACE CHINA LTD.
Authorized Signatuure

***MES20** 1st edition.*

AUSTRALIAN MADE

UIC/A1



GRACE CHINA LTD.
30 Honghe Road,
Shanghai Minhang Economic and Technological (Dev.) Zone,
Shanghai 200245, China
Tel: 0086-21-64300950 Fax: 0086-21-64300425

GRACE

PURCHASE ORDER

ORDER NO.: CH96/C228
DATE: 24-Dec-96

TO	BILL TO
Manu Electronic (Australia) Ltd.	GRACE CHINA LTD.
CONTACT NAME: Mr. Alex Manu	30 Honghe Road,
TEL:	Minhang Economic & Technology (Dev.) Zone
FAX: 0061 29 9385852	Shanghai 200245, China
SHIP TO: GRACE CHINA LTD.	Contact Name: Tom Wu
30 Honghe Road,	DOCUMENT REQUIRED:
Minhang Economic & Technology (Dev.) Zone	Commercial Invoice ◉
Shanghai 200245, China	Packing List ◉
	Shipping Advice ◉
	Bill of Lading ◉
	Analysis Report ○

TERM	PACKAGE	REQUIRED DATE	SHIPPED BY
T/T			BY UPS

QUANTITY	DESCRIPTION	UNIT PRICE	AMOUNT
6sets	MES40 40mm Flow meter	CIF Shanghai AUD861.67	AUD5,170.-
10sets	UIC/A Universal interface card	AUD155.-	AUD1,550.-
		TOTAL	AUD6,720.-

Please accept this fax as firm ord
No official Purchase Order will be posted

GRACE CHINA LTD.

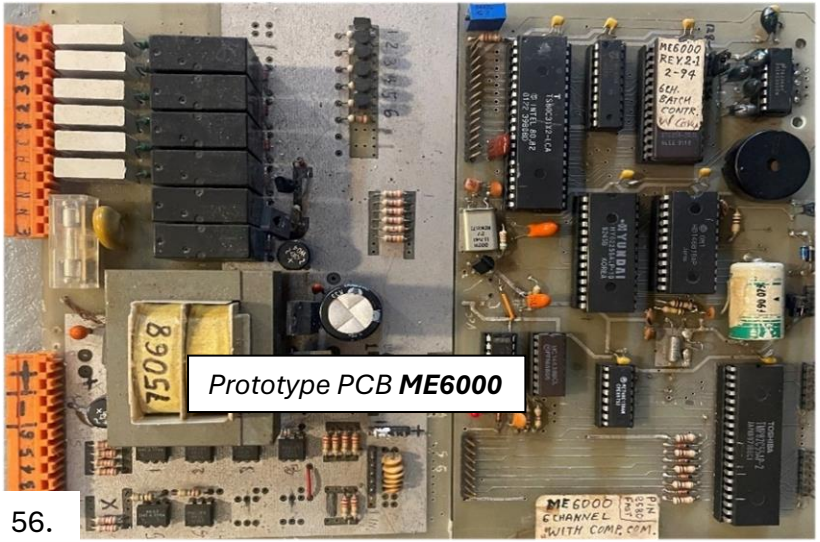
1996 – Manu's Microprocessor age begins with the introduction of the ME6000

In 1996, the company embraced new microprocessor technology, commissioning Mario Galea to design the **ME6000**—a six-channel keypad Batch Controller and monitor featuring time stamped event record logging and serial printer output. Ahead of its time, the **ME6000** faced market resistance as customers favoured the simplicity of the **ME188/995** rotary dial batch controllers.

The **MEA15** 15mm low flowrate flowmeter was also introduced to cater for very low volume precision batch measurement applications.

Touch Phone

Product range offering early 1995



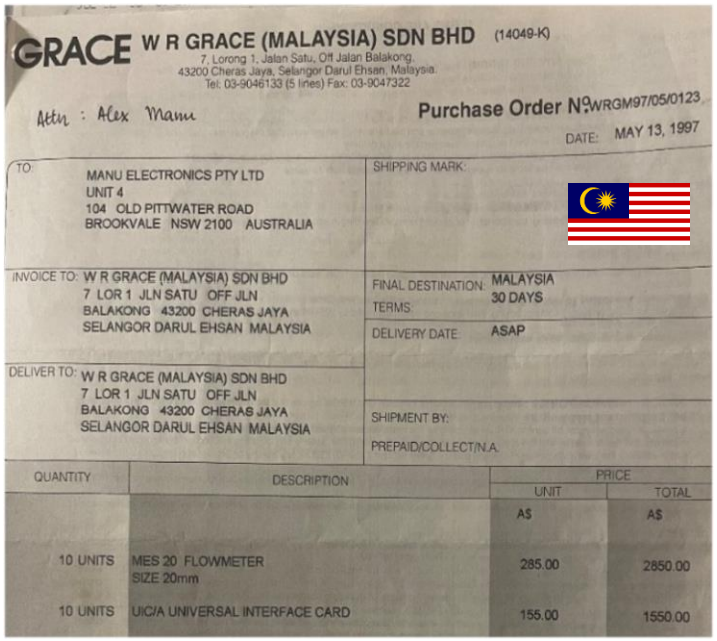
*Prototype PCB **ME6000***

*The **MEA15** low volume low flow 1000ppl pulse meter*

The Manu Team

1996 to 1997 – Growing Export Markets

Manu products had become synonymous with being the leading application solution providers for liquid admixture construction chemical measurement across the rapidly growing South-East Asian markets. A milestone was achieved with a significant order for Batch Controllers and Flowmeters destined for the Fosroc chemical production plant in Egypt, Africa—thanks to the commendable efforts of Steve Dyball. The Manu workshop utilized the latest tools and test equipment in the design, repair & manufacture processes.



GRACE W R GRACE (MALAYSIA) SDN BHD (14049-K)
7, Lorong 1, Jalan Satu, Off Jalan Balakong,
43200 Cheras Jaya, Selangor Darul Ehsan, Malaysia.
Tel: 03-9046133 (5 lines) Fax: 03-9047322

Attn : Alex Manu

Purchase Order No: WRGM97/05/0123

DATE: MAY 13, 1997

TO: MANU ELECTRONICS PTY LTD
UNIT 4
104 OLD PITTWATER ROAD
BROOKVALE NSW 2100 AUSTRALIA

SHIPPING MARK:

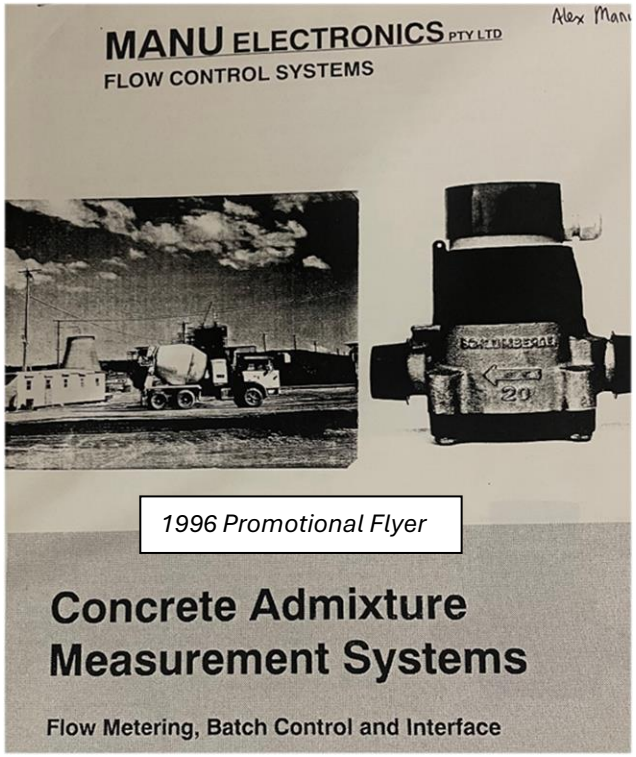
INVOICE TO: W R GRACE (MALAYSIA) SDN BHD
7 LOR 1 JLN SATU OFF JLN
BALAKONG 43200 CHERAS JAYA
SELANGOR DARUL EHSAN MALAYSIA

FINAL DESTINATION: MALAYSIA
TERMS: 30 DAYS
DELIVERY DATE: ASAP

DELIVER TO: W R GRACE (MALAYSIA) SDN BHD
7 LOR 1 JLN SATU OFF JLN
BALAKONG 43200 CHERAS JAYA
SELANGOR DARUL EHSAN MALAYSIA

SHIPMENT BY:
PREPAID/COLLECT/N.A.

QUANTITY	DESCRIPTION	PRICE UNIT	PRICE TOTAL
		A$	A$
10 UNITS	MES 20 FLOWMETER SIZE 20mm	285.00	2850.00
10 UNITS	UIC/A UNIVERSAL INTERFACE CARD	155.00	1550.00



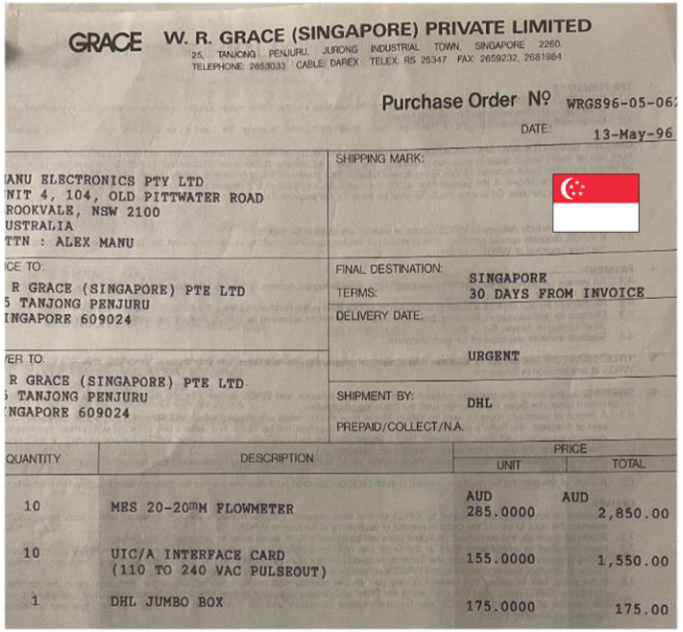
MANU ELECTRONICS PTY LTD
FLOW CONTROL SYSTEMS

Alex Manu

1996 Promotional Flyer

Concrete Admixture Measurement Systems

Flow Metering, Batch Control and Interface



GRACE W. R. GRACE (SINGAPORE) PRIVATE LIMITED
25, TANJONG PENJURU, JURONG INDUSTRIAL TOWN, SINGAPORE 2260.
TELEPHONE: 2653033 CABLE: DAREX TELEX: RS 25347 FAX: 2659232, 2681984

Purchase Order No WRGS96-05-06

DATE: 13-May-96

ANU ELECTRONICS PTY LTD
NIT 4, 104, OLD PITTWATER ROAD
ROOKVALE, NSW 2100
USTRALIA
TTN : ALEX MANU

CE TO:
R GRACE (SINGAPORE) PTE LTD
5 TANJONG PENJURU
INGAPORE 609024

ER TO:
R GRACE (SINGAPORE) PTE LTD
5 TANJONG PENJURU
INGAPORE 609024

SHIPPING MARK:

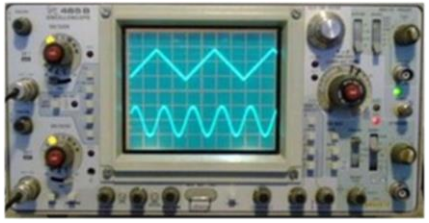
FINAL DESTINATION: SINGAPORE
TERMS: 30 DAYS FROM INVOICE
DELIVERY DATE:
URGENT
SHIPMENT BY: DHL
PREPAID/COLLECT/N.A.

QUANTITY	DESCRIPTION	PRICE UNIT	PRICE TOTAL
10	MES 20-200M FLOWMETER	AUD 285.0000	AUD 2,850.00
10	UIC/A INTERFACE CARD (110 TO 240 VAC PULSEOUT)	155.0000	1,550.00
1	DHL JUMBO BOX	175.0000	175.00

MANU ELECTRONICS PTY LTD
FLOW CONTROL SYSTEMS ACN 002 946 303
FOSROC S.A.E

72 Mosadek street
Dokki Cairo
A.R. Egypt

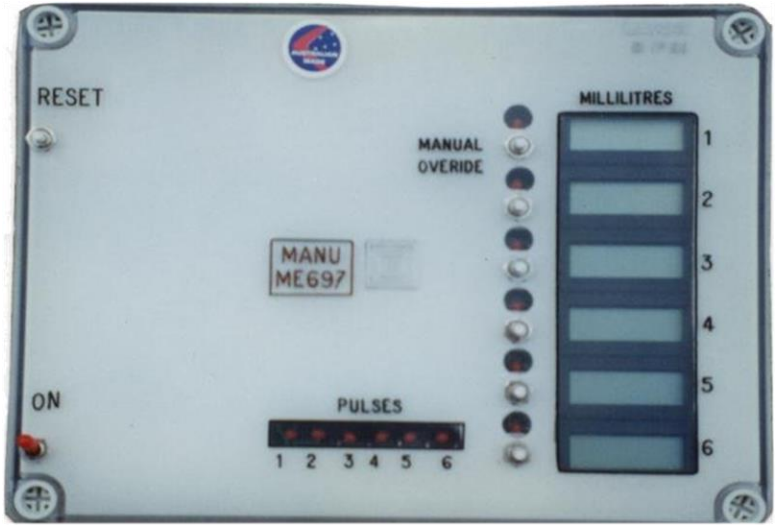
USER MANUAL



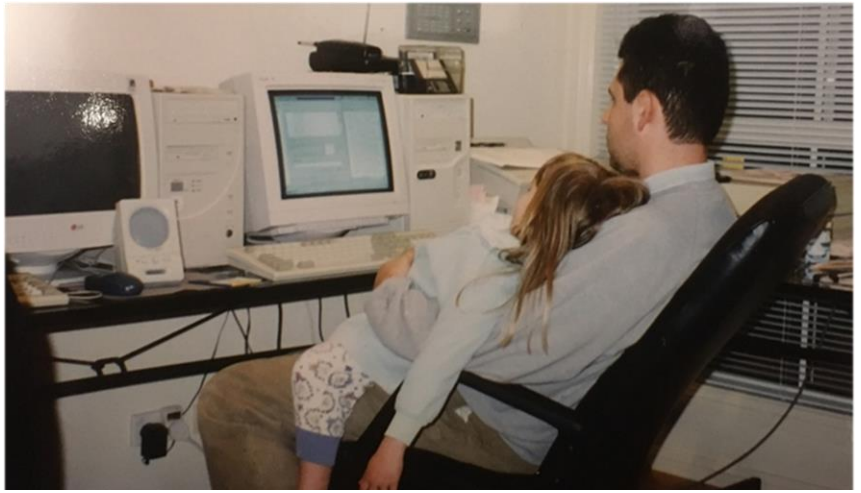
The cathode ray Oscilloscope, Multi-meters and Soldering stations were essential equipment items.

1997 – The ME697 multi-channel interface safety batch card

Following reported overdose incidents at some concrete batch plants utilizing PLC/Computer systems, companies recognized the software lacked sufficient real-time watchdog safety features when receiving the flowmeter signals. In response to industry requests, Manu Electronics developed the six-channel **ME697** Batch Counter Pulse Divider Interface Safety Card. This innovation incorporated all the batch safety mechanisms of the trusted **ME995** controllers, ensuring a higher standard of operational safety. The **ME697** was widely adopted, being installed in the majority of computer-controlled batch plants across Australia, New Zealand, Hong Kong and North China. Despite navigating the challenges posed by the Asian financial crisis, the company successfully expanded, further solidifying its position in the market.

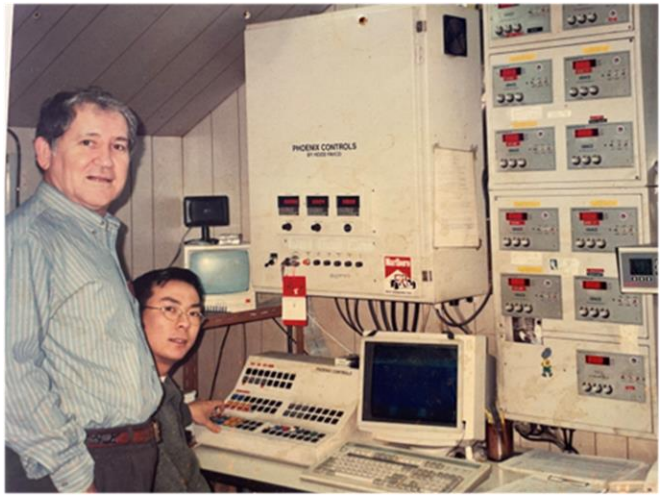


The 1997 Asian financial crisis dealt a heavy blow, leaving Indonesian clients unable to meet their payment obligations to Manu



Alex at the Chatswood home office working late nights with daughter Laura. ▲

Doug Rea (Sunstate Engineering), Tony Manu with Kerry Carr (Grace) meeting for the coming Chinese mainland Concrete Batch Plant builds with Manu dispensing equipment. ◄



*Tony inspects **ME188-5P** Batch Controllers interfaced with Phoenix Computer system at a Concrete Batch plant in Hong Kong 1997.* ►

1998 – The company secures prestige orders in North-East China

In 1998, Tony Manu traveled to Northern China to support the CSR-Readymix and W.R. Grace venture, which succeeded by utilizing Manu dispensing equipment as an alternative to American bottle dispenser systems. Grace China Ltd placed an order for **ME697** interface cards paired with **MES20** flowmeters, enabling efficient admixture dispensing at CSR concrete batch plants across the Northern Chinese cities of Tianjin, Langfang, Tangshan, Tungu and Chengde.

MANU ELECTRONICS PTY LTD
4/104 OLD PITTWATER ROAD
BROOKVALE SYDNEY NSW 2100
AUSTRALIA ACN:002946303

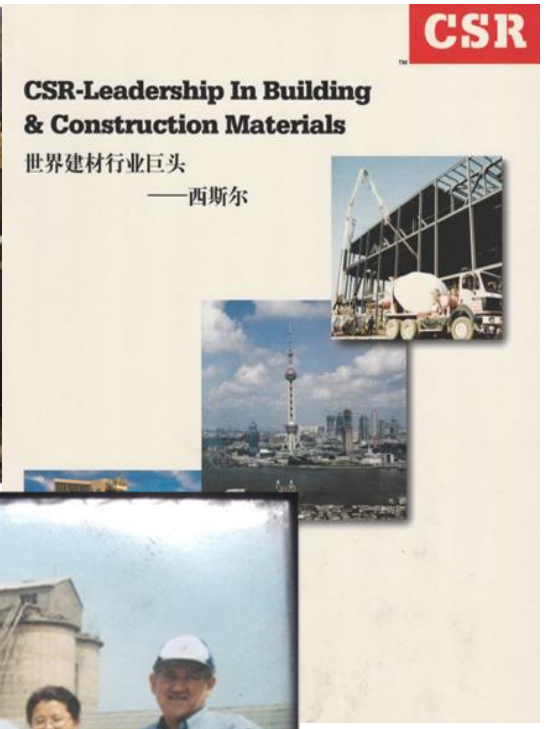
GRACE CHINA LTD
30 HONGHE RD SHANGHAI
MINHANG ECO.& TECH.ZONE
SHANGHAI 200245 CHINA

GRACE CHINA LTD
30 HONGHE RD SHANGHAI
MINHANG ECO.& TECH.ZONE
SHANGHAI 200245 CHINA

CUSTOMER NO. 0213 INVOICE NO. 10179

DATE	PURCHASE ORDER NO.	SALES PERSON	TERMS
09/09/98	TBA	T.MANU	STRICTLY NET 30 DAYS

QUANTITY	ITEM NUMBER	DESCRIPTION	UNIT PRICE	EXTENDED PRICE
5	ME697	6 CHANNEL PULSE COUNTER DIVIDER SAFETY INTERFACE	1795.00	8975.00
1	7001P	LCD RESET TEST COUNTER (BY KERRY CARR 6/7/98 DD#89824)	105.00	105.00
1	7001Q	SPECIAL ME697 TESTER UNIT (LEFT WITH ROBIN YI BY T.MANU 12/8/98)	125.00	125.00
1	AT	AIR TICKET SYD-BEIJ-SYD	950.00	950.00
		FOLLOWING ITEMS BY DHL AWB#1634829700 9/9/98:- 12/9/98 Co.Shmt		
1	ME697	6 CHANNEL PULSE COUNTER DIVIDER SAFETY CARD	1795.00	1795.00
2	MES20	20MM NEW PULSEOUT METER SPECIAL CLUTCH TYPE	285.00	570.00
		EXTENDED PRICE TOTAL		12520.00
		+ SHIPPING & INSURANCE		125.00
		INVOICE TOTAL		12645.00



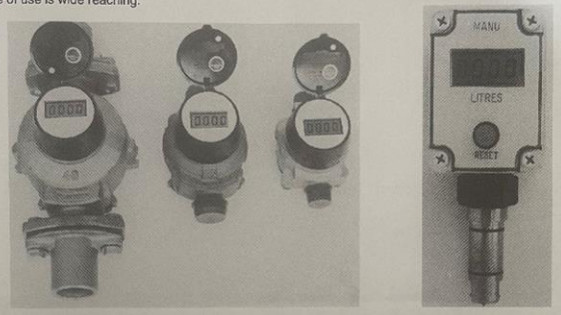
◄ *Tianjin: Kerry Carr and four Chinese reps with Tony Manu.*

1998 – The first professionally printed Newsletter

The first printed newsletter was both mailed and emailed to clients worldwide, covering a wide range of topics. These included new products, company milestones, technical insights, announcements of new sales markets, and application news.

Portable digital LCD resetable flowmeters

Available in two types, MESLCD4 series nutating disc positive displacement or RPFSLCD paddlewheel type flowmeters. Both types are internal battery powered, lasting upto 10 years and IP65 rating for outdoor use. Between the two types; available for very low to high flowranges, from pipe sizes 20mm to 2000mm. Suitable for a wide range of liquids, they are ideal in situations where no power supply is accessible.
For example the 20mm MES nutating disc type used for measurement of water in bakeries, superplasterizer in shotcrete applications, concrete agitators. The 25mm or 40mm of either model used slumpstands in concrete mixing plants. The 100mm paddlewheel type for irrigation measurement. The range of use is wide reaching.



New market in Middle East

Last year equipment was supplied including preset batch controllers, positive displacement, paddlewheel and electromagnetic flowmeters for Fosroc's admixture manufacturing plant in Egypt. This was to automate their prior equipment of mechanical totalising oval meters. Many thanks to Mr Steve Dyball for his confidence in our products.

MES40 used at Hong Kong new airport site

Back in 1996 MES40 40mm pulse flowmeters were installed at the Hong Kong airport construction site, to date they are used around the clock for measurement of admixture added to the concrete mixes.

Australia's livestock healthier

Farmers in remote outback areas biggest concern is lack of rain and suitable vegetation to feed livestock. To help overcome the problem, back in early 1997, our design engineer was flown to Alice Springs to meet with officials from the Department of Primary Industries of NT and local farmers with large cattle stations in remote areas.After assessing the situation, we designed a system comprising dosing controller, flowmeter and pump, all solar powered. The system is used to control and monitor a nutrient solution which is dosed into the livestock's drinking water troughs. This nutrient not only boosts health of the livestock but allows them to digest tumbleweed.
The systems are available from Peart Rural Services P/L and Wesfarmers Ltd.
Already some systems have been exported, and international farmers have highly commended the simplicity and reliability of the system.

◄ ***ME995*** *mounted in IP65* ***HB2500*** *waterproof enclosure.*

NEWSLETTER

MANU ELECTRONICS PTY LTD
Flow Control Systems
ACN 002 946 303

Issue 2, February 1998

Meet the Manu Electronics Team.

As most of our clients deal with us over the telephone, we thought that this would help you put a face to the names.

From left to right: Felix Palabino, Jess Baylon, Alex Manu, Lena Manu, Tony Manu, Hannele "Annie" Manu and Stefan Grange. (Joe Hajdu not pictured).

Inside This Issue

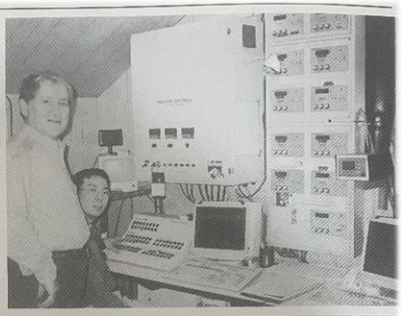
Manu Electonics new internet website.

We launched our own homepage website this month. Although experimental, it was time to join the growing group of companies found on the world wide web.

Our home page is - http://www.ozemail.com.au/~**manu**/index.html
Email us at - manu@ozemail.com.au

"Tony's" goodwill visit to Hong Kong & China

Back in February last year our managing director Tony Manu visited Hong Kong and Chinese concrete production plants to see first hand our batch controllers and flowmeters operating and interfaced to industrial computers located in the worlds busiest construction sites. Tony also helped troubleshoot and solve an application problem at CSR Readymix's Tianjin concrete plants.

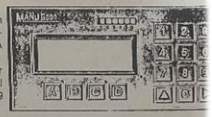


Milestone - two thousandth preset water system

Last month the two thousandth preset automatic batch controller system coupled specifically with the Rota pulse (paddlewheel) flow sensor was sold for measurement of plant water in a concrete plant. The latest preset controller, the ME995-7, with significant improvements since the first ME182-7 model introduced in 1982, retains the user friendly switch operation format and easy plug-in connector. The easy operational format and economical price of the system has been the main reason for its continued success. Today the controller/paddlewheel system is used in many varied liquid process control operations, where simplicity of operation is a primary concern. Overall since the inception of Manu preset batch controllers, there are now over 10,000 units in operation with various flowmeters.

ME6000M batch monitor provides auto batch printouts

This batch monitor was designed in 1993 but never promoted. It is ideal in concrete plants where conventional Manu batch controllers are used (non-computerized plants) requiring a batch printout report to satisfy QA requirements.
Upto six Manu controllers and or flowmeters can be monitored and logged for admixtures and water. The batch print is generated automatically, with real time report and total memories. Communication to printers is via a serial DB9 RS232 port, e.g. Epson LX300 printer.



Technical note - relays

It should be noted that only industrial grade contactors should be used when driving pumps. In some cases cheaper plug-in relays have been used and the current draw on many pumps is high enough to temporarily latch or permanently fuse the relays onstate. In this case, although the Manu controllers' 240vac drive contact drops off at batch target, the pump stays on due to the defective relay. Industrial grade contactors are available from Manu Electronics, contact us for very competitive prices.

If you require any further information or have questions or comments, please contact us on the numbers below or email:

MANU ELECTRONICS PTY LTD
Flow Control Systems
U4/104 Old Pittwater Road
Brookvale Sydney NSW Australia
Ph: +61 2 99381425 or 99054324
Fax: +61 2 99385852
Email: manu@ozemail.com.au

A young Phillip Manu joins the operation in 1998. ►

1999 – Securing New Export Countries – Philippines, Vietnam and Thailand

Alex met with representatives from Master Builders Technologies (MBT) Philippines, resulting in the company's first export order to the Philippines. The Concrete Construction Industry in Asia further embraced Manu equipment for admixture dispensing, favouring it over traditional bottle systems, yet with still increased orders received for **MES20** and **UIC/A** interface cards used with the sight cylinder systems.
Tony Manu and Kerry Carr attend the W.R.Grace admixture conference in Bangkok, Thailand, where they showcased the Manu **ME995-6** Batch Controllers & **MES20** Flowmeters. Manu's reputation is further enhanced, leading to MBT Vietnam placing its first order for Manu systems in 1999.

MBT (Philippines) Inc.
AFP-RSBS Industrial Park, East Service Road
South Superhighway
Taguig, Metro Manila
Philippines 1631

Tel. Nos. : (632) 838-4827 to 29
839-0431 / 839-0432
837-4132
Fax No. : (632) 838-4830

Master Builders Technologies

PURCHASE ORDER

No. 6784

TO: MANU ELECTRONICS PTY. LTD.

DATE February 10, 200
OUR ORDER NO.

DESCRIPTION	QUANTITY	PRICE	AMOUNT
1. ME995-6 Batch controller	12 units	A$ 545.00	A$ 6,540.00
2. S12 Selection switch	12 pcs.	75.00	900.00
3. SHB1 single box w/ contactor	6 pcs.	185.00	1,110.00
4. SHB2 Double box w/ 2 contactors	3 pcs.	235.00	705.00
5. DHB3 Double box w/3 contactors	3 pcs.	315.00	945.00
6. MES20 Flow meter 20mm	15 pcs.	295.00	4,425.00
7. TS Toggle Switch	6 pcs.	FREE	FREE
8. SK Selector Knobs w/ cap	12 pcs.	FREE	FREE
9. ST Selector Knob sticker	2 sheets	FREE	FREE
UPS DELIVERY CHARGES			A$ 370.00
			A$ 14,995.00

First Philippines order

AS PER PR# 12280
TERMS: TT-60 days from BL date
SHIPMENT BY: AIRFREIGHT DOOR TO DOOR BY UPS
FROM: AUSTRALIA TO: MANILA, PHILS.
REMARKS: FOR THE FF. BATCHING PLANTS:
1. 101 Ready Mix
2. Makati Devt. Corp.
3. Betonval
4. ADC
5. Metromix (Cavite)
6. San Jose Builders
7. Exan (2)
8. Cemex
REMARKS:
NOTIFY:
NOTED BY:
MALOU M. DELA CRUZ
ALMA C. GERONIMO
PRICE NOT NOTED
MBT (PHILIPPINES) INC.
PAUL HEIS
Authorized Signatory

Building Tomorrow Together SKW-MBT
Suppliers Copy

***ME995-6's** + **MES20's** bound for the Philippines.* ▲

degussa.
Construction Chemicals

PURCHASE ORDER

Date: May 02, 2002
P/O No: MBT2-05-01

Attn: Mr. Alex Manu
To: Manu Electronic Pty Ltd.
41 Carter Road Brookvale
Sydney NSW 2100
Australia

Tel: 61 2 9938 1425, 9905, 4324
Fax: 61 2 9938 5862

Thai Master Builders Co.,
127/33 Panjathani Tower, 2
Nonsee Rd., Chongnonsee
Yannawa, Bangkok 10120
Thailand

T +66 2861 1020
F +66 2861 1033

sarithorn.nuthong@degussa.com

www.mbt.com.sg

Logistic & Purchasing

FQA/sn

May 02, 2002

Kindly arrange the following product by earliest possible courier shipment.

Item	Description	Pack Size	Quantity	Unit Price (A$)	Amount (A$)
1	FLOWMETER MES 20 5-25 V.DC.	UNIT	10	301.125	3,011.250
2	UIC/A INTERFACE CARD	UNIT	10	127.875	1,278.750
	UPS COURIER CHARGE			180.000	180.000
	TOTAL CIF BANGKOK				4,470.000

Tony & Kerry Carr at the GCP Thailand Admix Conference Expo. ►

1999 – The Y2K drama, the new millennium approaches, and R&D applications begin

The turn of the millennium brought widespread panic as the Y2K bug raised global concerns. Companies scrambled to identify products potentially affected by the date stamp changes. Manu Electronics quickly assured the market that its only relevant product, the **ME6000**, was unaffected. Contrary to dire predictions, the millennium changeover resulted in very few issues. Amid this environment, Alex began submitting yearly, detailed Research & Development (R&D) claims to the government, securing tax concessions to support Manu Electronics' future experimental design projects for the next 22 years in succession. These initiatives encompassed the development of groundbreaking products such as the **ME2000**, **ME3000**, **FRT303**, **ME5**, **ManuMag**, **20-5ST** Ryton measuring chamber, and chemical compatibility testing, among other innovative ventures that involved significant risk and expense.

MBT Holding – YKS 2000 PROJECT OFFICE

YAPKIM YAPI KIMYA SANAYI A. Ş.
Gür İş Merkezi, Değirmen Yolu Sokak
No. 21, Kat 6-7-8
81120 İçerenköy
Istanbul
TURKEY

Tel : (+90) 0216-445 34 45
Fax : (+90) 0216-445 34 59
Mobile: (+90) 532 638 34 20
E-mail: bko@yks-yapkim.com.tr

Telefax

To:	Manu Electronics Pty Ltd	Fax No:	+612-9938 5852
Attn:	Alex Manu	Ref:	
From:	Brian Carrick	Page: 1 of (incl cover sheet)	1
Copy:		Date:	19 August 1999

Subject: MANU in TURKEY !

Hi Alex, & Tony & all the other Manu's,

Sorry for the long silence.

I attended the Concrete Institute of Australia's biennial Conference in Sydney week 1 May as an unemployed ex MBT man, ... and by the end of the week had 4 job offers: two market survey assignments from MBT OZ, two from other consultants already operating in OZ, and one from SKW - MBT Holding, Zurich re a job in Turkey.

My assignment is Project Manager for DM 15 million new plant not far outside Istanbul. It will dwarf MBT Seven Hills in size & production capacity. We just redesigned admix tanks from original 75,000 Litre storage capacity to 50,000 just so we could reduce diameter & fit more tanks into tank farm. And the powder plant is gi-normous !

But never fear. Here I am spreading the Gospel according to St Manu again. Last week I received my package of reference manuals, etc from home including my Manu '1997 Products Catalogue'. Today am giving this to the dispenser man here to study & promised to explain all to him after he has perused the contents.

If not too much to ask could you send two (2) copies of your latest catalogue/prices and, as an investment for future business, one (1) ME 995-3K plus MES20 flowmeter or current models of each. Send as sample for demonstration purposes. If Yapkim decide to use it I will arrange Purchase Order. If not I will bring it back with me in December.

Turkey is getting very close to Tony's home, so on next trip maybe he can plan a little detour via Istanbul to convert the MBT-heathens.

62. day I will send you that invoice!!
rick

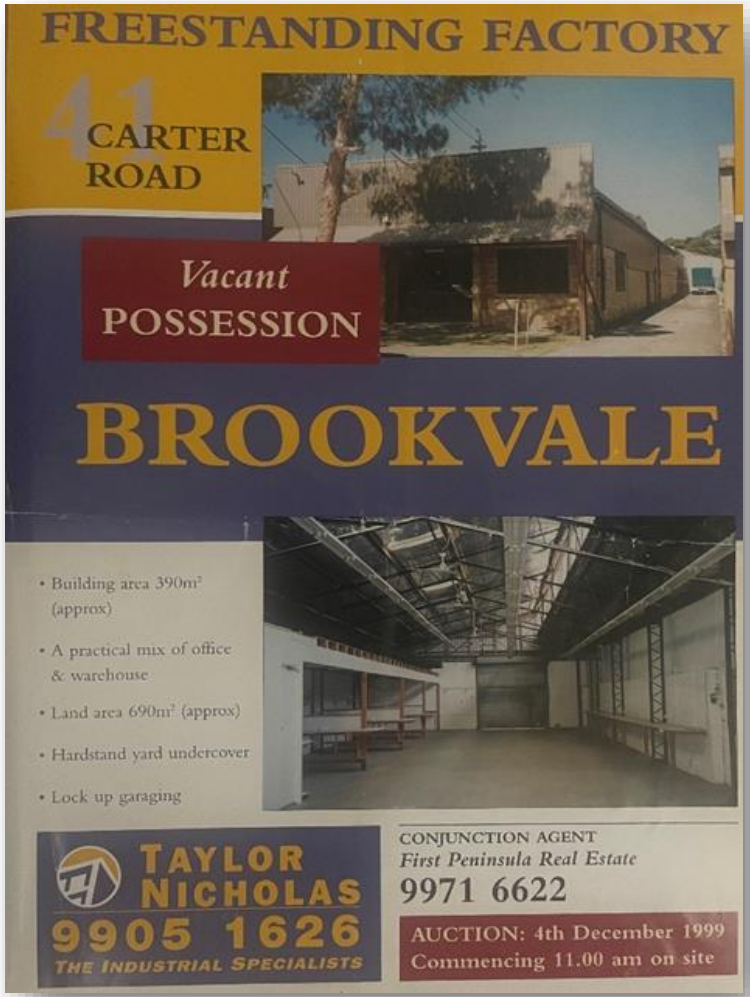
◄ *In 1999, Brian Carrick initiated introduction of Manu products to the MBT admixture factory in Turkey. Building on his prior successes in establishing Manu products in numerous other international markets, Brian sought to replicate this in Turkey, showcasing Manu's value and versatility in construction chemical measurement.*

Australian Government
Department of Industry, Innovation and Science

Research & Development Submissions 1999 – 2021.

January 2000 – The New Millenium and new ManuFlo Factory/Office facility

As the business continued to grow, larger facilities became essential. After a six-month search, Alex purchased a 460m^2 facility at 41 Carter Road Brookvale to support future expansion. The operation transitioned to this custom-designed site, marking a significant upgrade after 17 successful years at the previous location, originally acquired by Tony. In line with the company's evolving identity, Alex undertook a strategic analysis and launched a new corporate trading name and logo. This rebranding better reflected Manu Electronics' expanding product range for liquid flow measurement applications. As a result, Manu Electronics Pty Ltd became internationally recognized under its registered IP logo, MANUFLO, accompanied by the catchphrase: ***"ManuFlo – Flow Measurement Products - Go with the Flo."***



ManuFlo ®™
Flow Measurement products

The new official company corporate logo.

The new ManuFlo premises and internal workshop facility.


Certificate of registration of trade mark

No. 835501

I, PETER TUCKER, Registrar of Trade Marks, hereby certify -

that the trade mark represented on this certificate has been registered as a Trade Mark, No. 835501 in the Register of Trade Marks for a period of ten years commencing 18 May 2000 and that Manu Electronics Pty Ltd ACN/ARBN 002 946 303 of 41 Carter Road BROOKVALE NSW 2100 AUSTRALIA has been entered in the Register of Trade Marks as the owner of the trade mark.

The trade mark is registered for the following goods and/or services:

Process control measurment equipment "flowmeters" being goods in class 9

ManuFlo

Given under my hand and the seal of the Trade Marks Office on 26 June 2001

PETER TUCKER
REGISTRAR OF TRADE MARKS

ManuFlo Trademark registration certificate.

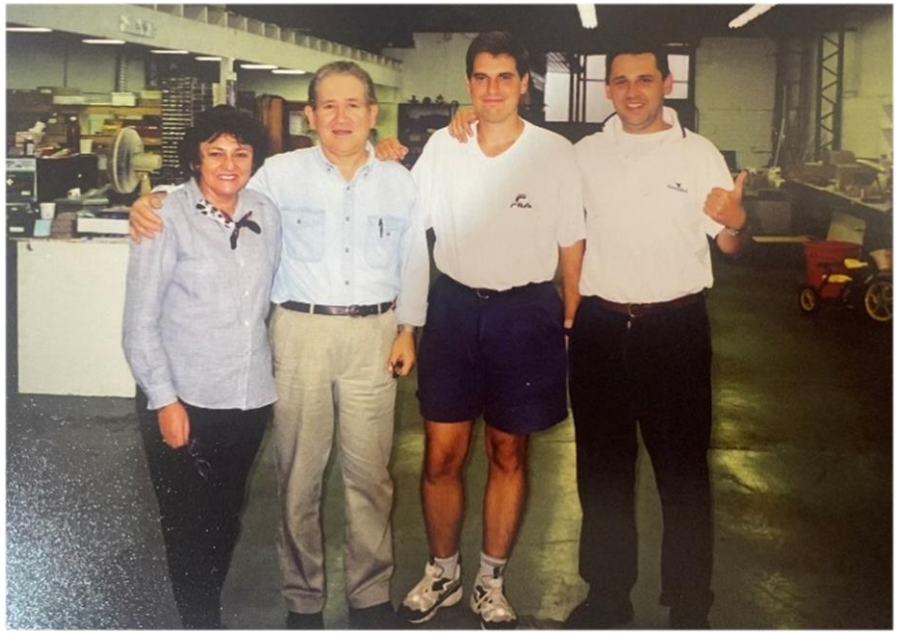
June 2000 – Consolidation and continued improvements

The new ***ManuFlo*** factory premises provided ample space to support the growing business and meet the increasing production demands. The flow test calibration rig was relocated to the new facility, while the addition of dedicated work bays allowed for streamlined large-scale production, repair, sales, and office operations. To enhance communication, a Telstra-Commander multiple phone system was installed. Staff amenities were significantly upgraded to support the growing team. Enhancements included a new kitchen, spacious his and hers toilet facilities, recreational additions such as a pool table and table tennis table, and lively lunchtime cricket matches in the driveway. The premises also offered ample parking to comfortably accommodate the expanding workforce. To support the business's growth, Alex relocated to Dee Why, cutting down travel time from Chatswood to be closer to the new premises. Owners and staff all bonded together to support the relocation effort. The staff contributed to the move in various ways, including Felix, who took on the task of painting the interior of the new premises. Meanwhile, the year 2000-2001 brought challenges when the dot-com bubble burst temporarily affecting businesses globally. Nevertheless, ManuFlo continued to thrive, employing more staff to meet its growing needs.

Tony pictured setting up re-plumbing the famous Flowmeter Testing Flow-Rig with Mag-Master flowmeter and wiring the load cell verifying equipment.

New digital LCD Multi-meter.

New Phone system handset.



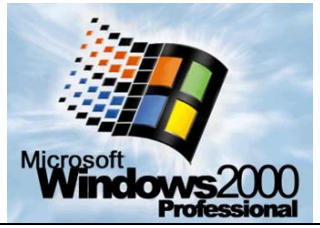
Engineer Canada Cousin Phil visits Lena, Tony & Alex at the Factory. ▲

The Tech Wreck Stock-market correction impacted businesses ►

August 2000 - The ME2000 Launch Sparks a Concrete Industry Chemical Measurement Revolution

As client demands for faster flow rates grew, requiring larger flowmeters with varying pulse output rates, alongside enhanced safety functions and alternatives to cumbersome sight bottle dispenser systems in parts of Asia, the company embraced microprocessor technology. This led to the development of an innovative batch counter interface safety card, tailored to meet the evolving needs of the Hong Kong and Southeast Asian markets. ManuFlo along with Jong Chee-Kiang from WR.Grace Hong Kong played a pivotal role in bringing the device to market.
Tony Manu enlisted Perry Brown, a visionary engineer in the field, to design a groundbreaking solution that incorporated decades of safety scenario knowledge derived from Manu's collective expertise in measuring chemical admixtures. The Manu team provided Perry with detailed operational blueprints, leading to the creation of the **ME2000**—a world-first product that revolutionized the industry. Combining advanced software and hardware, the **ME2000** emerged as the most sophisticated microprocessor batch safety interface card system, capable of simultaneously controlling up to six flowmeters that measured the chemicals within PLC/Computer-controlled systems.
The **ME2000** received widespread industry acclaim and was installed in over 500 concrete batch plants across Australia, New Zealand, the South Pacific, and Hong Kong/Southern China over the next six years, paving the way for the introduction of its successor, the **ME2008**.

*Original test Prototype **ME2000***



*The launch of the **ME2000** coincides with the launch of Windows-2000.*

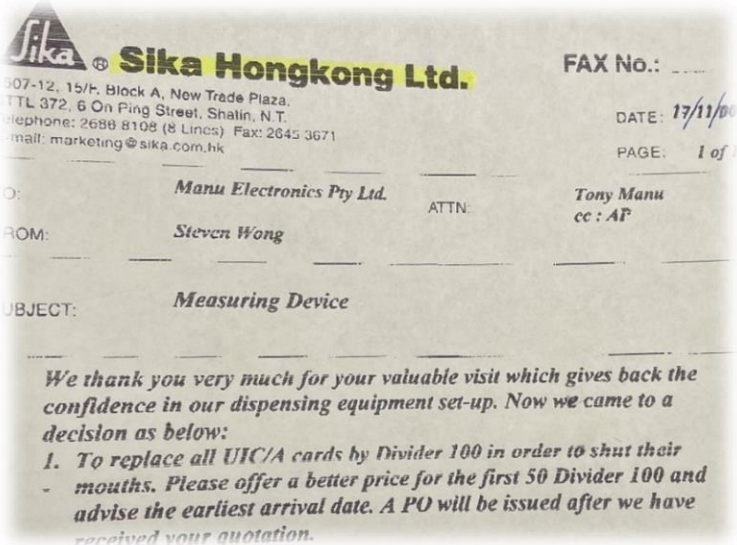
*Multiple **ME2000's** installed in a 4 way loading alley batch plant for W.R.Grace in Hong* Kong.

***ME2000** installed unit*

2000 - The New Millennium – Leading with Conviction

Manu Electronics Pty Ltd, with its newly growing and internationally recognized corporate image as ***ManuFlo***, is well-positioned for a new chapter of growth. The successful introduction of a groundbreaking Manu products, installed by one of the major concrete admixture suppliers, was likely to lead to competing companies following suit.

For instance, after Grace Hong Kong rolled out the **ME2000** batch safety interface cards, companies like SIKA and Master Builders Technologies approached ManuFlo for the supply of the same product. At that time, ManuFlo was customizing the facias with customer corporate logos and customized software naming.



Sika® Sika Hongkong Ltd.

1507-12, 15/F, Block A, New Trade Plaza,
STTL 372, 6 On Ping Street, Shatin, N.T.
Telephone: 2686 8108 (8 Lines) Fax: 2645 3671
e-mail: marketing@sika.com.hk

FAX No.: ____

DATE: 17/11/00

PAGE: 1 of

TO: Manu Electronics Pty Ltd. ATTN: Tony Manu
cc : AF

FROM: Steven Wong

SUBJECT: Measuring Device

We thank you very much for your valuable visit which gives back the confidence in our dispensing equipment set-up. Now we came to a decision as below:

1. *To replace all UIC/A cards by Divider 100 in order to shut their mouths. Please offer a better price for the first 50 Divider 100 and advise the earliest arrival date. A PO will be issued after we have received your quotation.*

Manu Electronics Pty. Ltd.
41 Caner Road Brookvale,
Sydney NSW 2100,
Australia

Attn : Mr. Alex Manu

Sika Hongkong Ltd.
1507-12, 15/F, Block A, New Trade Plaza, STTL 372, On Ping Street, Shatin, N.T.
Telephone: 2686 8108 (8 Lines) Telefax: 2645 3671

Alex with cousin Peter from the USA, making a deal. ▼

Jess heralds the arrival of Tony's grandkids at the new factory which was being freshly painted.

22/08 '01 16:11 FAX + 852 2645 3671 SIKA HK LTD 001

SIKA HONGKONG LTD.
Room 1507-12, 15/F., Block A, New Trade Plaza,
STTL372, 6 On Ping Street, Shatin, N.T., Hong Kong
Tel : (852) 2686 8108 (8 Lines) Fax : (852) 2645 3671
e-mail : marketing@sika.com.hk

PURCHASE ORDER

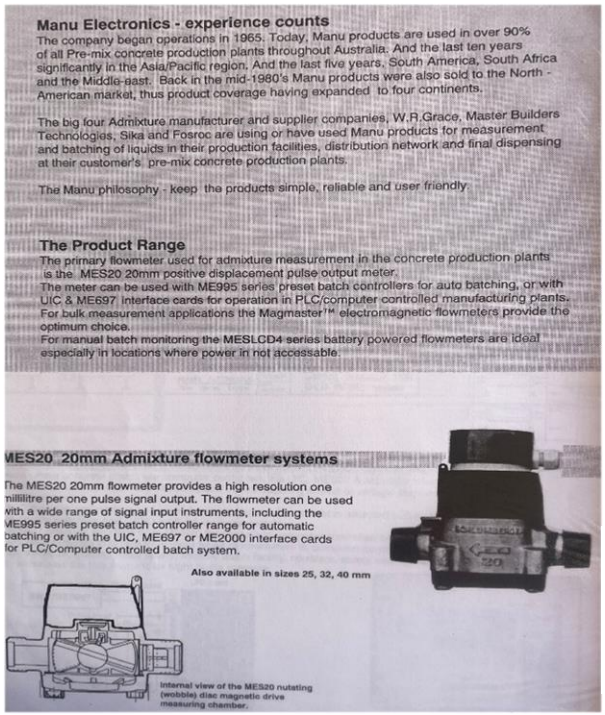
To : Manu Electronics Pty Ltd.
Attn : MR. ALEX MANU

Order No. : 0000001465-1
From : MISS JOEY LEE
Date : 22-08-01

Item	Desctiption	Quantity	@Price Cur	Amount
10	PULSE FAIL SAFETY DEVICE ITEM NO. ME2000-6	1.00 UNIT	2,575.00 AUD	2,575.0

2000 – 2001: Exports Orders reach all seven Continents

Manu Electronics Pty Ltd, through its ManuFlo product brands, proudly reached every continent—including finally Antarctica, where an **MES32LCD4** resettable, lithium-powered flowmeter was supplied to the Australian Mawson Research Facility.



Manu Electronics - experience counts

The company began operations in 1965. Today, Manu products are used in over 90% of all Pre-mix concrete production plants throughout Australia. And the last ten years significantly in the Asia/Pacific region. And the last five years, South America, South Africa and the Middle-east. Back in the mid-1980's Manu products were also sold to the North - American market, thus product coverage having expanded to four continents.

The big four Admixture manufacturer and supplier companies, W.R.Grace, Master Builders Technologies, Sika and Fosroc are using or have used Manu products for measurement and batching of liquids in their production facilities, distribution network and final dispensing at their customer's pre-mix concrete production plants.

The Manu philosophy - keep the products simple, reliable and user friendly.

The Product Range

The primary flowmeter used for admixture measurement in the concrete production plants is the MES20 20mm positive displacement pulse output meter.
The meter can be used with ME995 series preset batch controllers for auto batching, or with UIC & ME697 interface cards for operation in PLC/computer controlled manufacturing plants.
For bulk measurement applications the Magmaster™ electromagnetic flowmeters provide the optimum choice.
For manual batch monitoring the MESLCD4 series battery powered flowmeters are ideal especially in locations where power in not accessable.

MES20 20mm Admixture flowmeter systems

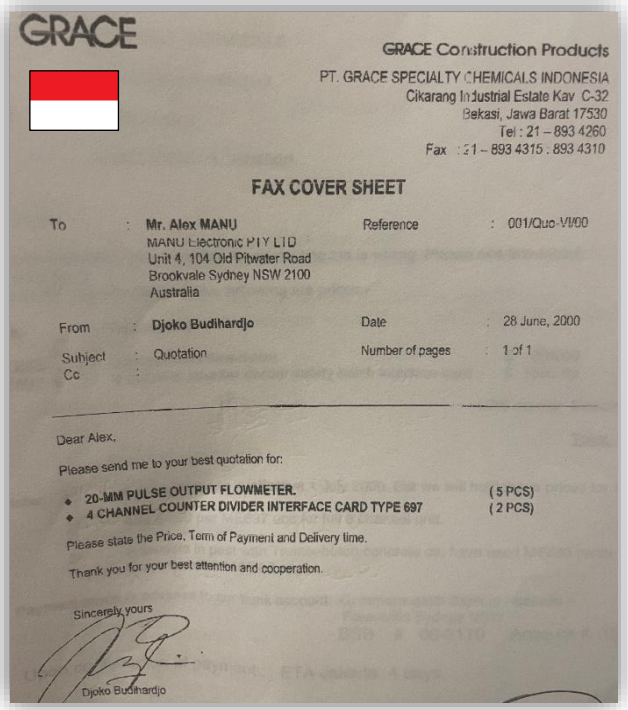
The MES20 20mm flowmeter provides a high resolution one millilitre per one pulse signal output. The flowmeter can be used with a wide range of signal input instruments, including the ME995 series preset batch controller range for automatic batching or with the UIC, ME697 or ME2000 interface cards for PLC/Computer controlled batch system.

Also available in sizes 25, 32, 40 mm

Internal view of the MES20 nutating (wobble) disc magnetic drive measuring chamber.

1995 Promotional Flyer for the MES admix flowmeters
◄

MES32LCD4



GRACE

GRACE Construction Products

PT. GRACE SPECIALTY CHEMICALS INDONESIA
Cikarang Industrial Estate Kav C-32
Bekasi, Jawa Barat 17530
Tel : 21 – 893 4260
Fax : 21 – 893 4315 . 893 4310

FAX COVER SHEET

To : Mr. Alex MANU
MANU Electronic PTY LTD
Unit 4, 104 Old Pitwater Road
Brookvale Sydney NSW 2100
Australia

Reference : 001/Quo-VI/00

From : Djoko Budihardjo

Date : 28 June, 2000

Subject : Quotation

Number of pages : 1 of 1

Cc :

Dear Alex,

Please send me to your best quotation for:

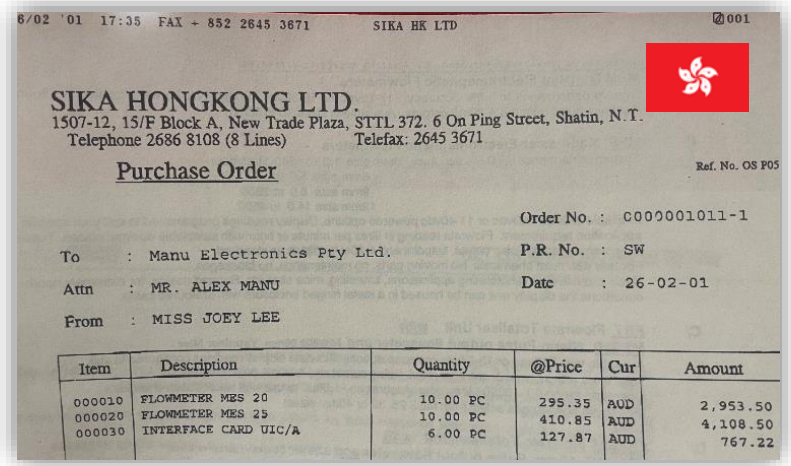
- 20-MM PULSE OUTPUT FLOWMETER. (5 PCS)
- 4 CHANNEL COUNTER DIVIDER INTERFACE CARD TYPE 697 (2 PCS)

Please state the Price, Term of Payment and Delivery time.

Thank you for your best attention and cooperation.

Sincerely yours

Djoko Budihardjo



8/02 '01 17:35 FAX + 852 2645 3671 SIKA HK LTD 001

SIKA HONGKONG LTD.
1507-12, 15/F Block A, New Trade Plaza, STTL 372. 6 On Ping Street, Shatin, N.T.
Telephone 2686 8108 (8 Lines) Telefax: 2645 3671

Purchase Order

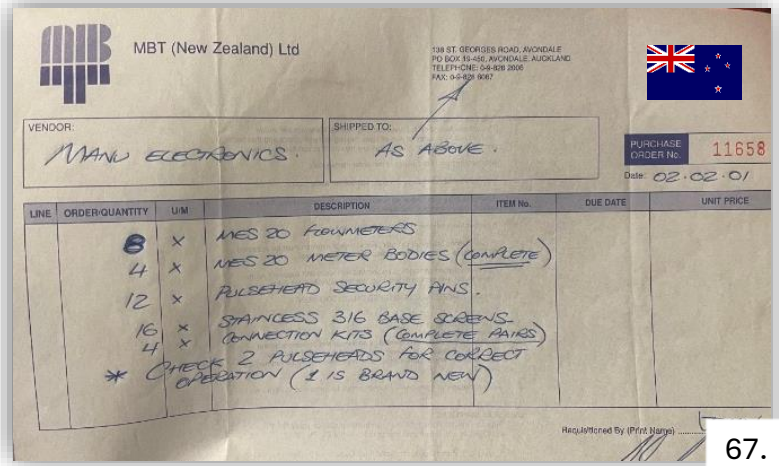
Ref. No. OS P05

Order No. : C000001011-1
P.R. No. : SW
Date : 26-02-01

To : Manu Electronics Pty Ltd.
Attn : MR. ALEX MANU
From : MISS JOEY LEE

Item	Description	Quantity	@Price	Cur	Amount
000010	FLOWMETER MES 20	10.00 PC	295.35	AUD	2,953.50
000020	FLOWMETER MES 25	10.00 PC	410.85	AUD	4,108.50
000030	INTERFACE CARD UIC/A	6.00 PC	127.87	AUD	767.22

ManuFlo ®™
Flow Measurement products



MBT (New Zealand) Ltd

338 ST. GEORGES ROAD, AVONDALE
PO BOX 93-450, AVONDALE, AUCKLAND
TELEPHONE: 64-828 2606
FAX: 0-828 9067

VENDOR: MANU ELECTRONICS.
SHIPPED TO: AS ABOVE.
PURCHASE ORDER No. 11658
Date 02-02-01

LINE	ORDER QUANTITY	U/M	DESCRIPTION	ITEM No.	DUE DATE	UNIT PRICE
	8	X	MES 20 FLOWMETERS			
	4	X	MES 20 METER BODIES (COMPLETE)			
	12	X	PULSEHEAD SECURITY PINS.			
	16	X	STAINLESS 316 BASE SCREWS.			
	4	X	CONNECTION KITS (COMPLETE PAIRS)			
	*		CHECK 2 PULSEHEADS FOR CORRECT OPERATION (1 IS BRAND NEW)			

Requisitioned By (Print Name) .....

2001 - RMS Magflows installed in China

In 2001, **RMS** Electromagnetic Flowmeters were launched as a premium option for measuring demanding liquids. Approximately 60 units were sold to North China and installed at CSR-Readymix batch plants by SIKA, replacing some **MES** flowmeters. These devices were later introduced for recycling and slurry water applications in concrete batch plants and mining operations, as well as precision dosing uses. Their advanced design, paired with the ManuFlo team's expertise in setting operational parameters, provided customers with peace of mind and confidence.

Meanwhile, the **ME2000** software was upgraded to Version 1.2, improving comparator safety functions and pulse output logic states, marking continued progress in batch safety technology. As the internet revolutionized global business, ManuFlo registered new websites, ***www.manuelectronics.com.au*** and ***www.manuflo.com***.

In 2001, Sika Australia entered the Australian market as a producer and supplier of chemical admixtures, alongside Relcrete, Australian Admixture-Co., MBT and W.R. Grace. Recognizing ManuFlo as the leading manufacturer and supplier of dispensing equipment, Angus Perruzo pursued collaboration to acquire and distribute ManuFlo's dispensing solutions.

Tony Manu centre, with Sika China staff at Tianjin China Concrete Batch, 2001.

***RMS** Magflow*

In 2001, ManuFlo's competitor since the early 1980's, Badger Meter, made a notable move by visiting both our customers and our factory in Sydney.

Once 3 ¼" floppy discs existed.

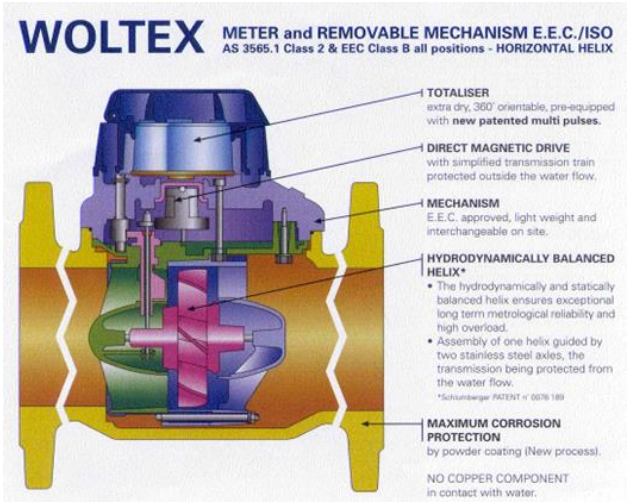
Upgraded all-in-one office fax copier joins the office.

ManuFlo™ a division of MANU ELECTRONICS PTY LTD
Flow Measurement Products
ABN: 47-002-946-303
41 Carter Road Brookvale
Sydney NSW 2100 Australia
Ph: + 61 2 9938 1425, 9905 4324
Fax: + 61 2 99385852
Email: sales@manuelectronics.com.au
Web: www.manuelectronics.com.au

2001 – Ramping up Irrigation and general process control measurement opportunities

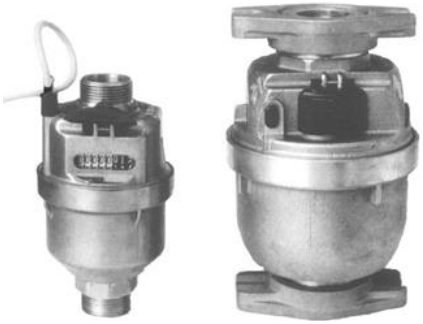
Recognizing the growing importance of irrigation and the increasing demand for flow measurement solutions, ManuFlo expanded its product range beyond its traditionally homegrown and manufactured offerings. With a strong 40-year partnership with local water meter manufacturers, this expansion introduced a diverse selection of irrigation water meters, including mechanical-read turbine, inferential bypass, single-jet, multi-jet, and positive displacement types. These meters offered optional pulse signal output, seamlessly integrating with Manu's lithium-powered, remote-resettable LCD display counters.
Additionally, Automatic Meter Reading **(AMR)** technology is beginning to emerge in the market, heralding a new future of efficiency in water meter application technology.

SIM *proportional bypass inferential meters*



WPD *Turbine meter*

MEH *range of Multi-Jet and Turbine Water Meters*



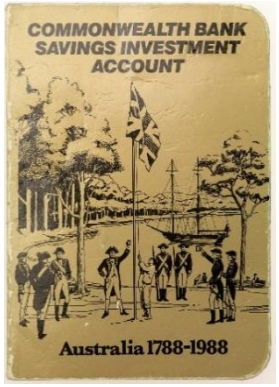
PSM *Elster/Kent water meters compliment the product range*

Hot water Meters

WPD *meter c/w* ***ME5-T*** *reset counter*

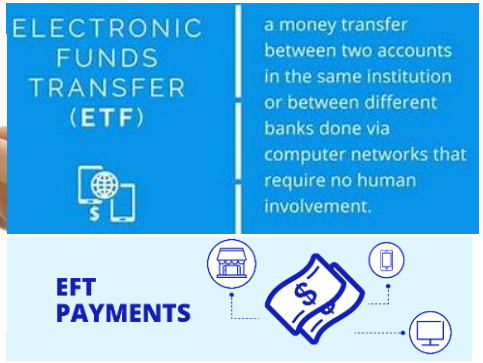
Milestones – EFT Technology transforms financial and communication practices

A long time ago, in a financial system far, far away…
Before the rise of computers and the internet, business practices were largely manual. On payday, payslips were processed, large amounts of cash withdrawn from the bank, and distributed to employees. Some of Manu's employees opted for wages deposited to passbooks directly, with the transaction details printed in their pass books. This system persisted with the ManuFlo company until **2001**, when a payroll cash theft from the front office prompted a shift to electronic funds transfer (EFT) for all employee payments.
For many years, cheque payments were posted and received for most local business transactions.
Credit-cards were once processed by imprinted carbonised paper slips. Cheques and Card slips were then manually entered into the deposit book and a visit to the local branch bank was a weekly ritual for deposits and withdrawals.
Over time, however, EFT emerged as the preferred method, offering a faster, more secure, and more reliable way to process Credit-cards and to transfer funds. Then finally internet banking totally transformed and streamlined the business.



Deposit book slip for Cheques

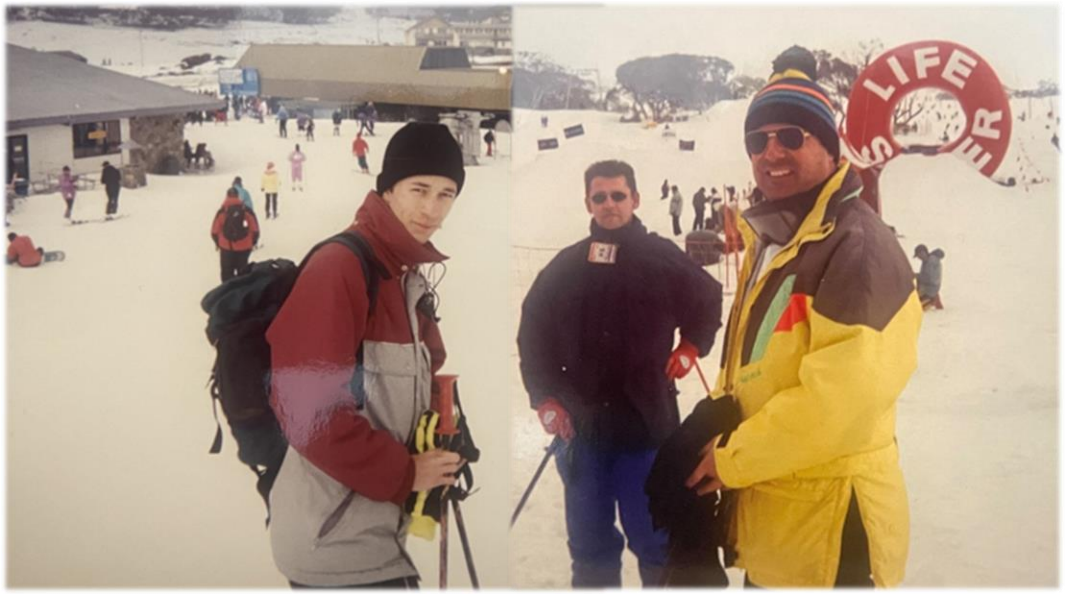
Credit Card payment swipe machine



Milestones – The ManuFlo Ski-Trips

It was a work hard and play hard culture with Alex and his team of dedicated employees at ManuFlo. For many consecutive years, the annual ski trip to the NSW snowfields became a tradition—an essential pilgrimage that blended exhilaration with team bonding.

As the company grew, so did its recreational spirit. ManuFlo acquired kayaks and even its own speedboat, which became the centerpiece of memorable fishing trips. These outings weren't just leisure—they were a celebration of teamwork beyond the workplace.
During the road trips to the Ski-fields, the team would also visit regional clients and have an occasional game of golf.



Stephane, Alex and Chris at Perisher – 2002.

From skiing to organizing and stacking the ManuFlo stock shelves.

2002 – Residential Water Usage Studies - another ManuFlo world first exclusive

ManuFlo built a strong reputation in the industry for its ability to achieve high-resolution pulse output signals from flowmeters. This unique capability drew the attention of various water authorities and research organizations seeking innovative solutions. The challenge was to retain the full mechanical register functionality of the flowmeter while providing sufficient pulses to monitor flow rates, connect to a data logger, and accurately record results. These results needed to be precise enough to distinguish between activities such as toilet flushes, showers, garden hose usage, dishwashers, and more. The data collected was to be instrumental in understanding water usage habits, enabling authorities to predict peak water demands, manage water supplies, and even initiate desalination projects.

In response, Tony and Alex evaluated meters from several manufacturers, ultimately selecting the Actaris **CT5 20mm** dry dial water meter. Their groundbreaking achievement delivered an impressive 72 pulses per litre with a volt-free output. The first order consisted of 350 units for Yarra Valley Water in Victoria. Following the success of this study, other organizations approached ManuFlo, leading to large-scale production. To date, approximately 15,000 specialized flowmeters have been supplied. Notable orders include shipments to Iran and a significant order for Abu Dhabi, UAE, in 2011. Additional orders were fulfilled across locations such as NSW, QLD, VIC, New Zealand, Germany, and more.

Studies conducted for;

- *Yarra Valley Water -VIC.*
- *Sydney Water -NSW.*
- *Med Arabia Ctr -Kuwait.*
- *Gold Coast Uni – QLD*
- *Branz Co. – NZ*
- *Gosford Council –NSW*
- *Unity Water -VIC*
- *Abu Dhabi Water -UAE*
- *CSIRO -Australia*
- *AquaCraft -USA*

and many more.

Prestigious Iranian Water Meter study

Outpost WASP Series logger. Smart phones can be used to assist installations.

***CT5** with Logger ►*

2002 – The Show must go on – Resettable Totaliser and Flowrate Indicators

ManuFlo identified strategic industry sectors for sales expansion, focusing on irrigation and other key industries. This initiative was supported by an expanded range of custom products, including the **ME2**, **MET4**, and **MET8** remote resettable LCD totalizers, as well as a newly developed range of flowmeters designed to accommodate both low and high flow velocity applications. Additionally, the Kent **KMM** and **MEH** multi-jet flowmeters are introduced to further enhance the product lineup. This effort would inspire the future indicator equipment revamp in 2003.

Tony Manu – The Boss !

*Stephane with Tony in the bosses engineering den with **MESLCD** modules and a **PVC50-BSPB** adaptor in hand.*

***KMM20** with **ME2** dual LCD*

***MET-4** reset totaliser.*

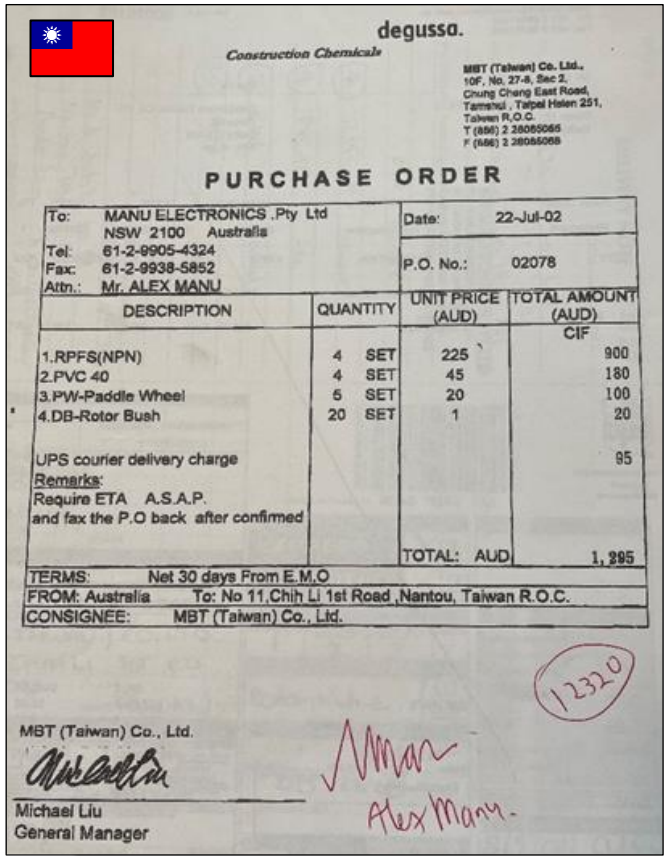
***MEH-R** Mechanical Total + Pulse Flowmeters*

***MET-8** eight channel totaliser*

2002 to 2003 – ManuFlo capitalizes on the Asian economic growth story

By 2002, exports accounted for 40% of ManuFlo's total sales, reflecting the company's remarkable growth. New orders expanded into markets like Taiwan and Vietnam, alongside continued growth in China, Hong Kong, Thailand, Malaysia, the Philippines, and several South American countries. Domestically, ManuFlo's entry into new market sectors further boosted sales.

By early 2003, Alex was working 12–16-hour days, balancing business management with late-night quoting for increasing sales opportunities. Recognizing the urgent need for support, the search for an operations and sales manager began. Out of two shortlisted candidates, Chris Ramos—known to Alex since childhood—joined the team, bringing decades of expertise in operational engineering and professional management. With the addition of new production staff and further outsourcing of bulk manufacturing, ManuFlo was well-positioned for its next major leap forward. A new opportunity also emerged: targeting a broader range of irrigation integral and remote resettable flowmeters.



degussa.
Construction Chemicals

MBT (Taiwan) Co. Ltd.,
10F, No. 27-8, Sec 2,
Chung Cheng East Road,
Tamsui, Taipei Hsien 251,
Taiwan R.O.C.
T (886) 2 28085065
F (886) 2 28085068

PURCHASE ORDER

To:	MANU ELECTRONICS .Pty Ltd NSW 2100 Australia	Date:	22-Jul-02
Tel:	61-2-9905-4324	P.O. No.:	02078
Fax:	61-2-9938-5852		
Attn.:	Mr. ALEX MANU		

DESCRIPTION	QUANTITY	UNIT PRICE (AUD)	TOTAL AMOUNT (AUD) CIF
1.RPFS(NPN)	4 SET	225	900
2.PVC 40	4 SET	45	180
3.PW-Paddle Wheel	5 SET	20	100
4.DB-Rotor Bush	20 SET	1	20
UPS courier delivery charge			95
Remarks: Require ETA A.S.A.P. and fax the P.O back after confirmed		TOTAL: AUD	1, 295

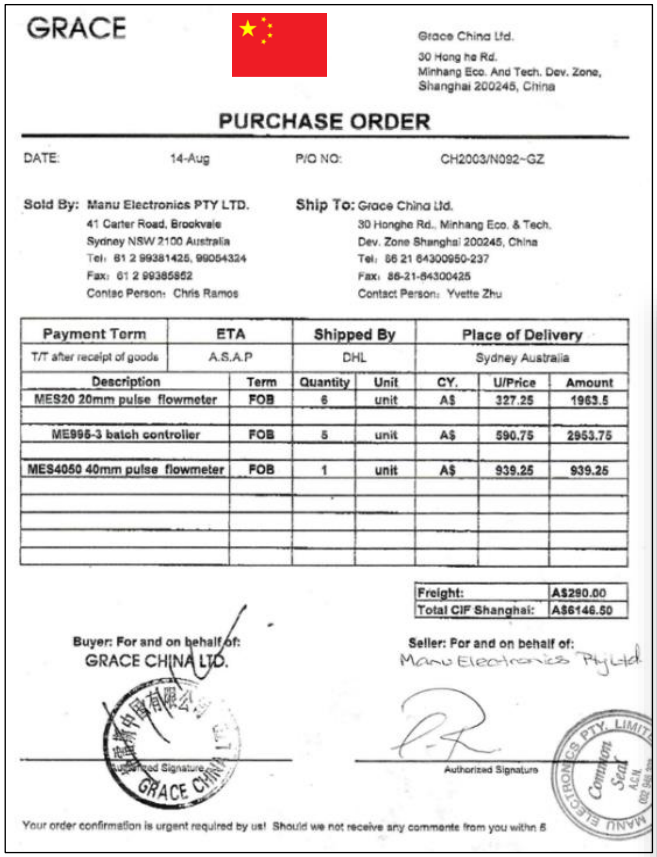
TERMS: Net 30 days From E.M.O
FROM: Australia To: No 11,Chih Li 1st Road ,Nantou, Taiwan R.O.C.
CONSIGNEE: MBT (Taiwan) Co., Ltd.

12320

MBT (Taiwan) Co., Ltd.
Michael Liu
General Manager

Alex Manu.

74. *MBT Taiwan order **RPFS** for admix factory.*



GRACE

Grace China Ltd.
30 Hong he Rd.
Minhang Eco. And Tech. Dev. Zone,
Shanghai 200245, China

PURCHASE ORDER

DATE: 14-Aug P/O NO: CH2003/N092~GZ

Sold By: Manu Electronics PTY LTD.
41 Carter Road, Brookvale
Sydney NSW 2100 Australia
Tel: 61 2 99381425, 99054324
Fax: 61 2 99385852
Contac Person: Chris Ramos

Ship To: Grace China Ltd.
30 Honghe Rd., Minhang Eco. & Tech.
Dev. Zone Shanghai 200245, China
Tel: 86 21 64300950-237
Fax: 86-21-64300425
Contact Person: Yvette Zhu

Payment Term	ETA	Shipped By	Place of Delivery
T/T after receipt of goods	A.S.A.P	DHL	Sydney Australia

Description	Term	Quantity	Unit	CY.	U/Price	Amount
MES20 20mm pulse flowmeter	FOB	6	unit	A$	327.25	1963.5
ME995-3 batch controller	FOB	5	unit	A$	590.75	2953.75
MES4050 40mm pulse flowmeter	FOB	1	unit	A$	939.25	939.25

Freight:	A$290.00
Total CIF Shanghai:	A$6146.50

Buyer: For and on behalf of:
GRACE CHINA LTD.
Authorized Signature

Seller: For and on behalf of:
Manu Electronics Pty Ltd
Authorized Signature

Your order confirmation is urgent required by us! Should we not receive any comments from you within 5

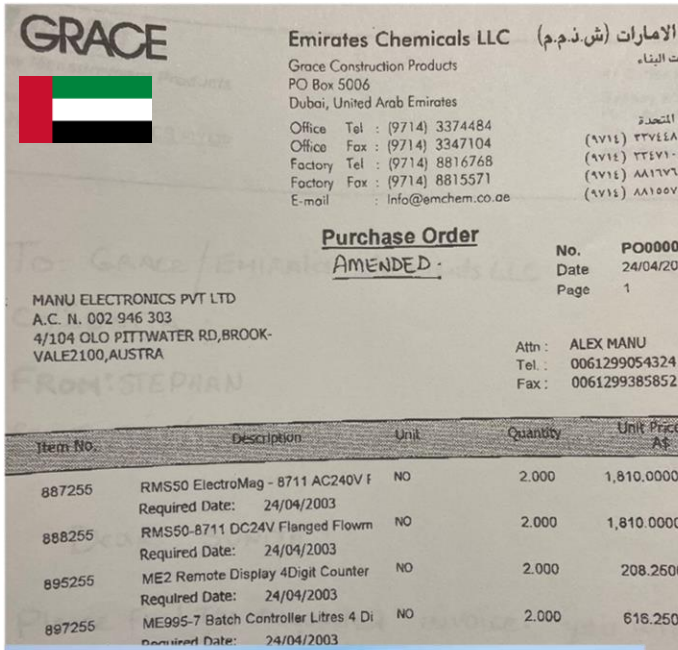
*Grace China order **ME995-3** + **MES20's.***

Pictured: ► Stephan, Alex and Chris Ramos being welcomed to the team.

2003 – New Exports Markets to the Middle-east, Asia and South America

Export sales in South America continued to expand through partnerships with Master Builders Technologies (facilitated by our contact, Cris Soler), SIKA, and appointed reseller/agent representatives. Key markets include Argentina, Chile, Colombia, and Peru. In Asia, sales had increased in Malaysia, Singapore and Vietnam, while interest continued to grow in Taiwan and Korea. Meanwhile, in the Middle-East an order from Grace Emirate Chemicals U.A.E is received for an admixture delivery tanker solution.

Core product offerings now include the **ME995-6** and **MES20** systems for admixture dispensing in concrete batch plants. For admixture blending plants and tankers, the **ME995-7** and **RMS050** Magnetic flowmeters remain highly sought-after solutions.


GRACE

Emirates Chemicals LLC

Grace Construction Products
PO Box 5006
Dubai, United Arab Emirates

Office Tel : (9714) 3374484
Office Fax : (9714) 3347104
Factory Tel : (9714) 8816768
Factory Fax : (9714) 8815571
E-mail : info@emchem.co.ae

Purchase Order
AMENDED

MANU ELECTRONICS PVT LTD
A.C. N. 002 946 303
4/104 OLO PITTWATER RD,BROOK-VALE2100,AUSTRA

No. PO00005
Date 24/04/200
Page 1

Attn : ALEX MANU
Tel. : 0061299054324
Fax : 0061299385852

Item No.	Description	Unit	Quantity	Unit Price A$
887255	RMS50 ElectroMag - 8711 AC240V F Required Date: 24/04/2003	NO	2.000	1,810.0000
888255	RMS50-8711 DC24V Flanged Flowm Required Date: 24/04/2003	NO	2.000	1,810.0000
895255	ME2 Remote Display 4Digit Counter Required Date: 24/04/2003	NO	2.000	208.2500
897255	ME995-7 Batch Controller Litres 4 Di Required Date: 24/04/2003	NO	2.000	616.2500

DHL was used for most international export deliveries


GRACE

WR Grace(Malaysia) Sdn Bhd(14049-K)
Grace Construction Products
7 Lorong CJ1/1A Off Jalan Balakong
Cheras Jaya
SELANGOR DARUL EHSAN 43200
MALAYSIA
Phone : 603 9074 6133
Fax : 603 9074 7322

Purchase order
4500689112
Date 14.07.2004
Page 1

SHIP TO
WR Grace(Malaysia)Sdn.Bhd.(14049-K)
Grace Construction Products
7 Lorong CJ 1/1A Off Jalan Balakong
Cheras Jaya
SELANGOR DARUL EHSAN 43200
MALAYSIA

VENDOR
MANU ELECTRONICS PTY LTD
41 CARTER ROAD
BROOKVALE, SYDNEY-NEW SOUTH WALES NW
AUSTRALIA

INVOICE TO
WR Grace(Malaysia) Sdn Bhd(14049-K)
Grace Construction Products
7 Lorong CJ1/1A Off Jalan Balakong
Cheras Jaya
SELANGOR DARUL EHSAN 43200
MALAYSIA

VENDOR NO: 20588

TERMS OF DELIVERY	BUYER	TERMS OF PAYMENT
	GCP-Balakong 603 90746133	

ITEM	QUANTITY	UOM	DESCRIPTION
0001	20.000	EA	MES20mm Pulse Outpu DELIVERY DATE: 30.(
0002	20.000	EA	UIC /A-2 Interface DELIVERY DATE: 30.(
0003	1.000	LOT	Freight cost DELIVERY DATE: 30.

Gross Price
Discount % on Net
Gross Price
Total net value excl. tax

Fred Kupferroth
MARKETING MANAGER UGC.

Korea Master Builders Co., Ltd.
#1354-5, Sur Cho-Dong, Sur Cho-Ku,
Seoul, Korea. 9F, Kyung Mok Bldg.
Tel : (02) 3452-4891~5
Fax : (02) 3452-7869
H/P : 011 - 241 - 4893
Internet : redcoppr@ bora. dacom. co. kr.


SALES CONTRACT
Ref. No.: Manu-07/07 Dated: 25 June, 2007

The Buyer : SIKA LIMITED (VIETNAM)
Add : Nhon Trach I Industrial Zone, Nhon Trach Dist., Dong Nai Province, Vietnam
Tel : 84-61 560 700 Fax: 84-61 560 699 (new)
A/C No.:1000264-00-0 at DEUTSCHE BANK HOCHIMINH CITY
Representative by: Ms. **LENNIE DEL ROSARIO** - Director of Finance

The Seller : *MANU ELECTRONICS PTY LTD*
Add : 41 Carter Road Brookvale, Sydney NSW 2100 Austral
Tel : 61 2 99381425 Fax: 61 2 99385852
A/C No.:06-2170 00241172
Bank : Commonwealth Bank of Australia
Bank's address: Forestvile Sydney, Australia
Representative by: Mr. **ALEX MANU**

Buyer hereby agrees to buy from Seller and Seller hereby agrees to se
("**Goods**") in accordance with the terms and conditions as set forth in th

1 **Commodity, Quantity and Price**

Item No	Goods Description	Code	Quantity		Unit Price (AUD)	Total Value (AUD)
	MES-20	MES-20	10	Pc	337.43	3,374.30


MBT (Singapore) Pte Ltd

Operations Department
33 Tuas Avenue 11
Singapore 639090
Republic of Singapore
Tel : (65) 8616768
Fax : (65) 8614001
DID : (65) 8607375

Telefax

To: Manu Electronics Pty Ltd
Fax No: 001-61-2-9938-5852
Attn: Mr Alex Manu
Ref:
From: Dennis Koh
Page: 1 of 1 (incl.cover sheet)
Copy: David Rodrigues
Date: 8 April 1999

Subject: Manu Flow meter and Controllers

Dear Alex,

We would like to confirm purchase of the following:

3 units MES-20 (Flow meters)
3 units ME995-7 (Batch Controllers)

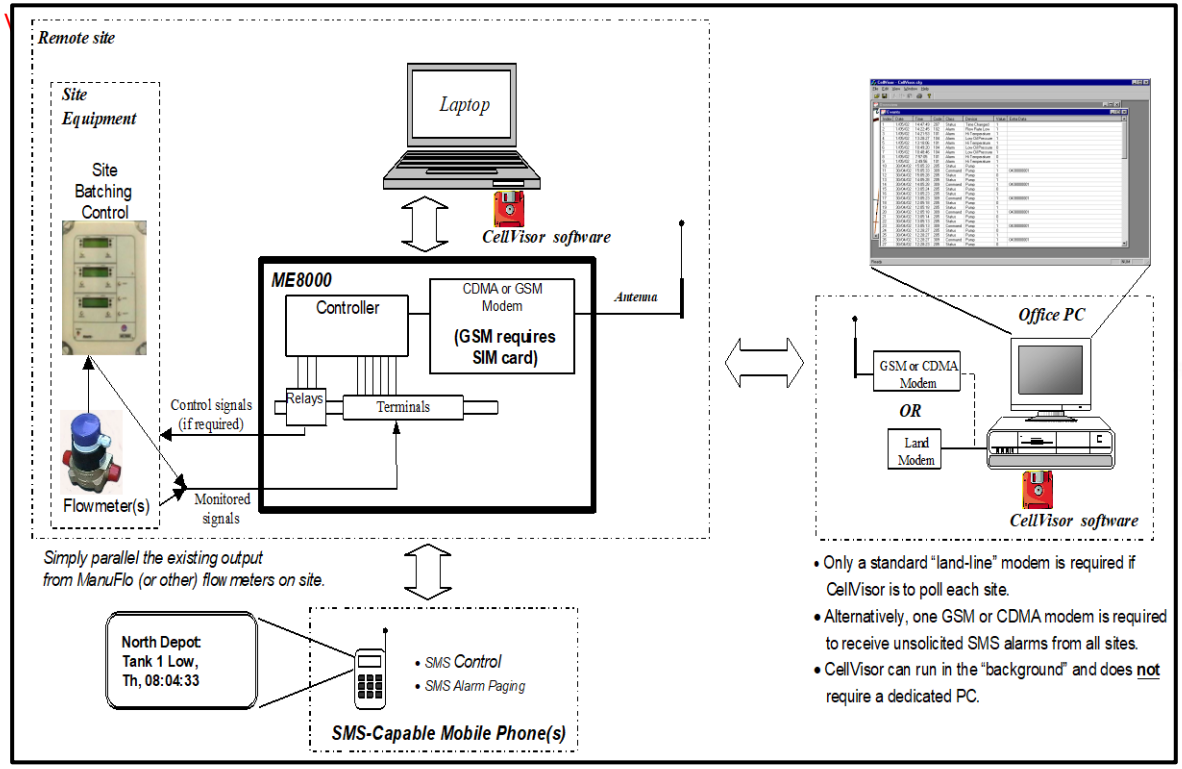
Please advise the final price and delivery for the above and we will send you our P


With Mr Kwek and his new PLC Batch system in Singapore.

2003 - The ME8000 tank level monitoring system, ahead of its time

ManuFlo's innovative approach to identifying industry opportunities led to a renewed collaboration with Mario Galea from E-State. This partnership resulted in the development of the **ME8000** batch tank level monitoring system, leveraging GPS technology. The system was designed to synchronize field flowmeter pulses with the **ME8000** device, enabling the initial tank volume to be recorded with each batch. Key features included timestamped batch quantity traceability, unsolicited alarm reporting, and automated inventory management of chemical stock levels across multiple sites.
The system's success relied heavily on tanker delivery drivers accurately inputting batch totals and sending SMS notifications and a vigilant IT-department. Despite producing 15 units, ManuFlo ultimately shifted focus to simpler and more profitable ventures.

For the first time since the 1970s, ManuFlo faced a challenge from competing technology—namely weigh batching systems. Driven by vested interests, these systems began to gain limited traction. However, ManuFlo's commitment to superior customer service, reliable product availability, and exceptional application solutions allowed them to triumph, leaving competitors with minimal impact.



*Overview of the **ME8000** system*

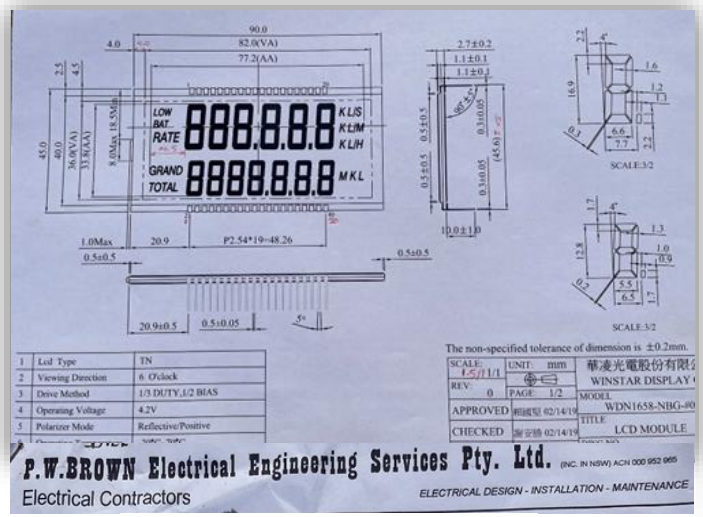
***ME8000** Module*

***Milestone:** In 2003 sales reach a record $1.95m for the year.*

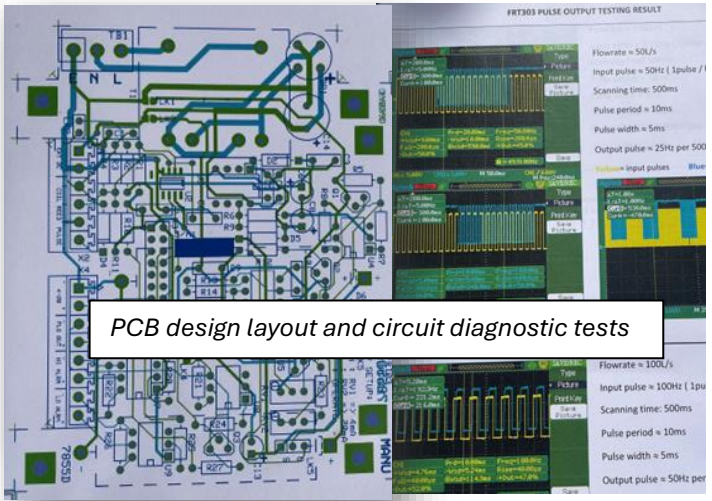
Admix Storage Tanks

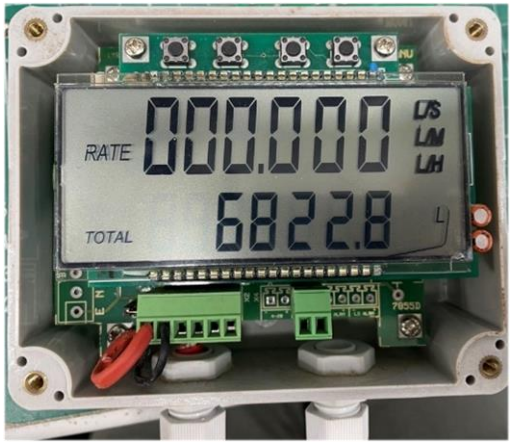
2003 – New range of microprocessor indicators - FRT303 and ME5

With enhanced resources and a vision to upgrade their product offerings, Alex and Tony collaborated with Perry Brown Electrical to design a new range of integral and remote resettable total and flowrate indicators. These indicators were engineered to accommodate various signal outputs, voltage inputs, including long-lasting lithium-powered options, and to support a wide array of flowmeter signals. This effort resulted in the introduction of the **ME5** and **FRT303** models. Additionally, a housing enclosure was developed to complement and house the electronic designs, ensuring an IP65 weather-resistant rating. These indicators powered growth into many more industry sectors.



Dual LCD design schematics





FRT303 *internal PCB view*

Tony the experimenter and inventor in his R&D engineering room.

Jan. 2004 – Taking time-out to spend quality time with cherished friends and industry connections

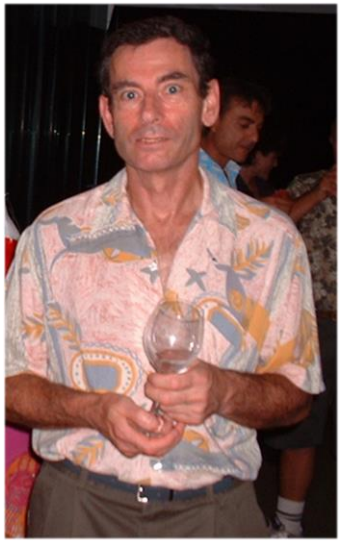
A welcomed get-together for Alex's 40th birthday to celebrate valued friendships and associations which have been forged over the decades.

Brain Carrick from MBT/BASF/Degussa

Joe Cartes from Emerson with Alex Manu

Graham Davy (MBT) with Kerry Carr from W.R.Grace

Alex with Maria Galea (E-State)



Peter Elliot (A.I.C.)

Angus Perruzo (SIKA)

Bill Poriazis, Snowy Bischoff +friend, Tony Manu & Kerry Carr

2004 - Training conferences for top ten clients

As the company's equipment for measuring critically important chemical admixtures became increasingly prevalent in Concrete Batch Plants, the need for annual training sessions emerged. These sessions focused on equipping dispenser managers and field service personnel with the skills for proper installation practices and effective troubleshooting.

Tony Manu with Max Kolasa

Alex Manu with Sika QLD rep.

Mark Benes with Peter Alfred

SIKA / ManuFlo Training Conference at Wetherill Park Sydney 19th Oct. 2004.

Many professionals in this industry dedicated decades to their craft. For example, Mark Benes has been immersed in the admixture industry since 1991, beginning his career at Monier Rocla-Relcrete before moving to W.R. Grace. In 2000, he joined SIKA, where he continues to make valuable contributions to this day.

Pictured:
*The new **MES20-S** with special internal Ryton measuring chamber with Viton seals insert option, designed with a custom injection-mould to suit some of SIKA's new chemical admixtures.*

2004 – Australia wide customer visits

ManuFlo embarked on a nationwide tour, visiting customers across Australia to showcase the versatility and reliability of its equipment for liquid measurement and control. The journey included stops in key cities such as Sydney, Wollongong, Newcastle, Canberra, Adelaide, Melbourne, Brisbane, Gold Coast, Perth and other regional locations, reinforcing ManuFlo's commitment to its expanding customer base.

Over the years, the Manu's earned a strong reputation for product excellence and outstanding customer service. ManuFlo products are now widely used across diverse fluid measurement applications, solidifying the company as a trusted industry leader and the go-to name for flow measurement solutions especially in the Chemical Admixture and Premix Concrete Industries.

L to R: Chris Ramos, Peter Russell, Alex Manu, Rick Wiley, John Madden, Paul Marland. ***MBT-Melbourne May 2004***

Alex with Darcy, John and Grant from ***MBT/BASF Brisbane 2004***

Alex with Allan Webster from ***Boral Concrete Victoria***

Calibration check of Equipment ◄

GRACE

Purchase Order Number 4903

Grace Australia Limited
A.C.N. 080 660 117
A.B.N. 41 080 660 117
391 Park Road
Regents Park Estate, Block M
Regents Park, NSW 2143
Phone: 61 2 9743 8811
Fax: 61 2 9743 8539

INVOICE TO
Grace Australia Pty Ltd.
391 Park Road
Regents Park Estate, Block M
Regents Park ,NSW 2143
Attn. Kerry Carr

VENDOR
Manu Electronics
41 Carter Rd, Brookvale, NSW 2100
Ph 9938 1425
Fax 9938 5852

DATE 2/09/2004

Quantity	Description	
5	MES20 pulse meter heads	TBA
3	ME995-3K	$601.80
1	ME995-1A	$584.80
3	MES32 pulse meters	$600.95
4	MES20 pulse meters	$328.95

2004 - The ME3000 Microprocessor keypad Batch Controller and TMP system

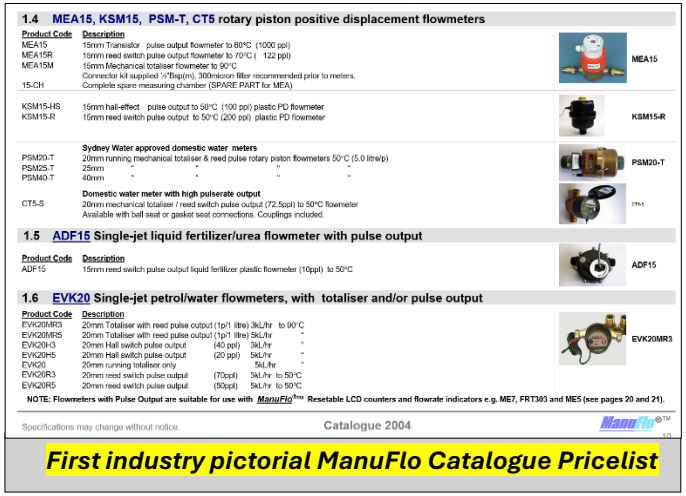
Based on ManuFlo blueprints Benetron was commissioned to design the **ME3000** Keypad Batch Controller, equipped with functionality for batch event logging, ticket printing, and RS232 event downloads to a PC. The unit became available as part of the **TMP** automatic batching and ticket printing system for fluid custody transfers. Designed with the same dimensions as its predecessors, it was fully interchangeable with the **ME995** and even the **ME182A**, dating back to 1982. Customers quickly embraced the **ME3000**, and it gained popularity for use in fluid transfer delivery tankers and fixed fluid transfer installations. Chris Ramos was instrumental in overseeing the project management.

Tony and Alex, show off the TMP system.

***ME3000** AS-lab approved cert.*

▲ *Evolution/Omni Tankers **ME3000-TMP***

ME3000



1.4 MEA15, KSM15, PSM-T, CT5 rotary piston positive displacement flowmeters

Product Code	Description
MEA15	15mm Transistor pulse output flowmeter to 60°C (1000 ppl)
MEA15R	15mm reed switch pulse output flowmeter to 70°C (122 ppl)
MEA15M	15mm Mechanical totaliser flowmeter to 90°C
	Connector kit supplied ½"Bsp(m), 300micron filter recommended prior to meters.
15-CH	Complete spare measuring chamber (SPARE PART for MEA)
KSM15-HS	15mm hall-effect pulse output to 50°C (100 ppl) plastic PD flowmeter
KSM15-R	15mm reed switch pulse output to 50°C (200 ppl) plastic PD flowmeter

Sydney Water approved domestic water meters

PSM20-T	20mm running mechanical totaliser & reed pulse rotary piston flowmeters 50°C (5.0 litre/p)
PSM25-T	25mm " " " " "
PSM40-T	40mm " " " " "

Domestic water meter with high pulserate output

CT5-S	20mm mechanical totaliser / reed switch pulse output (72.5ppl) to 50°C flowmeter
	Available with ball seat or gasket seat connections. Couplings included.

1.5 ADF15 Single-jet liquid fertilizer/urea flowmeter with pulse output

Product Code	Description
ADF15	15mm reed switch pulse output liquid fertilizer plastic flowmeter (10ppl) to 50°C

1.6 EVK20 Single-jet petrol/water flowmeters, with totaliser and/or pulse output

Product Code	Description		
EVK20MR3	20mm Totaliser with reed pulse output (1p/1 litre)	3kL/hr	to 90°C
EVK20MR5	20mm Totaliser with reed pulse output (1p/1 litre)	5kL/hr	"
EVK20H3	20mm Hall switch pulse output (40 ppl)	3kL/hr	"
EVK20H5	20mm Hall switch pulse output (20 ppl)	5kL/hr	"
EVK20	20mm running totaliser only	5kL/hr	"
EVK20R3	20mm reed switch pulse output (70ppl)	3kL/hr	to 50°C
EVK20R5	20mm reed switch pulse output (50ppl)	5kL/hr	to 50°C

NOTE: Flowmeters with Pulse Output are suitable for use with ManuFlo™ Resetable LCD counters and flowrate indicators e.g. ME7, FRT303 and ME5 (see pages 20 and 21).

Specifications may change without notice. Catalogue 2004 ManuFlo

First industry pictorial ManuFlo Catalogue Pricelist

***ME3000-TMP** with **MFS** Mag pump setup, QLD* ▲

Milestones - Rise of Shotcrete and Grout measurement systems

ManuFlo's journey into flowrate indication and totalization for Shotcrete admixture measurement solutions began in the early 1990's with the introduction of **FRT01** and **KGG20** systems for Tylden Equipment. By the mid-1990s, ManuFlo's **FRT02** with **MES20**, and the premium **MFS** 15mm custom-programmed Magmaster became popular choices among companies like Jaycon and Fliwell, who incorporated them into their Shotcrete spray rigs. Many systems for extreme low-flowrates were also supplied for S.E.Asian clients with the **RMS004-M4** Magflows. As liquid grout measurement requirements increased, ManuFlo leveraged its deep understanding of electromagnetic flowmeter principles to select the appropriate models, adjust program factors with field coil frequencies, and enable easy total resets. Coupled with comprehensive after-sales support and service, ManuFlo established itself as the go-to company for grout measurement solutions. Today, its **KMS**, and **RMS** flowmeters for high-pressure applications ensure ManuFlo remains at the forefront as a leading supplier in this field.

RMS integral Magflow ▲

*Grout dispenser rig with **MFS** 25mm ▲*

▲ Shotcrete spray-rig with Manu flowmeter installed.

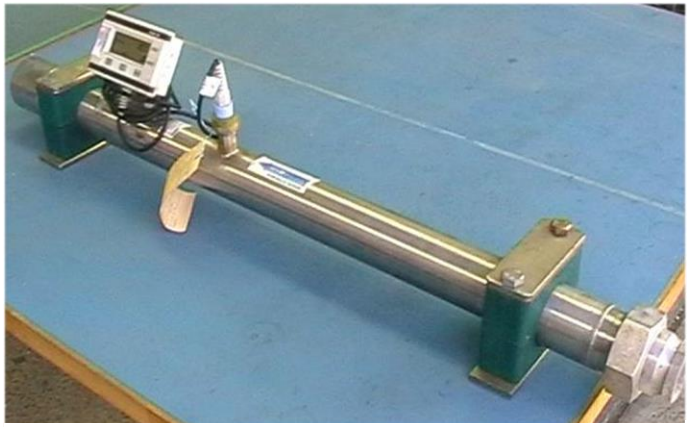
◄ Shotcrete spray-rig with FRT02 and MES20.

*◄ **FRT303-D-SS** + **MM15** wired system.*

***MFS** remote Magflow ►*

Milestones - ManuFlo's Custom Made Product Designs

Tony's exceptional electro-mechanical expertise, combined with Alex's vision, drive, and remarkable talent for identifying application opportunities and swiftly offering tailored solutions for customer needs, led to the development of a wide array of custom-designed products. This synergy became a hallmark of ManuFlo's ingenuity in delivering innovative flow measurement solutions.

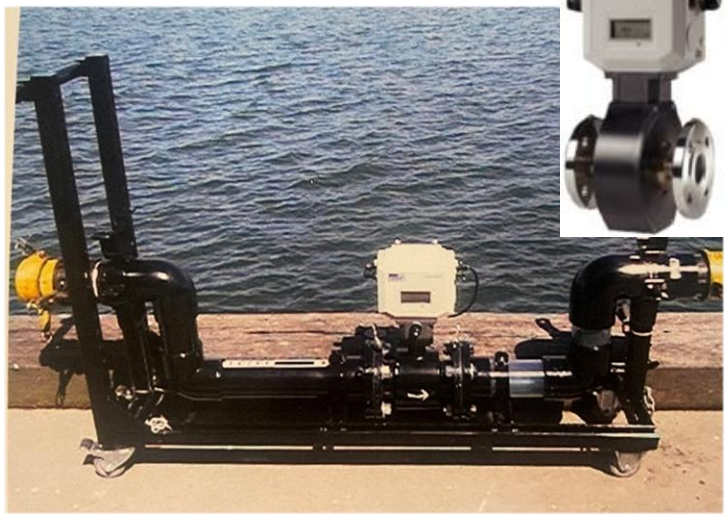


FRT202 *with* ***RPFS-L*** *+****SS80****, custom setup for Sydney Airports Fire Fighters -2002.*

FRT303 *with* ***RPFS-L*** *+****BSPSS*** *- Allied Pumps WA hydrants -2007.*

MRPU-4F-LS-SC250-LS, *Olympic Pool -2012* ▲

ME995-7 *+****HB2510*** *+****SSRW*** *on special dispenser setup, Downer Corp -NSW Railways -2013.*



AQM *AquaMaster with* ***ME5T reset*** *ballast pump rig Melbourne Ports Corporation* – 2006.

ME3000 *+ special remote wand control -2014.*

Milestones – Inhouse factory workshop machinery

Over the decades, production techniques have continually evolved, becoming more advanced and automated. Yet, the business remained reliant on a diverse array of machine and hand tools. Here, we pay tribute to the invaluable machines that have played a crucial role in manufacturing our products, delivering rapid turnkey solutions for smaller production runs.

The Milling machine. Used for milling the diecast alloy boxes for the ME188's and prototyping jobs. ▲

The Pantograph machine, was used for engraving product facias including ME182/188, ME693, ME697, FRT, MES lids, among many other job tasks. ▲

The Lathes were in constant use, for tapping threads, opening copper cans, machining plastics and many other application requirements still used presently. ▲

Bench Drill used for countless drilling and boring applications. ▲

The portable Welder for fabricating new jigs, repairing MRP's and other products. ▲

Power tools include, angle grinding cutters, various drills, jig-saws, circular saws, sanders and more. ▲

The indispensable Vice ▲

Bench Grinder ▲

The countless hand tools. ▲

2000's - The ManuFlo Moto - Work Hard Play Hard

With sometimes half of the day spent at work, the ManuFlo philosophy was simple: work hard and play hard. The job carried a high degree of responsibility, with tight deadlines, rapid technical support demands, manufacturing challenges, and the everyday pressures of operations. Yet, no matter how demanding, it was always important to maintain a sense of humour, there were few dull or boring moments. Growth and success were driven not only by great products but also by great people. Management stood alongside the production team, as such in times of high demand, in the trenches and at the coalface, ready to face challenges together.
Even when needed, Lena Manu remained involved in the business part-time, assisting with assembly tasks, wiring, and preparing rotary selector knobs and switches—she even continued to clean the premises. Eventually, Stefan persuaded Tony (The Boss) to allow her to retire. In honour of her dedication, Tony finally affectionately bestowed her the title: "The Lady of Leisure!"

MANU workplace classic quotes;

Tony:- *"Too many meetings not enough work, If the factory is too clean then we are not busy, beware of salesman wearing ties, The Rota Pulse feeds you".*

Felix:- *"You get that sometimes, Someone's gotta do it, Yes Boss, Work you Dogs".*

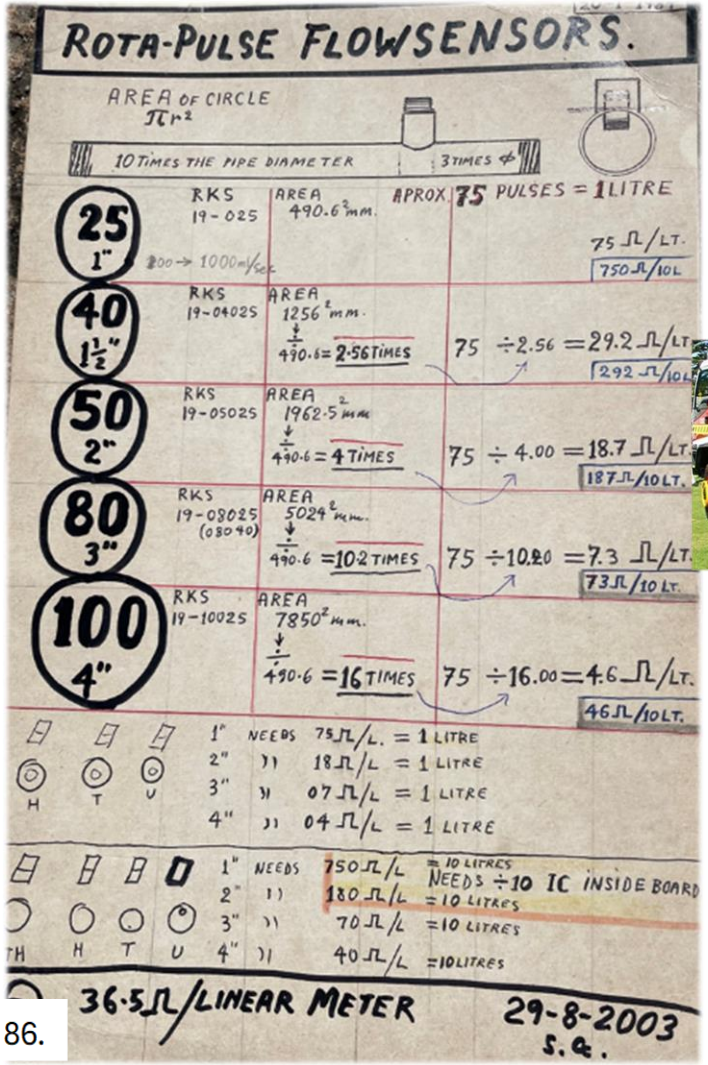
To assist staff*: Felix resided at the Factory weekdays for 10 years during the week and had a cat called Casper who became the staff mascot.*
John also resided at the Factory for some 5 years.

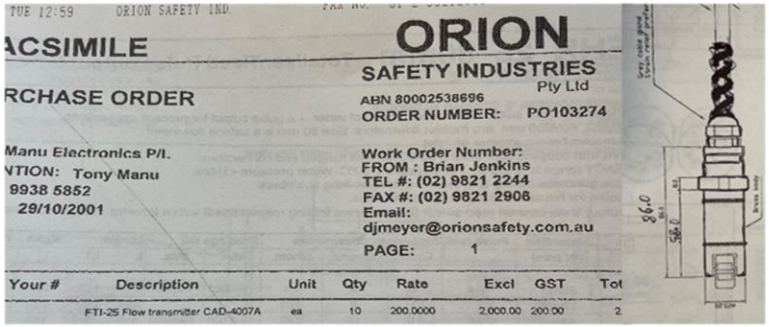
◄ *Tony, Alex & Stephane - factory antics.*

MES20 *flowmeters & Casper the Factory Cat kept rodents* away.

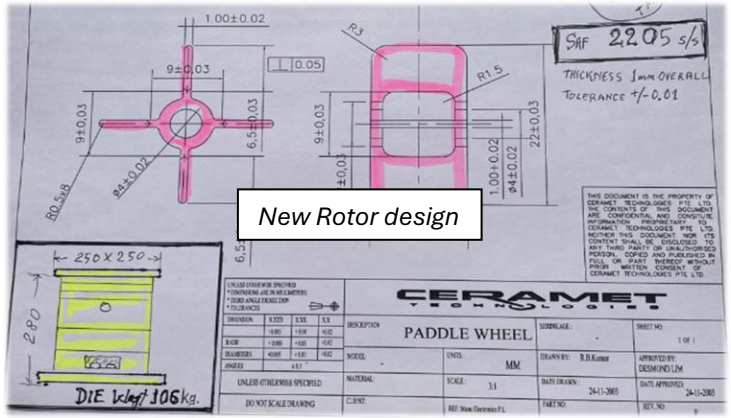
2000's - The Resilience of the Rota Pulse Paddlewheel Flow Sensor

The **RPFS** Rota Pulse Flow Sensor was and continues to be one of Manu's flagship products in the water measurement sector. Over time, the primary **PW** rotor element has been continuously improved and perfected, culminating in the Ceramet alloy design in 2000. New variants were developed and manufactured to meet various application needs. For instance, the custom-designed high-pressure **RPFS-HP** was created for Orion Safety Industries for use in NSW fire trucks, with approximately 500 units produced. In Indonesia, the high-pressure **RPFS-L** with **GAL80-HP-F** and **FRT303** was developed for P.T. Saipem for offshore oil rig platforms. Many more successful applications followed.





***RPFS** Sensors on Fire Trucks and on Oil rig platforms.*



▲ *Range of RPFS pipe adapter fittings* ▼

2000's – The MRPU Flowmeter eval by NSW Agriculture Department

In 2002, ManuFlo was approached by the NSW Agriculture Department to evaluate the **MRPU5** and **MRPU8** for potential statewide use by farmers in irrigation siphon applications using Polypipe saddle-clamps. Unfortunately, this major opportunity was lost when it was later discovered that the poly saddle-clamps were buckling and reducing pipe bores, which affected the accuracy of the readings. Simply using a **GAL** pipe section would have resolved the accuracy issues. The overstretched resources at ManuFlo contributed to this missed opportunity at the time.

DETERMINING THE ACCURACY OF PADDLE WHEEL TYPE FLOW METERS IN IRRIGATION SYPHONS

Authors: P.A. Weldon, Senior Technical Officer (WUE),
NSW Water Use Efficiency Advisory Unit, Dubbo NSW.

E.M.K. Joshua, Water Use Efficiency Officer
NSW Agriculture, Dubbo NSW

ABSTRACT:

This paper describes an experiment to examine how the accuracy of paddle wheel type flow meters is affected when installed in irrigation syphons. An experiment was conducted to assess the variation that would occur when a meter was operated with axial orientation different than that of its horizontal installation during factory calibration. In December 2000 an experiment was conducted using the ManuFlo™ MRP series paddlewheel flow meters, at the irrigation appraisal facility of the Murrumbidgee College of Agriculture, Yanco. The experiment was conducted using nineteen ManuFlo™ MRP series meters that were each, in turn, installed on the same test syphon. An electronic weighing system was constructed to quantify the volume of water that passed through the syphon during a test sequence. Three volumes of water were passed through the syphon from a supply tank kept at constant head, into a collection tank on load-cells. The load-cell outputs were recorded electronically while the readings from the flow meters were recorded manually and later analysed against the weighing system results. For any given meter repeated measurements were generally consistent but accuracy was highly variable. Only five of the meters tested recorded accuracies better than ± 2%, as stated in the manufacturer's specifications. The level of variation between individual meters precluded development of a calibration equation that could be generally applied. Discussion of the results of this experiment with the manufacturer led to collaborative work to identify and correct the cause of the variations reported. This additional work with the manufacturer identified the saddle mountings, used to mount the meters during the tests as the primary source of measurement variation. Consequently the method for mounting ManuFlo™ MRP meters in irrigation syphons was revised, producing more repeatable results in line with the manufacturer's specifications.

INTRODUCTION

The Water Use Efficiency Unit (WUEU) at NSW Agriculture's Dubbo office purchased a number of ManuFlo™ MRP series flow meters in June 1999. These meters were to be used in evaluating the water use efficiency of various crops on different soil types. The meters arrived from the manufacture with one calibration certificate which identified the meters by serial number and stated identical calibration (± 0.5%) for a horizontal installation.

Prior to deploying the meters in the field, it was decided to examine the variation in measurement accuracy that could be expected when the meters were installed in irrigation syphons. Information supplied by the manufacturer stated that variation of some 6% was to be expected if installed contrary to the calibrated alignment. Irrigation syphons are laid over channel banks with their shape closely resembling that depicted in figure 1. As such the meters were not expected to be aligned horizontally and as a consequence the meters would display a result offset from the true value. Where appropriate this offset would be corrected following the manufacturer's procedure.

Figure 1 Flow meter evaluation System

MATERIALS

ManuFlo™ MRP series flow meters are an inductive pick-up type meter using a rotating paddle wheel immersed in the flow medium as the metering device. These devices are calibrated to register 1 unit of flow for *n* wheel revolutions in a specified pipe diameter, within a specified flow range.

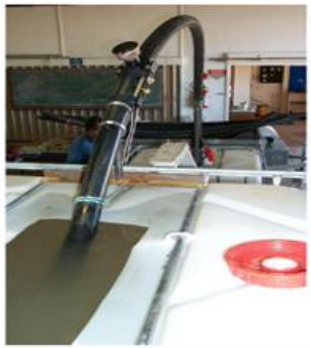


Figure 2 Supply end details

The ManuFlo™ MRP series flow meters have an in-built facility to perform a re-calibration of meter sensitivity. This allows the same meter to be utilised in different pipe sizes. The flow meter sensitivity is readjusted via a series of decade switches (HTU) that are accessible inside the meter body.

The system used in the assessment of the flow meters consisted of a supply tank, collection tank, four load-cells, four load-cell amplifiers, data acquisition card, portable computer and a 4.0m long 0.057m internal diameter syphon (see Figure 1).

The supply tank, a 1m^3 'Schutz' bulk liquid container, was placed on a bench to create a head of approximately 0.4m, which was kept constant by allowing the inlet water supply to exceed the syphon withdrawal rate. The excess supply overflowed the rim of the tank thus maintaining constant head. Some modification to the top of the supply tank was required to allow the free flow of excess water (see Figure 2).

The collection tank was also a 1m^3 'Schutz' bulk liquid tank. The top of this tank was also modified, this time to allow the collection of water without spillage, and to ensure the syphon and associated equipment did not impinge on the weighing system. This tank was supported by a weighing system consisting of four load-cells (see Figure X).

Load-cell outputs were amplified using isolation amplifier modules, with a bandwidth of 4Hz. Amplifier output was then digitised using a data acquisition card. Isolation amplifier power was provided via a 0-30VDC bench-top power supply set at 5V. National Instruments LabVIEW software was used in the collection of data.

METHOD

One syphon for all meters was used to ensure minimal variation in conditions occurring between meter tests.

The unit under test was placed one metre from the syphon inlet, this resulted in the meter being rotated about its "Z" axis (see figure 3) by approximately 35° to 40°. There was an additional axial offset of approximately 5° to 10° about the "X" axis as a result of installation restrictions. This rotation about the "X" axis is expected to be anywhere between 0° and 45° or more under field conditions. There was no rotational offset about the "Y" axis, as all meters were tested in the condition as supplied in the saddle mounts.

Once the meter was installed, the syphon was primed and clamped back onto its supports. Fitted to the delivery end of the syphon was a 0.075m diameter ball valve to facilitate priming and control delivery to the collection tank. This valve at the outlet was then turned on until full syphon flow was established. Any discharge at this point was allowed to drain from the collection tank.

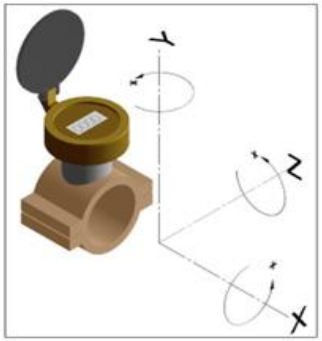
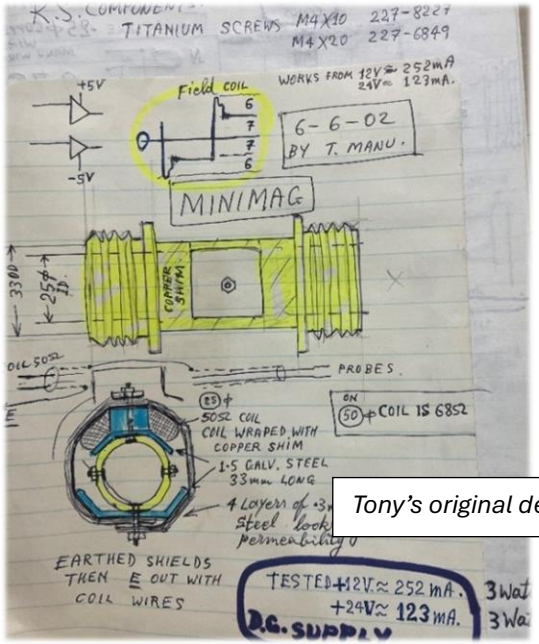


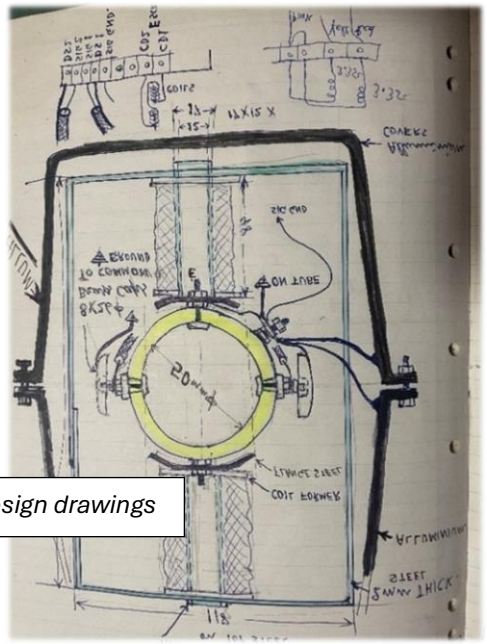
Figure 3 Flow meter axies of rotation

2000's – Research & Development - ManuMag Magnetic Flowmeters

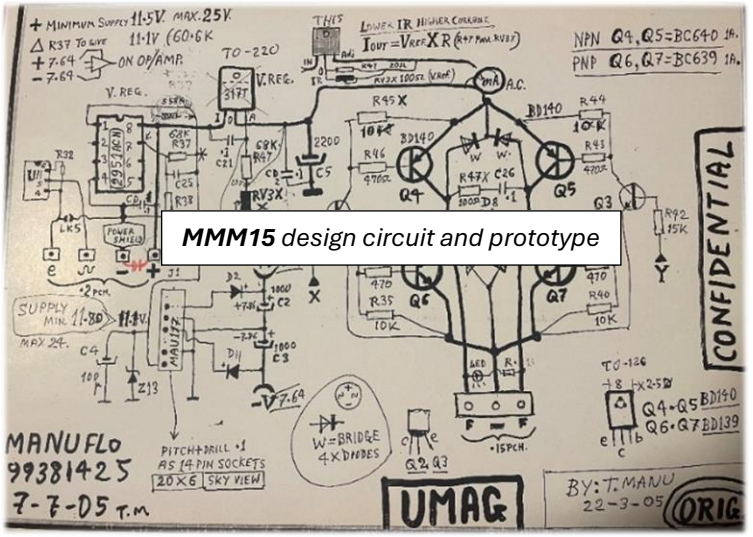
Tony and Alex observed the emergence of insertion Magflow devices in the early 1990s, which inspired them to conduct their own research on these technologies. This research culminated in the design and market launch of the **MM100** ManuMag—a 100mm Ø full bore device—in 2002. The introduction of this product prompted ManuFlo's Magflow suppliers to freeze costs, allowing ManuFlo to continue purchasing the **MFS** units rather than taking on the manufacturing responsibilities.

In 2006, ManuFlo introduced the **MMM15** Manu-MiniMag, a smaller 15mm device. Approximately 25 units were produced before ManuFlo opted to shift to more cost-effective overseas agency alternatives, reflecting the company's adaptability to economic and market conditions.

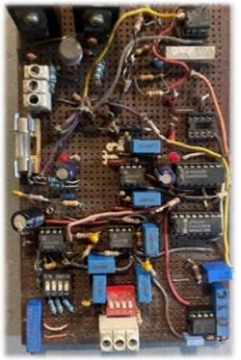


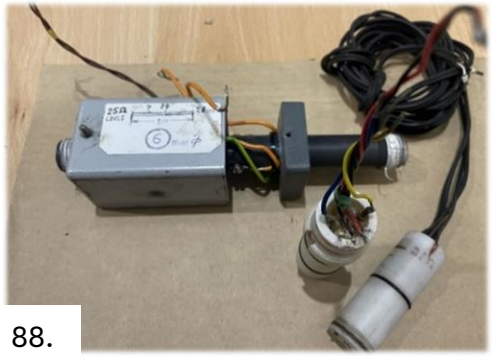


Tony's original design drawings

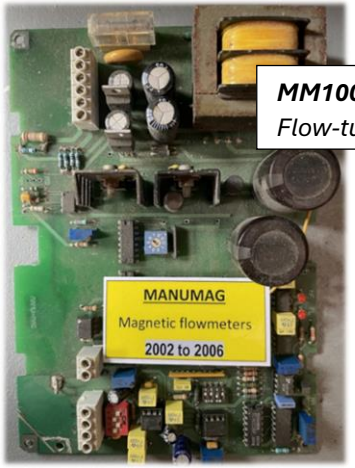


***MMM15** design circuit and prototype*





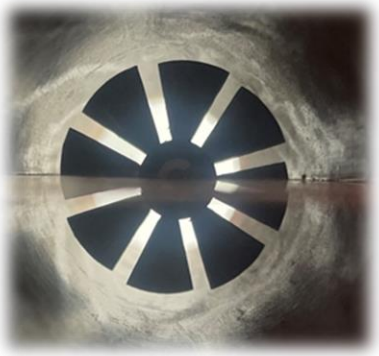
◄ *Original Full bore 15mm flow-tubes and insertion types.*



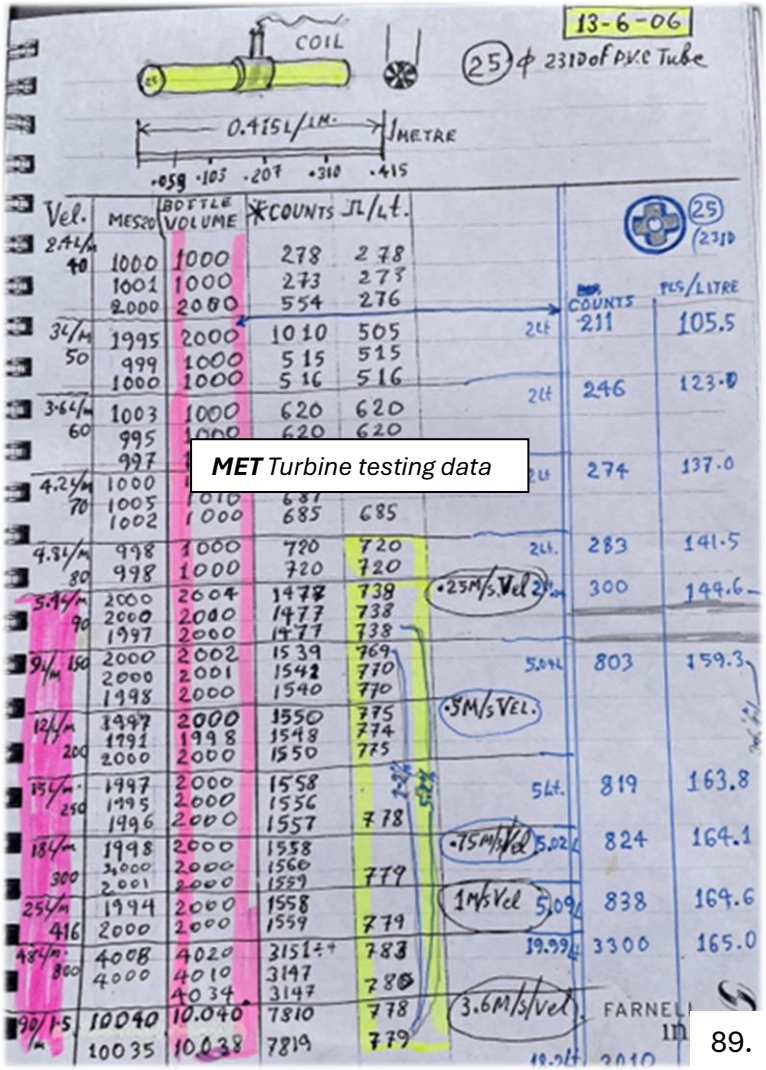
***MM100** ManuMag PCB with Flow-tube*

2000's – Another Revolutionary ManuFlo design - The MET Pulsed Induction Turbine Flowmeter

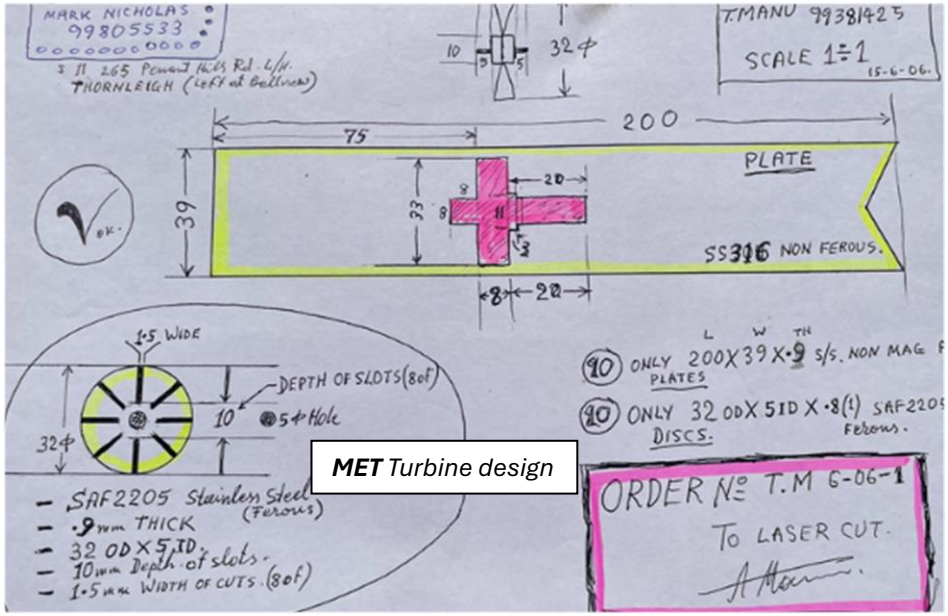
In 2006, ManuFlo recognized the need for an affordable, locally manufactured flowmeter that could deliver reliable performance at low to medium flow rates for specialized irrigation applications. Additionally, it was essential for the device to provide a volt-free high rate pulse output, enabling usage at remote sites with limited access to power. As a solution, Tony designed the **MET25** and **MET40** turbine flowmeter, available in pipe sizes of 25mm and 40mm. These flowmeters proved ideal for pairing with the **FRT303-B** battery-powered Rate/Total indicator, offering versatile functionality for a range of irrigation applications.



Internal Induction Turbine



***MET** Turbine testing data*



***MET** Turbine design*

Turbine insert element

2005 – Manu Kids, Video Going with the Flo

Just as Alex spent time after school gaining exposure to the family business, he wished the same for his children—to instil strong ethical work values and prepare them for a possible future within the company. On some afternoons after school, they would walk to the factory, greet their mother and assist with light production duties, where Felix fondly greeted them as the "little princesses."
Even after 40 years, the business remained family-oriented, now welcoming its fourth generation. Laura Manu played a key role in the company's first venture into online promotional videos, starring in the "Go with the Flo – So Simple to Use" campaign, launched on the Vimeo platform.

vimeo

ManuFlo promo

This is "ManuFlo promo" by ManuFlo on Vimeo, the home for high quality videos and the people who love them.

vimeo.com

2005 - Pumps, valves and miscellaneous items added to the catalogue

As clients requested more turn key one stop shop solutions from ManuFlo, the company introduced a range of pumps, valves and hardware items for flow measurement application plug-and-play systems. This was especially useful for smaller remote regional customers.

Butterfly Valve

Diaphragm Valve

Centrifuge Pump

Shielded Cable rolls

Y-strainer Filters

Gate Valves

2005 – The ME2008 interface card designed to meet industry trends

The construction chemicals industry was again evolving with an increased number of admixture options prevalent in the Concrete Batch plants. This progress necessitated the expansion of the **ME2000** six-channel card, leading to the introduction of the **ME2008** interface batch safety card. This upgraded unit allows control of up to eight chemicals via flowmeters and remains the preferred batch safety device for concrete batch plants using ManuFlo **MES** and other flowmeters to dispense additives. To date, over 1,500 units have been manufactured, underscoring its reliability and widespread adoption.

Concrete is integral to the functioning and development of modern society. It supports essential infrastructure, promotes economic growth, and improves the quality of life for billions of people worldwide. The strength, durability, resilience, safety, and cost-effectiveness of concrete make it indispensable for constructing critical infrastructure, with ManuFlo solutions deeply intertwined with the industry.

◀ *Team ManuFlo – 2005.*

ME2008

▲ ***ME2008*** *with CAT5E program panel, as originally suggested by Wade Moir.*

2006 - ManuFlo re-commences worldwide customer visits

With the organic growth of its international markets, it had become essential to launch a new initiative to engage with key customer contacts. At the forefront were sales and equipment training presentation programs, with a particular focus on China, Hong Kong, Malaysia, Singapore, Taiwan, Thailand, Vietnam, Fiji and New Zealand.
To support these efforts in promoting the Australian-made ManuFlo product range, in 2006 the business successfully applied for and received an Export Market Development Grant (EMDG).

Australian Government
Australian Trade and Investment Commission
An Australian Government Initiative
ENTERPRISE CONNECT
www.enterpriseconnect.gov.au

AUSTRALIAN MADE

W.R.Grace-HK – Chris Ramos, Alex and Mr Chow- Dispenser Manager and technician servicing team

Grace Thailand – Mr Photh and Alex

*Inspecting **ME995's** at a Batch Plant in Vietnam*

Master Builders Tech Managers-Vietnam

2006 – ManuFlo Strengthens Connections Across Asia

After nearly a decade of building strong client relationships, ManuFlo embarked on a whirlwind tour across Asia, meeting face-to-face with its valued partners and reinforcing its commitment to long-term collaboration.

The W.R.Grace Singapore Team with NK.Chua.

Alpa Excel Eng. Thailand with Phichet.

W.R.Grace Malaysia Team with Rina Tan.

Chris and Alex with Fosroc Malaysia.

Degussa (MBT/MBS) Malaysia with Rosli Idris and the team.

Degussa HK with Mandy Mo and Ree Yu.

2006 – ManuFlo's Asia-Pacific visits continue

As ManuFlo's presence expanded across South-East Asia and the Pacific, relationships deepened through meaningful visits with key customers and personnel. These visits were also about obtaining an overview of the nation's history, people and culture to gain a deeper appreciation, respect and knowledge. Wherever time allowed, a point was to experience local cuisine and visit historic sites.

Meeting Degussa (BASF/MBT/MBS) Singapore.

With the Sika Vietnam team.

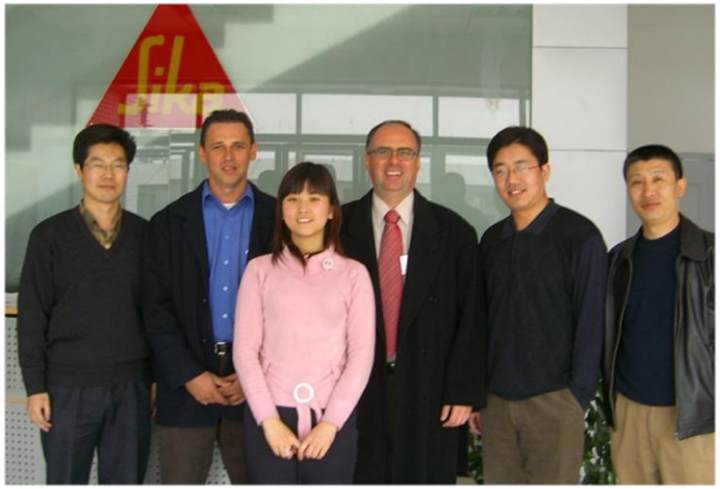
With the Sika Singapore GM.

With Batch-Tec Singapore engineers.

2006 – Worldwide customer visits wrap

The various overseas sales, fact-finding, and training visits proved to be a resounding success during the whirlwind three-week tour. Meetings were held with ManuFlo's major admixture customers—Fosroc, Master Builders / Degussa, W.R. Grace, and SIKA—along with reseller agents across several countries, including New Zealand, Hong Kong, Thailand, and Malaysia.
Periodic visits to all our major customers also continued to Adelaide, Brisbane, Melbourne, Perth, Sydney and regional areas.

MBT Chemical blending plant -Hanoi 2006.



SIKA – Beijing China 2006.

SIKA- Auckland NZ – Murray, Alex and Chris Harnett.

Grace Hong Kong -MES25 with ME188 and ME995 installations

ME188-6** and **ME995-6

W.R.Grace Shanghai China – Chris, Mr Zhou and Alex.

2006 – New Trade Waste Water Sampler

Neal Martyn, formerly of the Sydney Water Board Trade-Waste division, approached ManuFlo to design a new Water Extraction Sampling Machine. The result was the Auditor-2, featuring an inbuilt peristaltic pump system, the intelligent all-in one solution becomes popular.

A testament to the versatility of the **ME2008** product was a specially designed **ME2008-FT** unit with custom software developed for Manly Water Slide Park. This unit, paired with **RPFS** flowmeters, effectively monitored water flow rates and volumes for the water slide pumps.

Phil, Tony, Alex & Chris. ▲ *Stephane and Nick* ▼

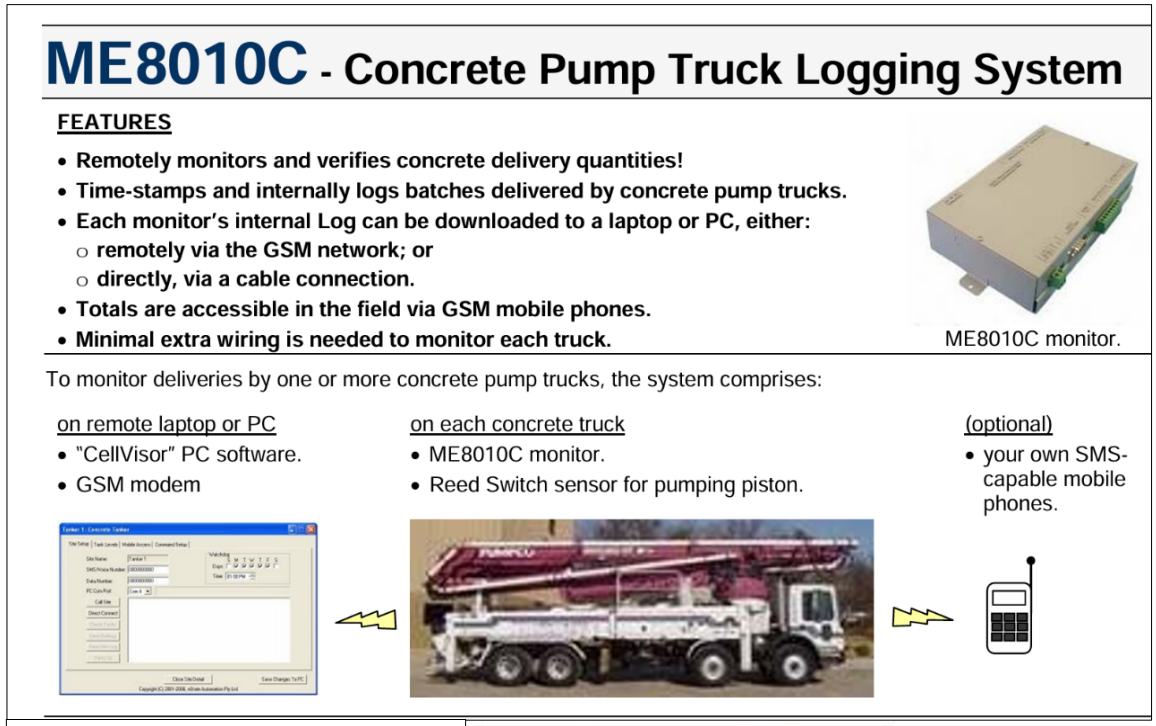
The new LCD oscilloscope ▲

Manly Water Works site ►

2007 – The ME8010 revised Tank Level System

The demand for a comprehensive admixture tank level and monitoring system in Concrete Batch Plants remained high, with significant potential. In response, ManuFlo introduced the **ME8010** (an upgrade from the previous **ME8000**), featuring improved software, hardware and communication capabilities. However, the implementation faced several challenges with the access required to integrate with customer IT department firewalls, and limited support from the co-developer.

After 18 years at ManuFlo, the company faced a very difficult period when Hannele Manu left the operation. This departure opened the door for Vicki McNaughton to join the company as the new Accounts Office Manager.

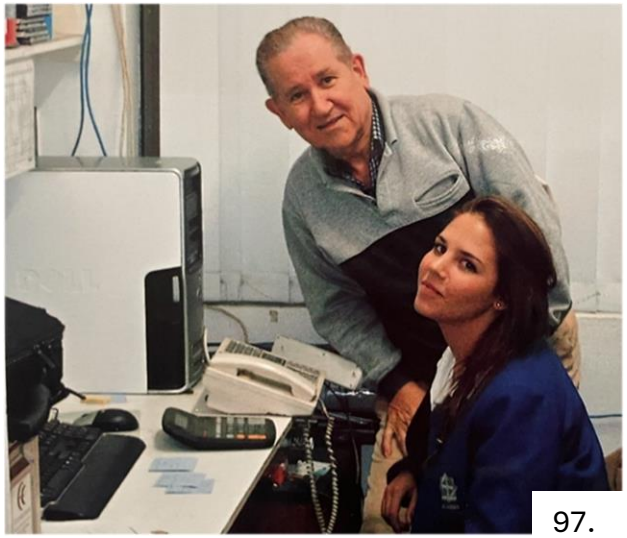


*The **ME8010C** was an Australian first designed product to measure and log volumetric dispensing of pre-mixed concrete from concrete boom pumping trucks.* ▲

New Office Manager - Vicki. She begins a much valued 18 year career with the ManuFlo ◄

Milestone: In 2007 sales reach $2.56m

2007 - The first touch screen Apple iPhone ►

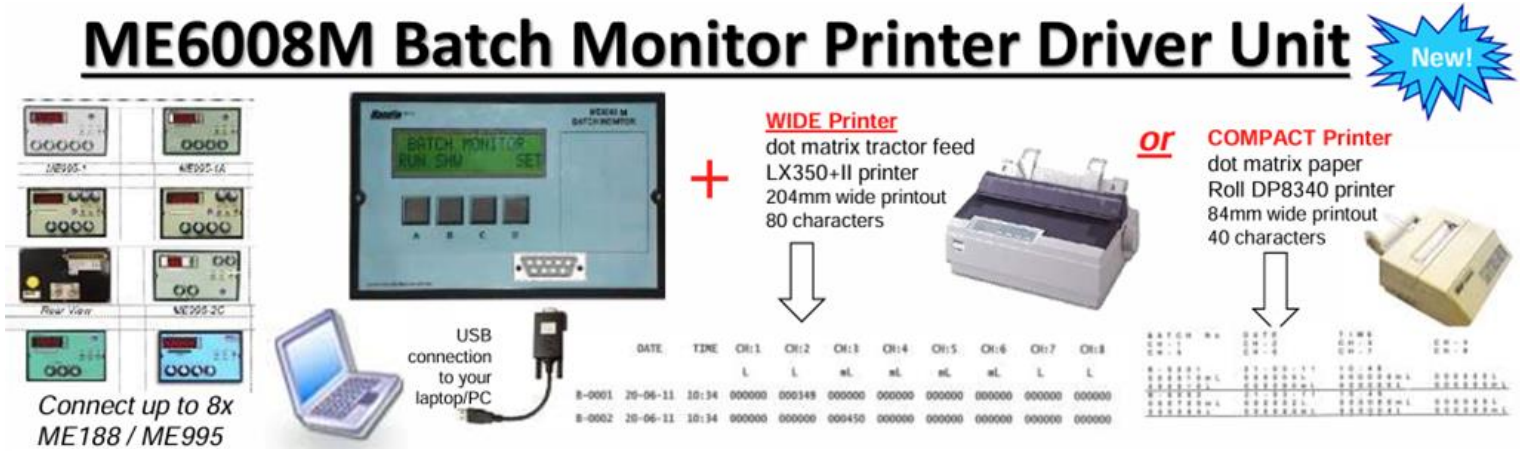


The Big Boss with Hannah Manu in the front office ►

2008 – Innovative application needs drive the Development of ME6008 and TMP1

As quality assurance requirements continued to grow for non-computerized regional concrete batch plants, ManuFlo designed and introduced the **ME6008** batch monitor. This advanced system records the batching of water and admixture dispensing for up to eight products simultaneously, providing both a log and, if needed, a printout.

Additionally, the **ME6008-1** variant—a specialized single-channel unit—was integrated with the **TMP1** batch ticket printing system. This setup facilitates manual custody transfer applications using flowmeters in fixed-site operations and delivery tankers.



ME6008M-FP ▲ ***TMP1*** *system.* ▲

Regional Batch Plant in Moree NSW

Batch Room at Hanson Temora NSW

The GFC impacts the world in 2008, the company experiences a 60% sudden drop in sales, it takes 6 months to return to pre-GFC sales figures. Yet the GFC is just a blimp in ManuFlo's future growth path.

2008 to 2018 - A decade of Promotions; Miss World , Golf , Kayaks, Boats and more

ManuFlo has always had a policy of engaging with its clients, promoting the brand name in various forms over the many years. Various trinkets, lunches, hosted dinners and events were staged, including 2008 Miss World Australia Sponsorship, 2014 Roosters golf day, Kayak and Boat corporate banners and industry golf days. The motto ManuFlo -Flow Measurement Products -going with the flow and continued to provide premium customer support with conviction and a smile.

Miss World Australia 2008 promotions.

Alex and Phil King at industry golf day.

The once very popular ManuFlo Girlie Calendar.

Roger & Alex at Roosters Golf Day.

The ManuFlo speedboat.

Damien & Alex with ManuFlo Kayaks.

2009 – Manu's strategic association with ABB grows

Manu Electronics' association with Asea-Brown-Boveri (ABB) began in 1990 with the MagMaster **MFS** electromagnetic flowmeters added to its product range. In 2009, ManuFlo expanded its range of flowmeters with the introduction of the **FMS-TW** Water-Master. The product was unveiled in collaboration with ABB at the Sydney Water Plumbers Conference in Blacktown Sydney, where its capabilities were showcased with a focus on the Trade-waste water sector. The launch was followed by introductory seminar days with Sydney Water Tradewaste officers, ensuring the product's features were thoroughly demonstrated and understood.

To enhance customer experience, ManuFlo customized the **FMS** flowmeter, ensuring each unit was fully wired with MIL-spec plugs and wet-tested. This innovative approach allowed ManuFlo to strengthen its foothold and make inroads into the Trade-Waste water markets.

Showcasing ManuFlo & ABB products at the Sydney Water plumbers conference.

Presentation for Sydney Water Trade-Waste officers. ►

Promotional gift items

***FMS-TW** Mag-meter*

2010 – ManuFlo returns to the Sydney Water Plumbers Conference

ManuFlo returned to the Sydney Water Plumbers Trade Day Conference, partnering once again with ABB—this time at the Novotel Brighton-Le-Sands. The **FMS-TW** Trade-Waste Manu-spec'd flowmeter took centre stage at the event, showcasing its industry-leading capabilities. ManuFlo also took the opportunity to display some of its other flowmeter products. Phil Manu was now the company's Trade-waste annual site calibrations specialist servicing over 100 sites annually throughout the greater Sydney area. The annual service was and still is a compulsory enforced Sydney Water requirement and becomes an excellent repeat revenue stream for the business.

Philip with Maria at the ManuFlo display stand. ▲

Alex and Phil Manu with Steven and Ricky from ABB. ▲

2009 to 2010 – Factory / Office premises upgraded and revamped

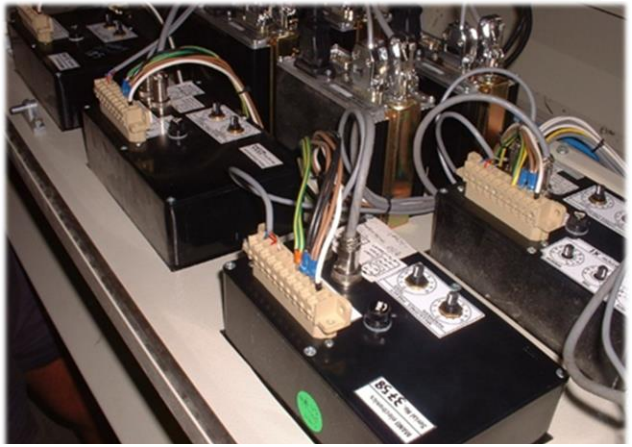
The factory underwent an external facelift, featuring newly rendered concrete walls and a fresh coat of corporate-coloured paint. Inside, a newly added office connected seamlessly to the modern presentation meeting room, where training sessions and sales courses could take place. The entire space was fitted out with laminated flooring for a refined finish.

At the rear, the garage was transformed into an employee recreation room, with a sectioned-off private rest area for staff. Tony Manu, still involved part-time, was entrusted by Alex with the task of building an upstairs quarter as an alternative to the originally planned large first-floor extension. Tony constructed the staircase and partitions, eventually creating a living space for employees in need of accommodation.

Vicki -pointing out ManuFlo's poster promo.

Freshly renovated factory premises. ▲

Future 2nd level concept ▲



▲ *Rear **ME995** with **MC2** interfaces for PLC command*

***MES20R-S** with Tefzel liner ▲*

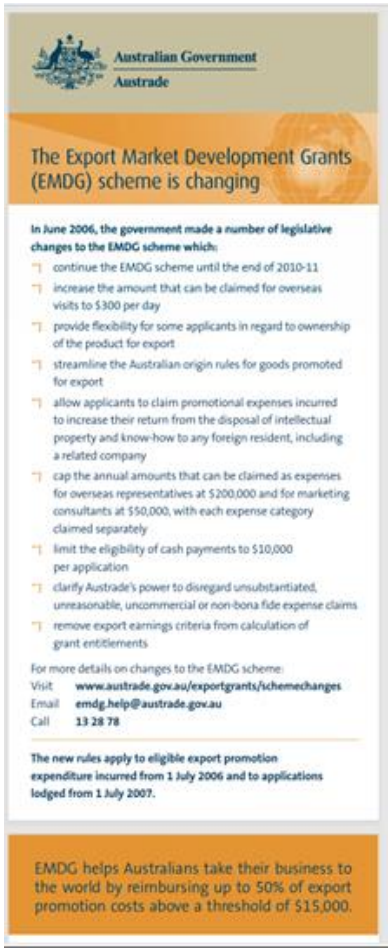
Concrete slab formwork for new factory parking. ►

2009 and 2011 - Visits to Middle-Eastern customers

In 2009, to support the rapidly expanding Middle Eastern markets, Alex and Chris embarked on pivotal customer visits to the United Arab Emirates and Saudi Arabia. Their entry into this sector was facilitated by introductions from Steve Dyball, an expatriate who had long trusted the ManuFlo product range, dating back to his tenure at MBT Australia in the 1990's.
The trip culminated in a visit to the Cannes Film Festival, where Alex and Chirs had made an investment in the film industry.

Dubai on the rise ◄

EMDG ►
Gov. grant.



Alex discussing with plant engineers, with Steve Dyball observing in background. ◄

Dubai Airport Taxi dash ►

Steve, Alex, Chris with Engineers ▼

2011 - Visits to Middle-Eastern customers

Alex and Chris returned to the UAE, visiting Fosroc, BASF / MBT, Sika, and W.R. Grace (GCPT). During their trip, they conduct training sessions for customer engineers and inspect products installed in admixture production plants and tanker transport loading bays. These include ManuFlo products such as **ME995-7**, **ME3000**, **MFS**, **PMS**, **RMS** magflows, **RPFS** and **RPFS-H** sensors, and **TMP** systems.

Alex with Don Morass -Fosroc Dubai plant manager ◄

***ME995-7's** at the Fosroc Dubai Admix blending plant ►*

Alex and Chris with SIKA Dubai staff ►

***ME3000-TMP** at SIKA admix plant. ◄*

▲ *Manu's Miss World PR campaign with **RPFS** test.*

2011 – Overseas Visits continue - Films and Flowmeters

The UAE trip also includes a visit to the Abu Dhabi Water Authority, which installs over 100 ManuFlo CT5-S 20mm water meters equipped with dataloggers for a comprehensive residential water usage study. The findings from this study play a crucial role in determining optimal peak operation times for desalination water plants. The journey also includes a return to the Cannes Film Festival, facilitated by Alex's private company, Phalanx Corporation, as part of the entry venture.

ABU DHABI UAE WATER STUDY*- The REUW Project is the first of its kind in the U.A.E. The information gathered provided a real insight into the actual day-to-day use of water in a typical residence in a gated community. The project abled to disaggregate participating households' water consumption for each end-use event and each appliance, determine average consumption per capita and per household and examine factors influencing water use." The project lasted over a year. Households were recruited in the second quarter of 2013 when a basic survey and installation of a smart water flow meter and data logger were carried out. Data was collected and was then analysed using flow trace analysis software.*

CT5-20S *water study meter*

ME3000's and Magflows at an Admix Tanker dual loading site in Dubai.

Phalanx-Films

Chris & Alex celebrate the company sponsored film -Blind Date- successful entry in the Cannes Film Festival Awards. ▼

2011 – First visit to the Philippines.

For the first time, Alex and Felix travel to Manila, Philippines, to meet with major Admixture Chemical and Concrete Batch Plant customers. ManuFlo products were already well established in the region, the visits reinforced the company's strong presence in the market.

Felix with Benjamin and Grace personnel ▲

Agent: L.G.Atkimson -Father and Son with Felix and Alex ▲

Holcim Concrete Batch Plant -Manila ▲

ProChem staff with Alex and Felix ▲

*Felix Inspecting the Holcim truck fleet and **MRP20-T2** resettable flowmeter at the Slump-Stand ▲*

2011 to 2012 – Back to South-East Asia

With business booming across South-East Asia, Alex with his Chinese speaking partner, continue regular customer sales and training visits to the region, with further visits to Hong Kong, Mainland China, Taiwan and Malaysia, then Vietnam, Fiji and New Zealand. Plans are in place for customer visits to South American, Pacific and European customers. Tony Manu whilst on an extended vacation in Europe manages to visit the company's eastern European sales agent Anvitech in Bulgaria. ManuFlo then awards Derwent Instruments as its UK sales agent.

As always, the Manu's were tough, resilient, economically mindful, and resourceful -and so were their staff. Traveling with energy drink in hand, they were ever-ready to tackle the day's rhythms: engaging clients, training, wining and dining, and forging business bonds .

Alex Manu with Alex Chow and WR.Grace staff, with eight ***ME2000*** *units installed at a dual alley batch plant in Kowloon.* ▲

3 x ME2000's with a HK based PLC system ▲

Felix & Alex welcomed by Filipina beauties ▲

MRP20-T2

In transit to the customers in HCM Vietnam ▶

Firth Christchurch Concrete Plant NZ, with ***ME2008***, ***MES25's*** *and* ***MRP20-T2*** *on trucks.*

2012 – The Liquid Flowmeter Doctors

As customers introduced an increasingly diverse range of liquid admixture chemicals with varying compositions, the demand for compatibility testing grew. Evaluating customer liquid products became a standard procedure, encompassing assessments of viscosity, density, flow rate performance, material suitability, and chemical interactions. In some cases, long-term time capsule tests were conducted, lasting over a year. The resulting data was then provided to customers, enabling informed recommendations on the most suitable ManuFlo product for fluid measurement.
One of the greatest challenges emerged when testing hard-to-handle colour oxides with magnetic flowmeters for Mark Benes from Sika, requiring meticulous analysis and adaptation.

The company's founder, Tony Manu, officially retired in 2011 but continued to make visits to the factory for many years, maintaining his connection to the business and its ongoing developments.

Tony congratulates Alex on successful testing of liquid oxides.

Fluid Conductivity testing.

	A	B	C	D	E	F	G
1	SIKA OXIDE TESTING FINAL TESTING AND RESULTS						
2							
3			Magmaster MFS25			MES20-S	
4			Cal. PPL	acc.		Cal. PPL	acc.
5	SIKA RED		100.2	+/- 1.3 %		975	+/- 1.3%
6							
7	SIKA YELLOW		107.1	+/-1.95 %		102.5	+ / - 2%
8							
9	SIKA BLACK		132.7	+/- 0.77 %		941	1.5%
10							
11	SIKA LIGHT RED		101.9	+/- 1.5 %		1005	1.17%
12							
13	SIKA WHITE		NEED MORE CHEMICAL TO TEST PROPERLY				
14				+/-1% ??			
15							

A large selection of chemicals undergoing material suitability time capsule testing.

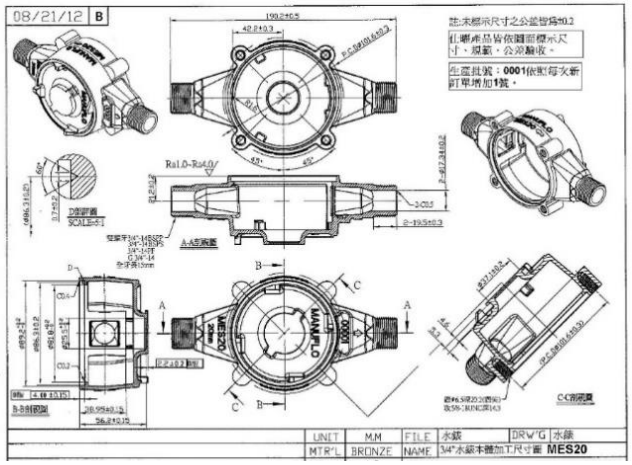
2012 – New Products join the Lineup

To capitalize on emerging application opportunities, ManuFlo expanded its product range by incorporating a selection of custom-produced devices, including the **AMM** series of compact electromagnetic pulse flowmeters and the **SMP** LCD magnetic flowmeters.
The flagship **MES20** admixture pulse flowmeter undergoes further refinement, with a new foundry dedicated to casting and machining its gunmetal body.

Following Tony Manu's recent full retirement, ManuFlo hires Wilson Alba as the new full-time inhouse electronics technical engineer.
A new **3D** kit printer is purchased and meticulously assembled by Mark Hopkins, becoming a highly useful tool in development and production processes.
It became invaluable for prototyping plastic components and casings. Bon, Charsen and Felix are the core inhouse manufacturing team.

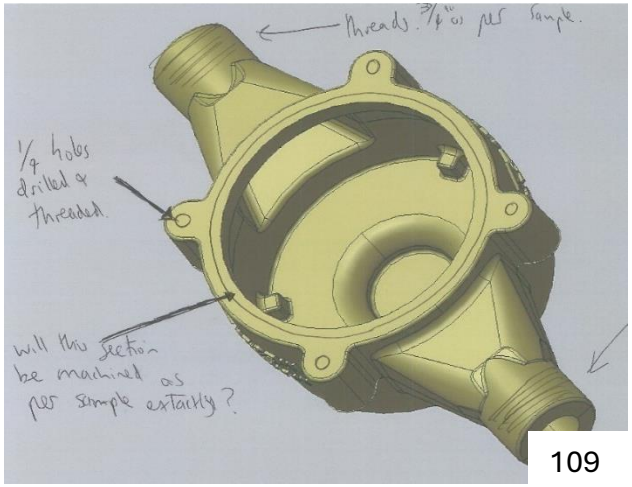
2012 Team ManuFlo -Bon, Charsen, Wilson, Felix, Alex, Chris and Vicki. ▲

***3D** Printer*



*Refined **MES20 body** casing CAD drawings.*

3D printed J-Box
R&D prototypes ▲



◄ ***AMM** Magnetic Flowmeters.*

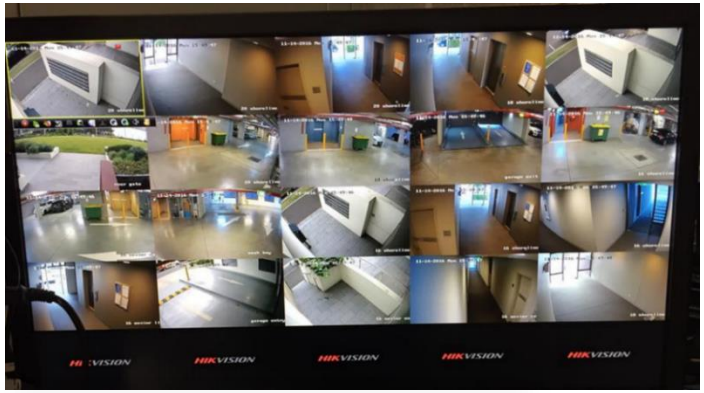
***SMP** LCD Magnetic flowmeters* ►

Milestones - Bold New Ventures: From ManuFlo to ManuSafe and EziFlow

Stephane began his journey with the Manu's in 1992, working part-time before officially joining Manu Electronics full-time from 1994 to 2000. After a brief hiatus, he returned in 2002 and served as ManuFlo's lead technician until 2011. Over a total of 15 dedicated years, Stephane became a cornerstone of the team and a trusted technical mind. In 2013, he charted his own path by founding Eziflow, an electrical company whose name pays homage to his ManuFlo roots. To this day, Stephane remains one of ManuFlo's revered original employees from its foundational era—a symbol of commitment, ingenuity, and legacy.

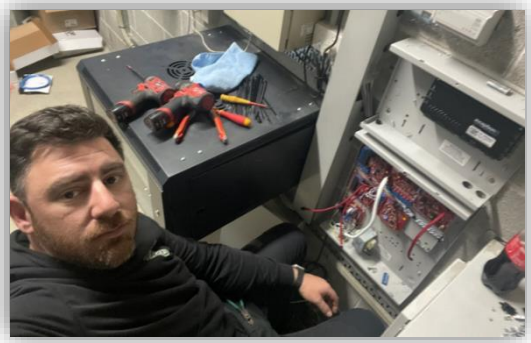
After joining ManuFlo in 1998 and dedicating 13 formative years to the business, Phillip Manu made the decision to chart his own path. In 2012, he founded an electronic security supply and installation enterprise—first named ManuSafe, later rebranded as Silver Line Securities.

From the ground up, Phillip built the business, developing expertise across a wide range of advanced security technologies. Over the next 12 years, he spearheaded numerous projects, delivering tailored electronic security solutions including Access Control, CCTV, Alarms, and Intercoms. Sadly, in 2024, a tragic turn of events brought an abrupt end to the venture. Though its operations ceased, the legacy of Silver Line Securities—and Phillip Manu's unwavering spirit—continued to echo in the lives and institutions he helped protect.



ManuSafe Security Systems

SILVERLINE SECURITY



Phil Manu on the job.

July 2023 — Phillip and Alex with young Alexander Manu Jr., poised for his golf game. ▲

Ezi flow electrical

Stephane Grange and EziFlow electrical

Milestones – Customers, Suppliers, Couriers, Friends and Family at the Factory

ManuFlo had evolved into a professional operation, yet it remained a welcoming hub for visits from customers—both past and present. The staff maintained strong relationships with customers and suppliers and enjoyed daily interactions with our friendly, reliable couriers who delivered and collected parcels. Former staff, Friends like Jim Georgiou, George & Michael, Frank & Adrian, Cousins and Family would also occasionally drop by for a quick hello, and many were welcome to share a quick coffee and a chat with Tony and or Alex.

Airport Fire Services Aust. picks up a MESLCD meter.

Outside the factory with Hannah and Indie in 2022.

Efforts in keeping business costs lower. >

Attila the trusted Courier Please man.

Michael Hanley the Valves Guru, mates since 1989.

ManuFlo Polo parade with Tom.

With Zoran the friendly electronic components supplier.

2013 to 2014 – ManuFlo and the Roosters both flying high

Hannah Manu joined the company to explore opportunities within the family business, bringing her administrative expertise. After six months, she decided to return to the Real Estate sector to continue her career in specialist administrative roles.

Given Alex's long-standing passion for Rugby League and his team, ManuFlo participated in the corporate sponsorship Golf Day at The Coast Golf Course with the Sydney Roosters (Eastern Suburbs) for two consecutive years, strengthening industry connections and community engagement.

Meanwhile, the ManuFlo website continued to be meticulously updated with new product specification datasheets and technical guides—an ongoing in-house labour of love dedicated to keeping customers and service agents informed of the latest developments.

The ManuFlo website is constantly updated with new products and tech support guides. ◄

*Tony Manu on a field trip with Alex, inspects an **FMS-TW** Trade-waste site.* ►

Alex and Tom TJV @ Sales Conference in Los Cabos Mexico ◄

Alex and Erica's beloved Rugby league team -The Sydney Roosters – win the 2013 premiership.

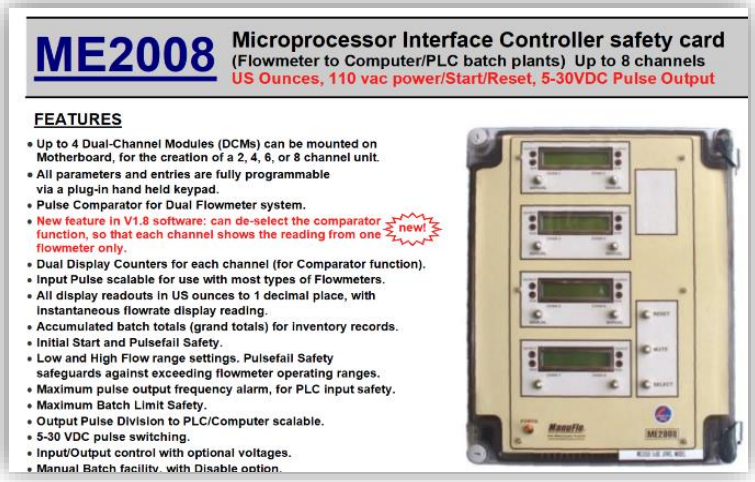
ManuFlo sponsors a Sydney Roosters Golf Day at the Coast. Alex and George Manu with players SKD and Issac Lieu.

2014 - Re-entering the USA market

The U.S. market remained reliant on sight bottle dispenser technology—an outdated method that Manu Electronics was instrumental in replacing over four decades ago. Seeking to re-establish its presence in the U.S. admixture measurement market, ManuFlo introduces two **ME2008-USA** units, specially configured with software calibrated in U.S. ounces for GCPT (Grace). However, due to the company being overstretched, the opportunity to expand further slips away. Over a decade later, as the new **ME-X** project nears, ManuFlo discovers that its unique **ME2008** design has likely been copied in the USA.

The **ME2008** becomes available with the **CV-W** option, enabling monitoring of water flowmeters via a dedicated **DCPM** module software integration.

Alex's partner Erica JJ Son joins the company, bringing with her extensive corporate expertise in finance, accounting, IT, HR, and administration.



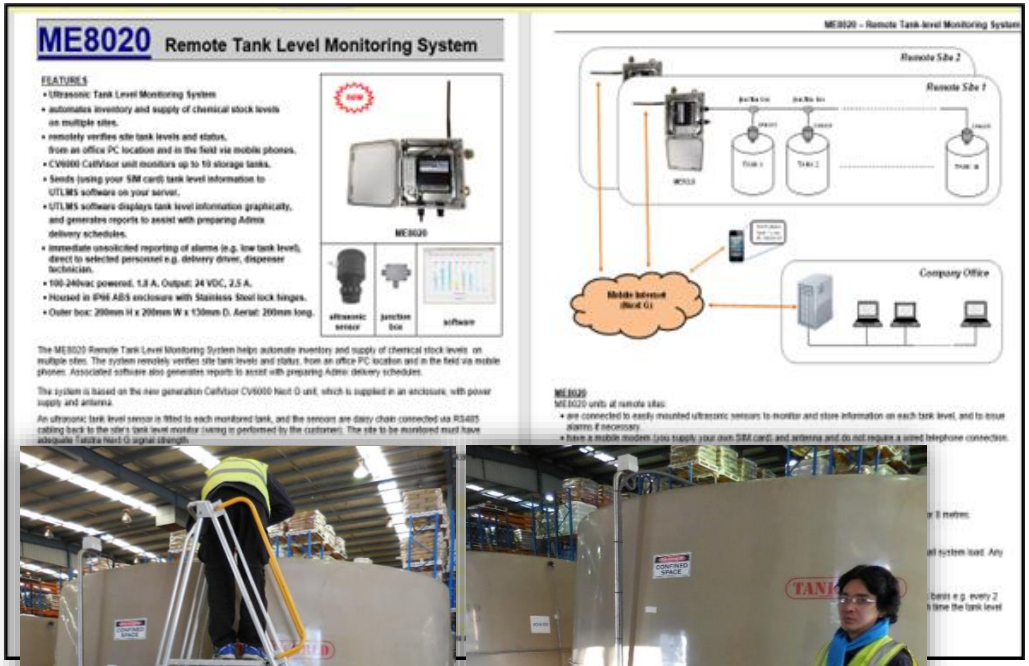
Incredibly one ME2008 replaced eight bottle dispenser cylinders in the USA.

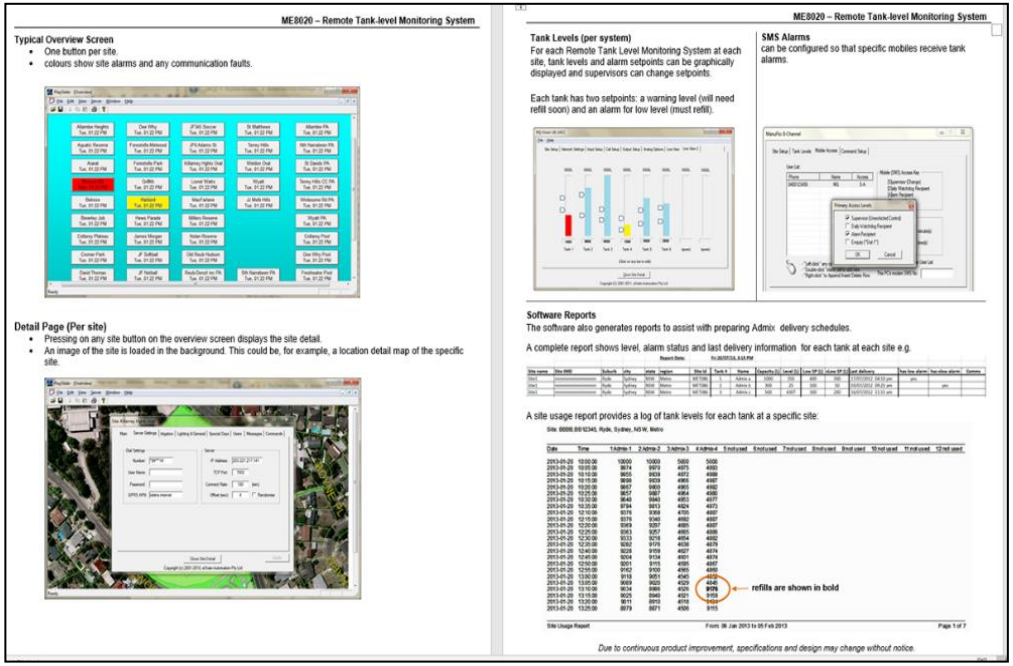
DCPM-W *water batching software module*

Manu working barbeques were still goers, this one at Daisy St DY►

2014 – The ME8020 Tank Level Ultrasonic monitoring system

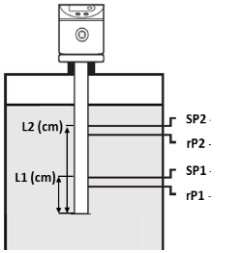
Eleven years after introducing its first tank level system, ManuFlo developed a third iteration with the release of the **ME8020**, featuring ultrasonic tank level sensors and a fully integrated software delivery management system. Some project sites included the Sydney M4 upgrade extension site and the GCPT admixture production factory. Additionally, a custom-designed full tank warning probe alarm system was introduced.
However, the implementation encountered several challenges, including irregularly sized and foaming tanks, supplier-driven changes to sensor software protocols, incorrect installation by contracted installers, firewall integration complexities with customer IT departments, and limited support from the co-developer. These setbacks, along with escalating development and support costs, ultimately led to ManuFlo suspending the product. Although a later version incorporating more reliable pressure sensors was developed, management lost focus, and the product was eventually suspended and mothballed.





Wilson installing sensors on the chemical tanks. ◄

Ultrasonic Level sensors ready for install ►

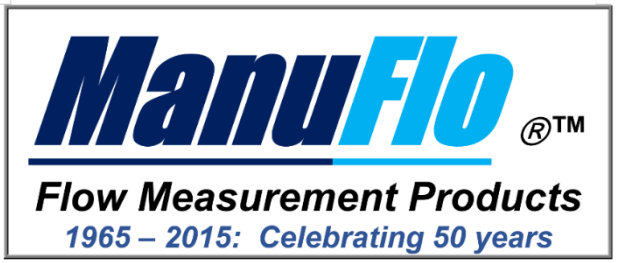


***TLOS** Tank Level Overflow System* ▲

2015 – The Manu's celebrate 50 years history of involvement in liquid measurement

The year 2015 marked the 50th anniversary of Tony Manu's pioneering work in liquid measurement and control products. In recognition of this milestone, ManuFlo entered into a national small business awards competition, where the company was named runner-up—a prestigious accolade for a business that had grown into a powerhouse in the industry. Following this recognition, Alex was contacted by Ross Greenwood, who featured ManuFlo in the national Daily Telegraph newspaper article, further cementing the company's reputation.

2015 was also a year of significant product innovation. ManuFlo expanded its product portfolio with the development of the first **SPF** Smart-Pipe flowmeter, the **WPTR** wireless signal transmitter system, and the **PTBS** portable trolley batch system. Additionally, ManuFlo introduced the **KMS** range of electromagnetic flowmeters as its flagship Magflow lineup.

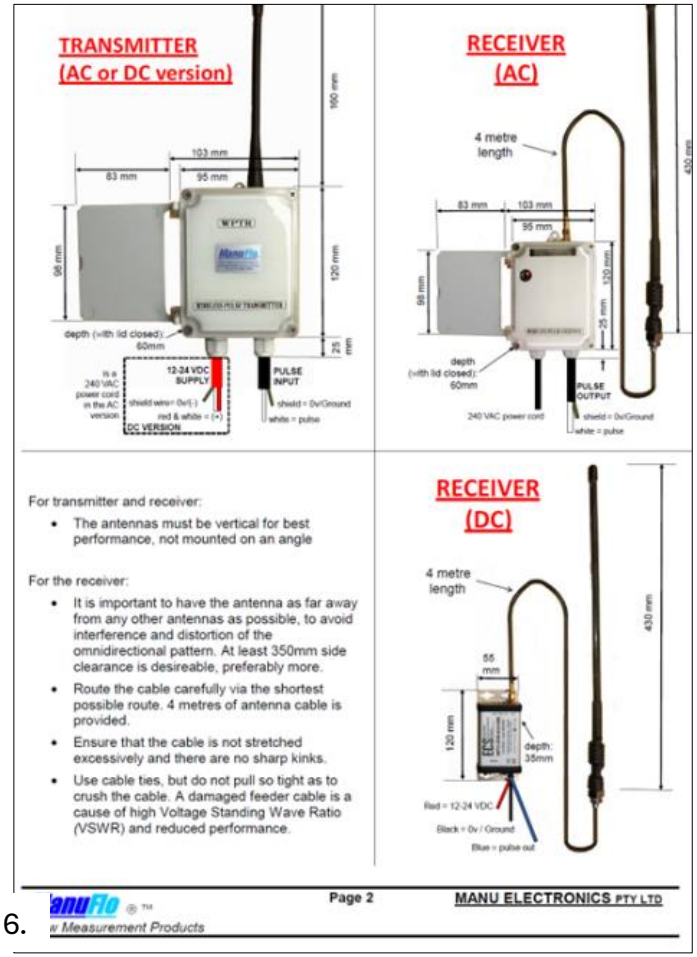


2015 - ManuFlo introduces the WPTR and PTBS systems

ManuFlo, always engaging with its customers and attuned to market opportunities, introduced two innovative products;

The **WPTR** was developed as a wireless flowmeter pulse transmitter and receiver system for concrete plants, seamlessly linking Slump-stand and Batch-room systems. By eliminating the need for hardwiring, it enabled smooth integration—ensuring that when water was added to the transit mixer, the Batch-room allocator could accurately log the water addition into batch records for each respective truck mixer.

Meanwhile, the **PTBS** emerged as a fully integrated turnkey solution, designed and manufactured by ManuFlo to provide a completely portable liquid measurement and pumping batch system. Compatible with **ME-series** batch controllers and ManuFlo flowmeter options, this system continues to be highly popular today.



*Alex with the final assembly of the all new **PTBS**.*

◄ *The **WPTR** System.*

*The **PTBS** ►*

2015 - Employees depart whilst new ones arrive

After more than a decade of dedicated professionalism and service, the highly valued Chris Ramos departed, marking the arrival of Phil King, who brought with him an invaluable 25 years of process control instrumentation and general flow measurement knowledge and extensive sales and customer support experience. At its peak, ManuFlo employed over 14 staff members. However, as manufacturing techniques evolved and certain processes were outsourced, the company maintained a steady workforce of 10 employees, all while managing consistent sales growth.
While some production staff had come and gone—many still maintained social connections with the company—a core group of long-term team members remained. Their invaluable expertise and deep knowledge of ManuFlo's products continued to be a cornerstone of the company's success.

ManuFlo proudly acknowledges the dedication and expertise of all the talented individuals who have contributed to its journey and played a vital role in its many decades of success.

L-R: Wilson, Phil, Alex, Charsen, Erica, Tony, Felix and, Vicki.

"We believe the success of our products stems from their competitive pricing, simplicity of operation, ease of serviceability, and strong product support. Our in-house service and repair policy is designed to ensure rapid turnaround for customers worldwide.

At ManuFlo, our dedicated team — comprising valued staff — prioritizes our customers, recognizing that the overall human rapport is an essential component of our business."
Managing Director, Alexander Manu

Phil & the Magic Box ▲

*ManuFlo's -**QR Code***

Industry Golf Day with Manly legend Geoff Toovey ►

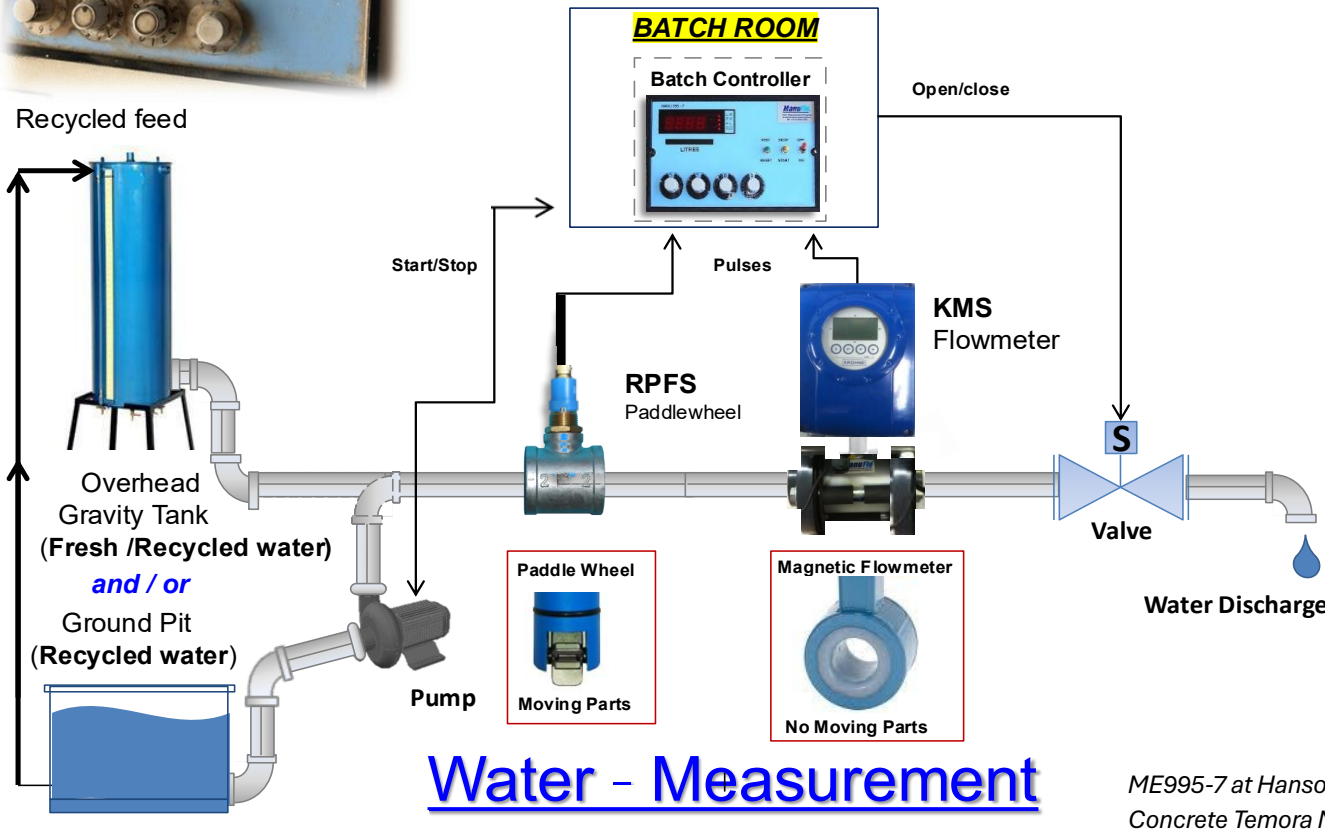
2015 - Twenty Year Anniversary for the ME995-7 Batch Controller

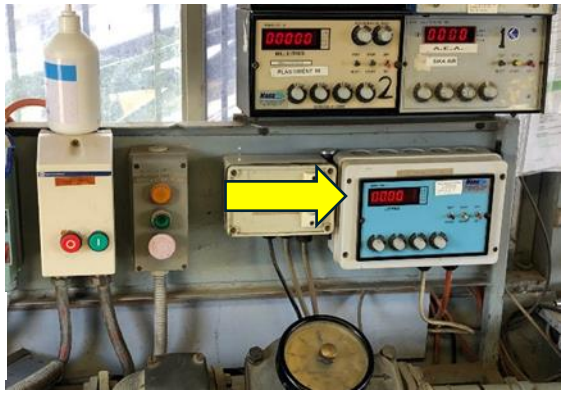
Two decades after its introduction, the **ME995-7** "Litres" Batch Controller—available with **RPFS** and or **Magflow** options—had become the largely go-to solution across Australia for dispensing fresh and recycled water in concrete batch plants. Widely adopted, it was frequently integrated with PLC-controlled systems, enhancing automation and efficiency. This was the icing on top of the full range of **ME995's** that were also prevalent for chemical measurement.

Beyond the concrete industry, the **ME995-7** also gained popularity in general process measurement and control applications across various sectors, reinforcing its reputation as a reliable and versatile solution.

◀ *20yr old original battered* ***ME995-7*** *unit yet still in operation*

ME995-7D *with* ***RPFS*** *20mm at Bakery* ▶





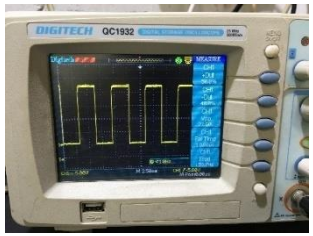
ME995-7 at Hanson Concrete Temora NSW ▶

Water - Measurement

2015 to 2025 – The Smart-Pipe Project

ManuFlo was approached by SUM's and Flotech to develop a new application, adapting its **MRP** then **RPFS** Flowmeters for use with Water Standpipes that access mains water points across Australia. This project presented several challenges, particularly the need to accommodate a wider flow range and operate effectively at extremely high velocities.
Through a collaborative effort, rigorous testing, and iterative redesigns, the development process culminated in the **Smartpipe-V3**—a refined solution integrated with dataloggers, enabling real-time water usage data collection for water contractors and utility companies.

Smartpipe-v1 ***MRP*** *type ▲*



Signal analysing with Oscilloscope ▲

New high velocity rotor design ►

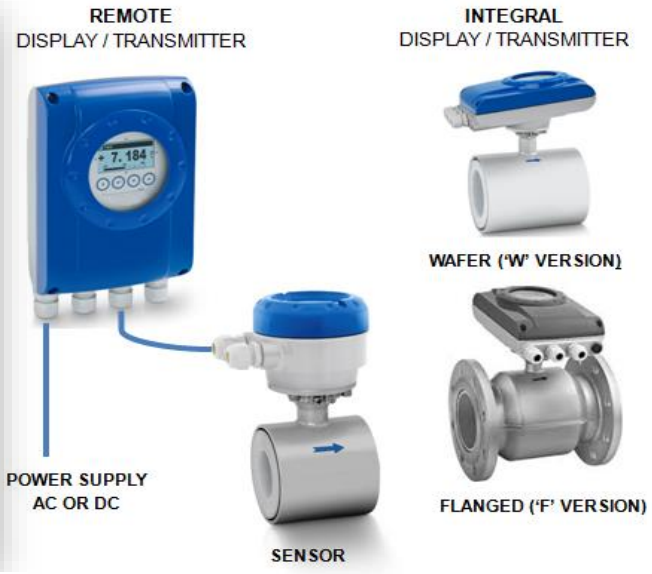
Smartpipe-v3 ***MRT*** *type ▲*

Complete Smartpipe Mains water extraction tube

2015 – The KMS range of Electromagnetic Flowmeters

The introduction of the **KMS** range of magnetic flowmeters positioned ManuFlo at the forefront of the industry, offering one of the most extensive ranges of customized advanced flow measurement solutions. Designed to handle everything from low to high flow rates and a wide variety of conductive fluids, the **KMS** range represents a significant advancement. This innovation was another game-changer for the company, as ManuFlo customized these units to meet the most demanding application requirements. Later the **AMM-v2** and **CMS** compact magnetic flowmeters were added to the range of MagFlow offerings.

KMS *Magflows measuring admixtures at Hallet Concrete SA ref: Andy Jordon.* ▲



Battery powered ***KMS***

KMS *for Liquid Grout*

AMM20-v2 *Magflow*

CMS25 *Magflow*

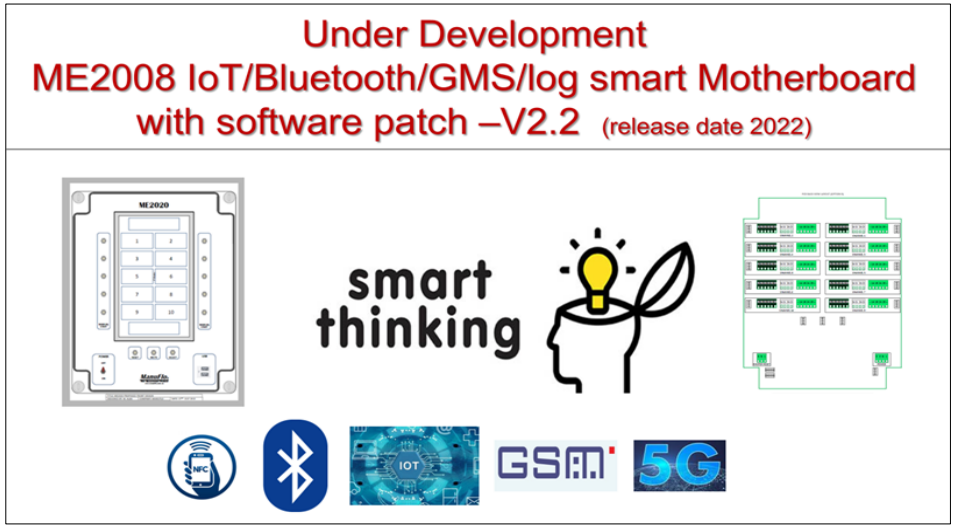
CMS25 *for Slump-stand water Boral St-Peters*

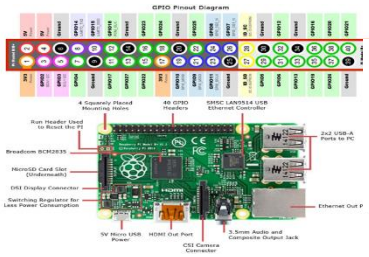
KMS 150mm at Wastewater site

2016 – Research and Development projects suspended

ManuFlo was in the advanced stages of developing a new prototype for the **ME2020** project, in collaboration with Perry Brown, the original designer of the **ME2008.** The prototype, delivered in 2016, featured an LCD touchscreen interface and envisioned the integration of tank level monitoring with full reporting and external communication capabilities—a fusion of the **ME2008** and **ME8020** units.
In parallel, work had also begun on the **ME999** Batch Controller, which aimed to merge the best attributes of the **ME995** and **ME3000** units into a next-generation solution.

However, these promising projects were placed on hold when Tony Manu was diagnosed with stage-3 cancer. At that point, Alex redirected his energy toward seeking alternative treatments, meeting with leading doctors and specialists. His search led him to the work of Dr. Raymond Royal Rife and the concept of resonant frequency therapy. A treatment machine was sourced from the USA and incorporated into Tony's daily routine alongside chemotherapy.
Whether it was the treatment's effect, the power of belief with a placebo effect, or sheer determination, Tony defied his original six-month prognosis, extending his time and continuing to inspire those around him with his determined fight.





The ME2020 project, using raspberry pie technology. ◄

ME999 project ►

The Rife resonant frequency machine used daily by Tony ▲

The original rife machine from the 1930's that reportedly successfully cured Cancer patients. ►

Milestones – ManuFlo in the bowels of Tunnel Projects.

Throughout its history, ManuFlo has provided solutions for both above-ground and underground applications, playing a vital role in tunnel construction projects. Its products have been used to measure liquid grouts, shotcrete chemicals, and general wastewater pump-out applications. From the Sydney Harbour Tunnel to the M4 and M5 expansion, Cross City Tunnel, M6, M8, Metro Rail Tunnels and many more, ManuFlo has consistently delivered accurate and reliable measurement and control solutions, decade after decade.

2001 – Tony at the Cross City tunnel project. ▲

2019 - Calibrating a Shotcrete Rig Sprayer in the M4 to M8 tunnel with Steve. ▲

2021 - Hunter Mine Tunnels ▲

◄ *1990 - Sydney Harbour Tunnel* ►

Milestones - Wars, Global Disasters, and ManuFlo

Throughout its history, ManuFlo has found itself entwined with the events and aftermath of wars and natural disasters—both in challenging and opportunistic ways. Some examples include:-
Following the Vietnam War, Vietnamese companies expressed a preference to engage with Australian suppliers, such as ManuFlo, over U.S.-branded alternatives. This shift opened valuable avenues for ManuFlo's entry into the region.

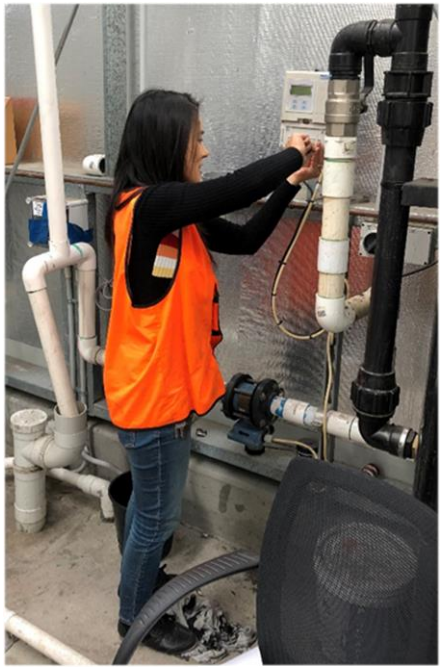
In the lead-up to the Gulf War, ManuFlo fulfilled an order of 100 CT5-20S water study flowmeters for Iran. Interestingly soon afterward, the company received a formal letter of caution from the Australian Government concerning WMD-related concerns.
During the Gulf War, additional orders were secured—from Halliburton for Iraq, and from the Australian Defence Department, which commissioned a Water Batch System for troops stationed in Kuwait.

Ironically and somewhat regrettably, wars and natural disasters—including floods and earthquakes—have historically contributed to business activity, as widespread infrastructure damage demands significant reconstruction efforts. This, in turn, fuels the concrete industry, where ManuFlo's equipment plays an essential role in fluid measurement and batching.

*Flooded **MES20** equipment requiring maintenance ▼*

Milestones – ManuFlo Liquid Trade Waste Flowmeter Systems spread throughout Greater Sydney

Since Manu Electronics' early involvement in 1984 with the Sydney Water Board's Trade Waste Policy—aimed at policing and cleaning up Greater Sydney's waterways by monitoring wastewater discharge from industrial and commercial premises—ManuFlo has remained a trusted supplier of flowmeters connected to water sampling devices. Over the years, Tony Manu, Joe Hajdu, Philip Manu, Alex Manu and Douglas have systematically visited an expanding network of sites, conducting annual inspections to check, record, calibrate, and service each compulsory flowmeter. Upon completion, a certification is issued, ensuring compliance and operational accuracy.



Alex and Erica on the tools at various sites

ManuFlo™ ®
Flow Measurement Products

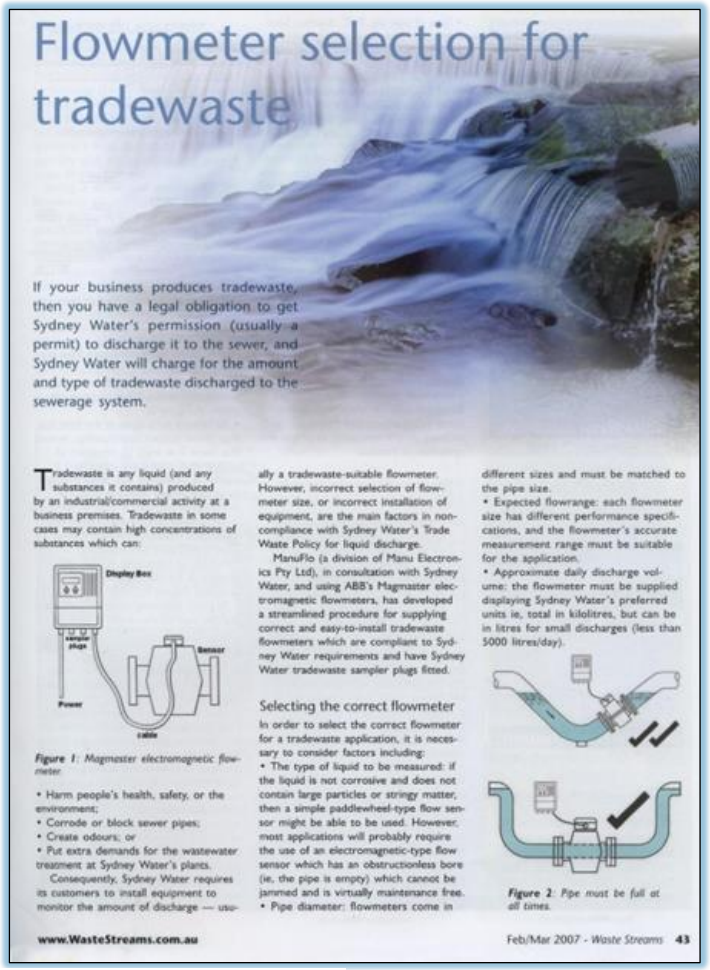
Calibrations/Verifications
Cert: NMI-NSS1671

Test Date:- _____

Due Re-Test Date:- _____

Tested by _____

Email: sales@manuelectronics.com.au Ph: 02 9938 1425
Web: www.manuflo.com
(Authorized Sydney Water Verifier /repairs/maintenance of Magflows)



Flowmeter selection for tradewaste

If your business produces tradewaste, then you have a legal obligation to get Sydney Water's permission (usually a permit) to discharge it to the sewer, and Sydney Water will charge for the amount and type of tradewaste discharged to the sewerage system.

Tradewaste is any liquid (and any substances it contains) produced by an industrial/commercial activity at a business premises. Tradewaste in some cases may contain high concentrations of substances which can:

Figure 1: Magmaster electromagnetic flowmeter

- Harm people's health, safety, or the environment;
- Corrode or block sewer pipes;
- Create odours; or
- Put extra demands for the wastewater treatment at Sydney Water's plants.

Consequently, Sydney Water requires its customers to install equipment to monitor the amount of discharge — usually a tradewaste-suitable flowmeter. However, incorrect selection of flowmeter size, or incorrect installation of equipment, are the main factors in non-compliance with Sydney Water's Trade Waste Policy for liquid discharge.

ManuFlo (a division of Manu Electronics Pty Ltd), in consultation with Sydney Water, and using ABB's Magmaster electromagnetic flowmeters, has developed a streamlined procedure for supplying correct and easy-to-install tradewaste flowmeters which are compliant to Sydney Water requirements and have Sydney Water tradewaste sampler plugs fitted.

Selecting the correct flowmeter

In order to select the correct flowmeter for a tradewaste application, it is necessary to consider factors including:

- The type of liquid to be measured: if the liquid is not corrosive and does not contain large particles or stringy matter, then a simple paddlewheel-type flow sensor might be able to be used. However, most applications will probably require the use of an electromagnetic-type flow sensor which has an obstructionless bore (ie, the pipe is empty) which cannot be jammed and is virtually maintenance free.
- Pipe diameter: flowmeters come in different sizes and must be matched to the pipe size.
- Expected flowrange: each flowmeter size has different performance specifications, and the flowmeter's accurate measurement range must be suitable for the application.
- Approximate daily discharge volume: the flowmeter must be supplied displaying Sydney Water's preferred units ie, total in kilolitres, but can be in litres for small discharges (less than 5000 litres/day).

Figure 2: Pipe must be full at all times.

www.WasteStreams.com.au Feb/Mar 2007 - Waste Streams 43

ManuFlo feature in trade mag. ▲

Sydney WATER

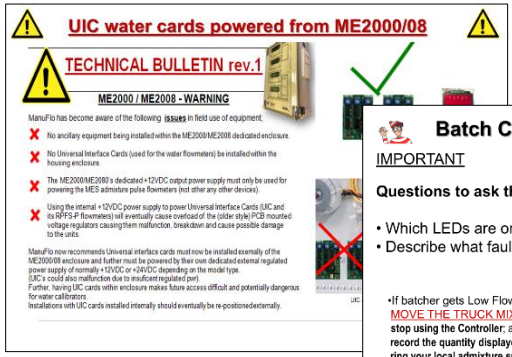
Milestones – The ManuFlo Equipment Training Courses

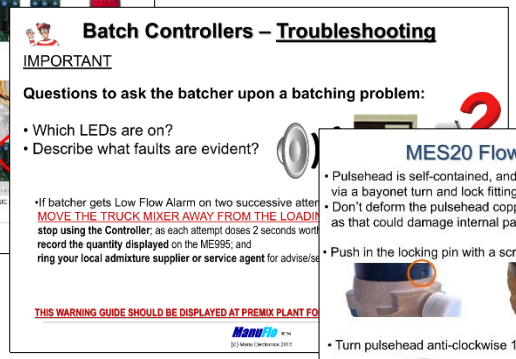
Beginning in 2004, ManuFlo was compelled to introduce annual, face-to-face interactive training courses for ManuFlo's key chemical admixture customers across Australia and internationally. Additionally, in-house factory workshop sessions were conducted upon request. These sessions were widely embraced, providing dispenser equipment technicians and contractors with a comprehensive understanding of the critical operational functionality of the equipment, which plays a vital role in accurately measuring chemicals. These essential training sessions continue to this day.

UMT8 *multi-function tester*

Tony Vella -the SIKA national dispensing equip manager requested the annual event at NSW-HO up until Covid.

2018 -Mitch, Alex and Paul at the annual ManuFlo Sika tech training conference at Wetherill Pk. NSW ◄





Page extracts from training document ▲

2016 – Introduction of MRT20-T2 range of flowmeters

After 25 years, the **MRP** screwed insertion flowmeters had become well-established for use on mobile concrete delivery mixer trucks, slump stands in concrete batch plants, and irrigation applications. However, several limitations required attention. For mixer trucks, servicing the rotor element could be challenging due to the screwed insertion design, and incorrect repositioning could affect calibration. Additionally, rising gunmetal material costs posed concerns. Furthermore, the **MRP** lacked adaptability for larger pipe sizes, necessitating an integral-type easy insertion flowmeter.

Recognizing these challenges, Alex initiated and led the design of a completely new range of integral LCD battery-powered flowmeters. Inspired by the easy slip-insertion design of the **RPFS** and **RPFS-LS** rotor pulse flowmeters, designing a product that could withstand harsh application environments while incorporating new plastic materials presented several challenges. After six months of prototyping and experimentation, a new LCD PCB module was developed, featuring **NFC** (Near Field Communication) programming. This innovation allowed calibration and re-calibration parameters to be set without opening the housing, unlike previous designs. Further, the new ABS square housing with hinged lid streamlined manufacturing techniques.

Additionally, the units were designed with an IP67-rated mating plug pulse output signal option, enabling integration with GPS fleet management systems. The full-scale rollout began in 2017 and was met with strong customer acceptance. The **MRT20-T2** 20mm size flowmeter proved to be cost-effective and user-friendly model. ManuFlo takes pride in the fact that these flowmeters remain the industry-standard for measuring added water in concrete mixer trucks to this day. They are widely used by leading manufacturers such as Cesco, Forbes, Mixers-Aust and Davcron, as well as many other customers who build or use concrete mixer trucks and incorporate them as standard equipment.

*The new **MRT20-T2** resettable truck flowmeter*

***NFC** app fully useable via Android devices*

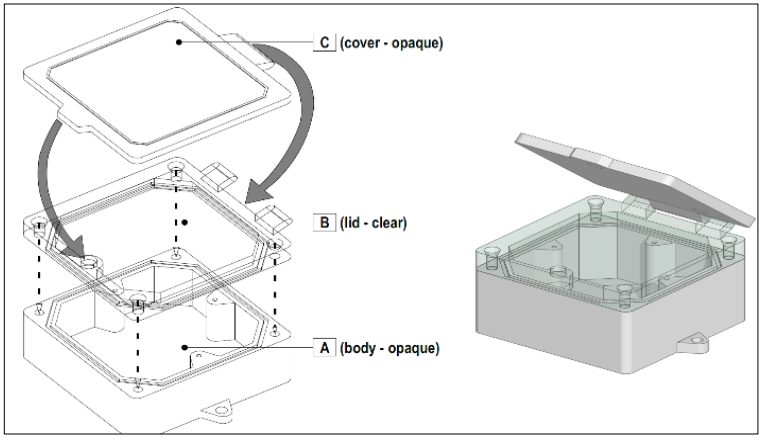
***MRT20-T2** mounted at rear of Concrete Truck*

2016 – The MRT range is expanded with MRTU models

As demand for ManuFlo's **MRP** screwed insertion water flowmeters continued to grow, so did the need for solutions accommodating larger pipe sizes. To address this, ManuFlo expanded the **MRT** range to include the **MRTU**, featuring medium and long-stem insertion types for pipe sizes ranging from 25mm to 300mm in diameter. This expansion, along with a range of irrigation pipe fittings and saddle adaptors, allowed ManuFlo to serve a broader market. Additionally, the introduction of flowmeters with 4- or 6-digit LCD display options further enhanced versatility and market reach.

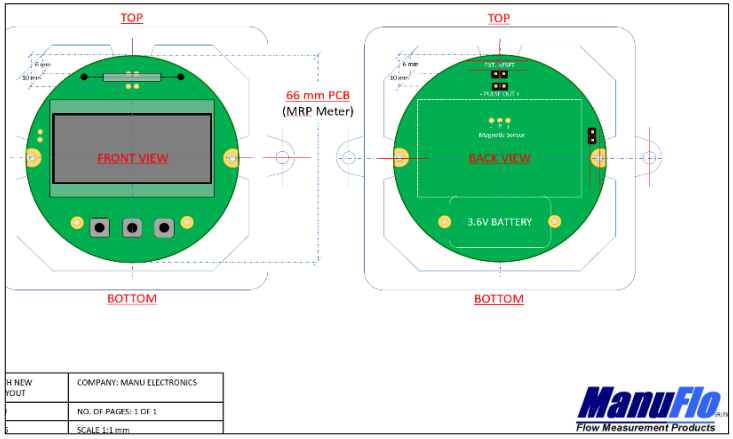
▲ ***MRTU6's*** *mounted on various pipe adaptors*

MRTU303 *and* ***MRTU6-LS*** *slip insertion flowmeters* ▲



Prototype ***MRT/U*** *ABS enclosure*

An ***MRTU6-LS*** *in use at an outback WA location*



MRT/U *prototype LCD-PCB-NFC designs*

2016 – 2017: The New Dream Team

During this period, ManuFlo strengthened its team by securing the expertise of Bill Hanger, who brought vast professional experience to his multifaceted role. Shortly after, the jovial Mark—a Kiwi and Tigers fan at heart—joined as storeman and packer. Harry, the dependable Korean dynamo, was already a valued member of the team. All while the founder, Tony, randomly graced the factory, staying connected to the company he nurtured in the early years.

In 2017, ManuFlo welcomed Mitch, a polished Persian genius, as the resident electrical engineer, soon followed by the graceful dependable Matine. With Alex and Erica managing operations alongside the ever-reliable Vicki, John, Paul and Phil, ManuFlo assembled what was arguably its strongest cohesive team to date, with each member excelling in their role. This synergy culminated in the company's best-ever sales year, peaking in 2018.

Mitch & Harry Dart Comp winners !

*New **RPFS-LO/D** designed by resident engineer Mitch.*

2018 – A record year of sales results ends with a Xmas party extravaganza

The synergy of a great working team and tireless efforts to secure new product applications through product innovation, culminates in the company's best-ever sales year, peaking in 2018. Of particular success for the year was the roll-out of pulsed output **RPFS-P**, **MRT20** and **MRP20** water reset flowmeters on Holcim Concrete's national concrete truck mixer fleet and the large contract order for Smartpipe™ flowmeters.

Historical records as at 2018 reach product quantities exceeding 2500 **ME2008** batch safety interface systems,10000 **ME995** batch controllers, 2000 **Magnetic** flowmeters, 15000 **RPFS** Rota Pulse sensors, 30000 **MRP/MRT** flowmeters, 40000 **MES** flowmeters, many used worldwide on a daily basis.

- ManuFlo equipment was now used in over 95% of all Premix concrete plants in Australia/NZ alone.
- Major construction projects in thousands of locations now relied on ManuFlo equipment for chemical measurement.
- The largest construction chemical companies—including Sika, MBS, GCPT, Fosroc, Mapei, Sobute, Normet, and others—use ManuFlo products.
- ManuFlo products were now widely adopted in irrigation and general liquid measurement applications, supported by an extensive agent, reseller, and installer network across Australia and overseas.

Team ManuFlo celebrates an overnight two-day overnight party bash at Penrith Panthers Club.

Tony's sister ► Helen with Jack drop in for a hello.

2019 – Saying goodbye to the founder

On September 28th, 2019, Tony Manu, the founder of Manu Electronics P/L, departed this world. A true pioneer, he transformed the industry with his groundbreaking liquid flow measurement and control designs, leaving an enduring legacy that continues to shape the field.
Tony's influence extended beyond his innovations—his strength, sharp wit, and unwavering determination made him a unique and formidable presence. His contributions, alongside those of his son Alex, have helped define the industry, ensuring that his impact will always be remembered and never forgotten.

A memorable funeral service was held, attended by family, friends, staff and industry colleagues who gathered to honour his life and achievements. Now, as Team ManuFlo continues forward, he watches over from above, his legacy guiding the company's ongoing journey.

Tony loved to share his wisdom: ***L*** *-with John in the workshop.* ***R****- with Mitch, Harry and Bill in the boardroom.*

Far left – Alex and Tony at the original Killarney Hts House/Workshop.

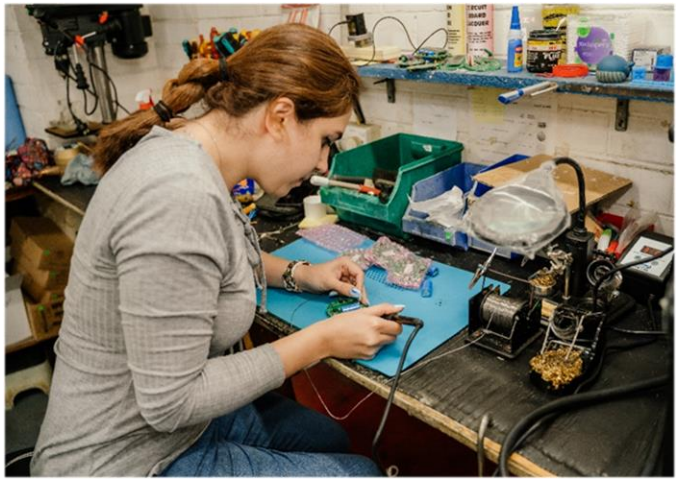
2013- Tony and Alex with Peter-G's 60th., who first worked for the Manu's in the 1960-70's. ◄

Milestones – Platinum Service Reputation

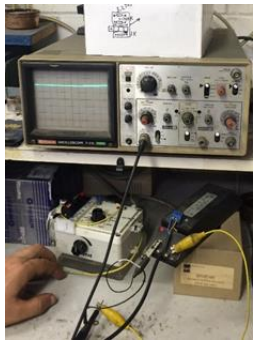
A cornerstone of ManuFlo's long-term success has been its unwavering commitment to dependable, on-call technical support, spare parts availability, and product reconditioning and repairs. Whenever the phone rang, an enthusiastic staff member was always ready to assist—every inquiry was and still is treated as valuable and interesting.

ManuFlo consistently maintains replacement stock and spare parts, ensuring rapid response to equipment breakdowns worldwide. If a simple like-for-like replacement wasn't possible, the team would rally to build an equivalent solution—packing frantically to meet courier deadlines. Every email and sales opportunity, big or small, was and still is treasured and addressed ASAP, embodying the company's "we can do" motto as "This was and still is the way".

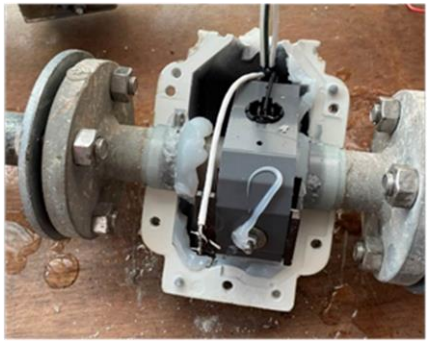
The ManuFlo hive buzzes with colourful enthusiasm, driven by a culture of dedication and problem-solving. Products returned for reconditioning or repair were and still are tackled with the determination to restore them to their full former glory, reflecting the deep pride and craftsmanship that defines ManuFlo.



*Matine expertly repairing and reconditioning returned **MRP20** products. ▲*



The Boss rolling up his Sleeves packing products for despatch to Holcim Indonesia. ►



***Mag** Flowtube coil repair ▲*

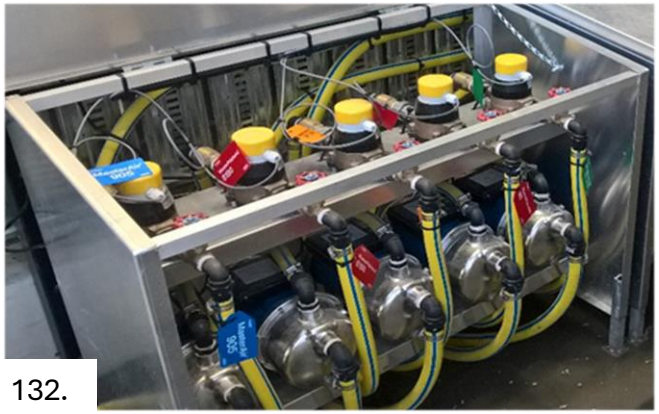
***MRTU4** onsite repair ▲*

Milestones – Overcoming the Technical Challenges

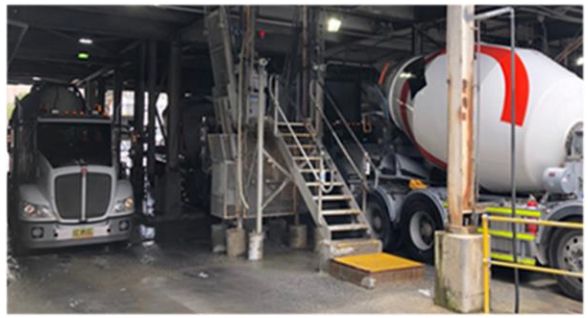
ManuFlo's products are primarily designed to support manufacturing processes—a demanding field that requires both precision and reliability. Delivering dependable solutions to industry necessitated carefully engineered products that prioritize reliability and user-friendly operation.

Beyond product design, the company consistently demonstrates a strong commitment to problem-solving, often addressing challenges that extend beyond the scope of its own products. In many cases, operational usage itself presented the greatest obstacles, requiring innovative solutions and adaptability. From its earliest days, ManuFlo has remained dedicated to assisting customers, whether by resolving application issues or developing revised and new products to meet evolving needs. The company has always embraced a "we're in it together" approach, fostering strong partnerships and ensuring customer success through collaboration and support.

2019 -Alex with Bill and David Creedon assessing ManuFlo equipment at Holcim Artarmon Batch Plant.



***MES20** and Pump installation by David from MBS ◄*

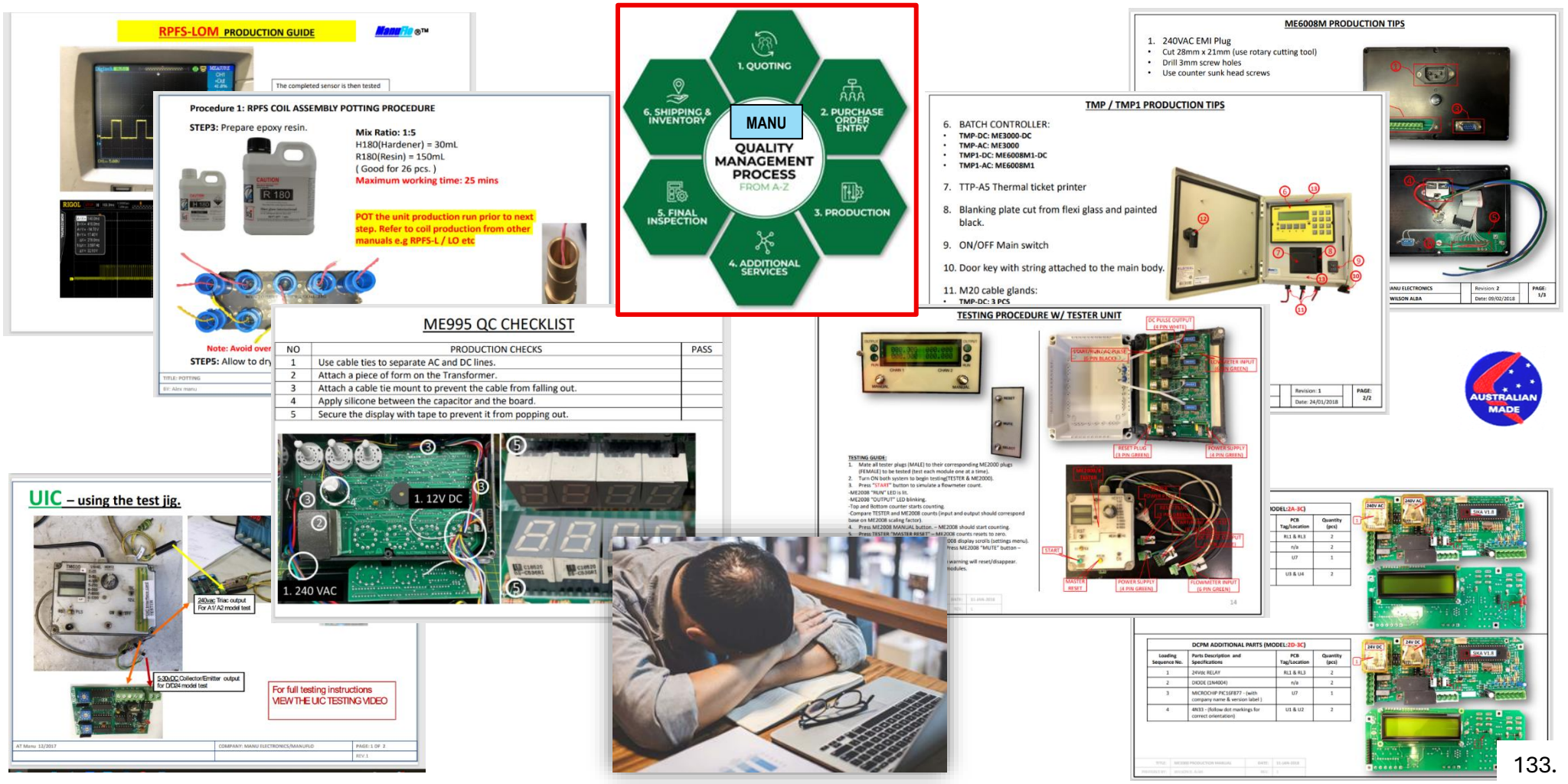


*Bill observing install of **RMS004** and **FRT303** installed at Boral Peppertree Quarry NSW ►*

Milestones – Documenting Production: Manuals and Training Videos

Another monumental undertakings in ManuFlo's operational history has been the comprehensive documentation of production procedures for its product range. This endeavour involved far more than just outlining assembly steps—it encompassed listing approved suppliers, component costs, estimated order volumes, and capturing step-by-step processes through detailed manuals and training videos.

The initiative became especially critical in instances of staff turnover, where the absence of cross-skilling placed added pressure on management to fill knowledge gaps. In response, the push for systematic documentation began in earnest in 2014, gaining momentum over the years and culminating in substantial completion by early 2022, yet It is still an ongoing endeavour tasked for the ManuFlo business.



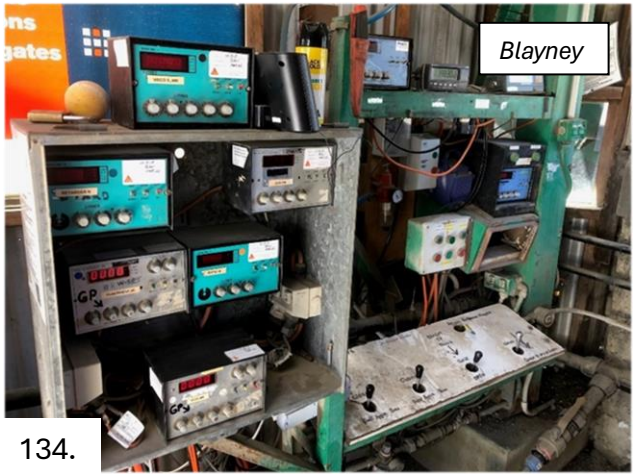
Milestones – Customer Visits Across Regional New South Wales

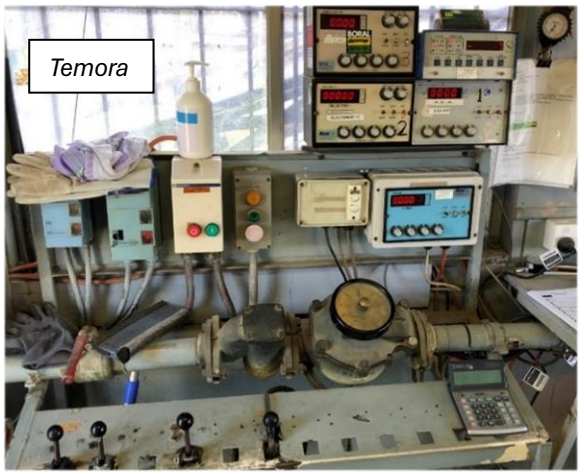
From 2017 to 2021, and in-between COVID-19 pandemic restrictions, Alex—accompanied by his trusted wife Erica—embarked on numerous regional customer visits throughout New South Wales. These journeys proved to be highly rewarding on multiple fronts.

Firstly, connecting with a range of new distributors generated significant new business. Secondly, visiting concrete batching plants—both large and small—revealed something remarkable: ManuFlo products from the 1980s were still in active operation, particularly the **ME182** and **ME188** batch controllers, continuing to serve faithfully some thirty to forty years later.

The country folk were welcoming and refreshingly casual, often requiring no prior appointments. Batch controllers and flowmeters of every kind were still prevalent across the plants, a testament to ManuFlo's enduring legacy.

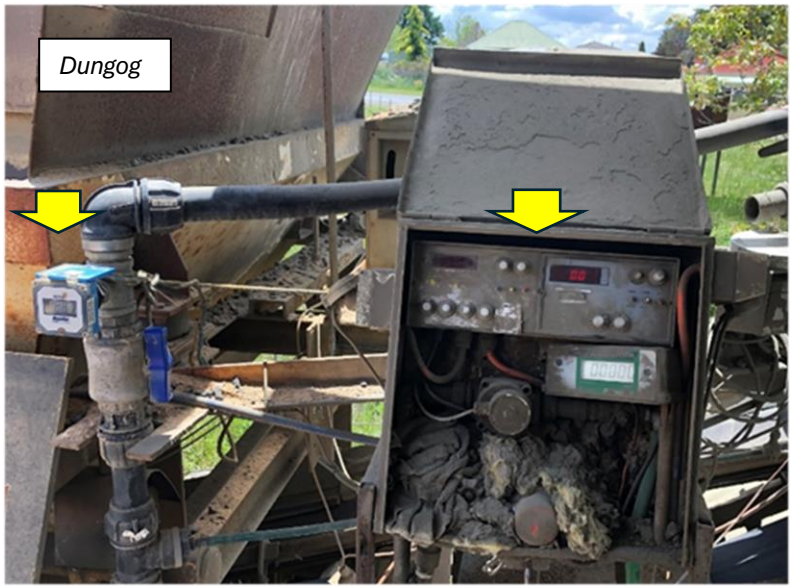

Orange

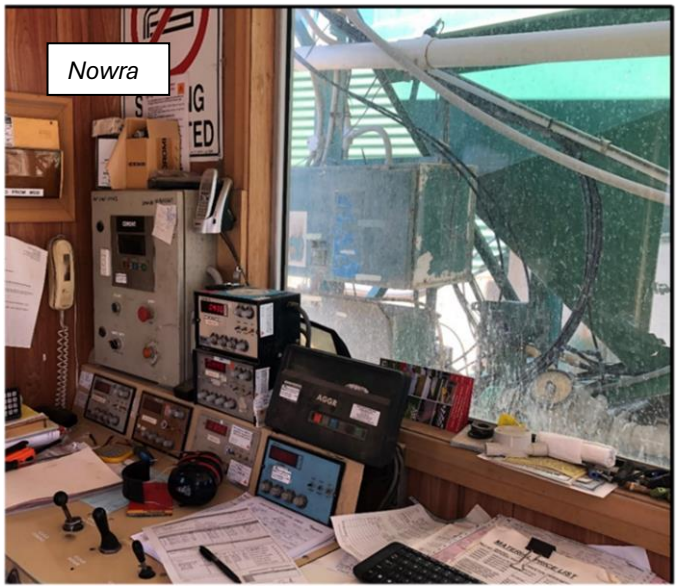




Milestones – Regional NSW Country Visits

Some of Alex and Erica's ManuFlo road trip routes included Gosford and Central Coast, Newcastle and Huter region, Towns along the New England and Gwydir Hwys to Moree, then Kamilaroi Hwy to Quirindi. Another trip along Golden Hwy to Dubbo then down the Newell Hwy to Forbes. Another along the Mid-Western Hwy to Cowra then Olympic Why to Wagga Wagga then across to Tumut up the Hume Hwy to Yass, down to Canberra then Kings Hwy to Batemans Bay and up the Princess Hwy to Sydney. And yet another from Sydney visiting each town along the Pacific Hwy up to Brisbane.
At each stop visiting every town they sought out Concrete Batch Plants, Irrigation/Pumping Shops or any Business that may have a need for a flowmeter.
Alex's dream was to visit every Concrete Batch Plant and irrigation shop across Australia and perhaps catch a round of Golf on the way !


Dungog


Nowra


Parkes


Ulladulla


Muswellbrook

Milestones – MRP and MRT Flowmeters: A Legacy in Motion

Over the past three decades, ManuFlo's **MRP** and **MRT** flowmeters have become synonymous with reliability in the concrete industry, now found on nearly every concrete mixer truck and slump stand across Australia and New Zealand. Their reach has also extended globally, with units shipped to numerous overseas destinations.
This widespread adoption stems from the fact that these products were custom-engineered for purpose-specific applications—not one-size-fits-all, but carefully designed to meet the demanding needs of concrete producers and batch plants.

Direct purchases from concrete producers, equipment manufacturers, resellers, and agents have solidified the flowmeters' reputation as industry benchmarks. Renowned for their durability, accuracy, and long service life, **MRP** and **MRT** units have become a mainstay of batching operations, contributing to consistent quality and operational efficiency across the supply chain.

Cesco Mixer ▲

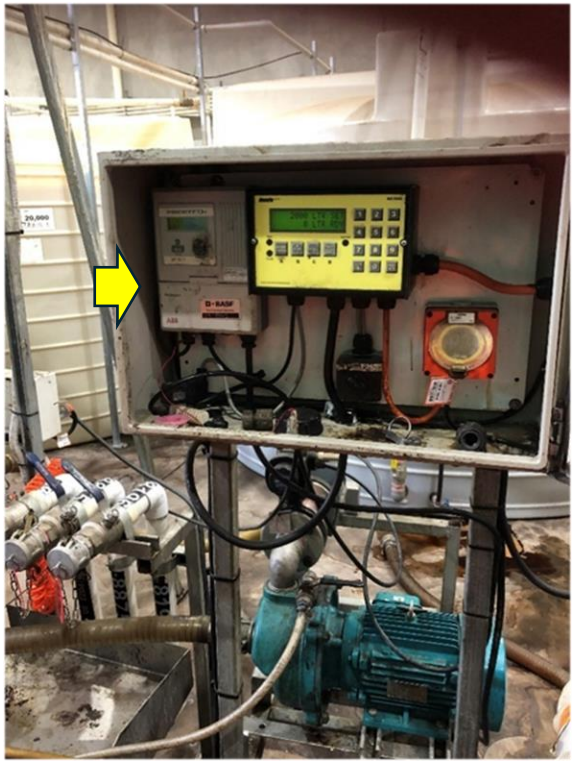
***MRTU4** meters on triple loader Slumpstand – St-Peters NSW ◄*

***MRP20-T2** on Slumpstand ▲ Gunnedah NSW*

Milestones – 30 Years On: Evolving Solutions for Timeless Applications

Since the 1990s, three decades have passed—but remarkably, ManuFlo continues to supply trusted measurement and control solutions for Admix Production Plants and Admix Delivery Tankers.
The product range remains anchored by the ever-reliable **ME995-7** Batch Controller, complemented by the versatile **ME3000** microprocessor with logging and printing capabilities. Expanding on this legacy, ManuFlo now offers advanced **KM**S Magnetic and **KMC** Coriolis flowmeter options, tailored for modern plant integration.

These solutions continue to serve operations across Australia and New Zealand, with reach extending to Southeast Asia, the Pacific, and African markets. Renowned tanker delivery companies like BCC and Omni Tankers, alongside global construction chemical giants—including MBS, GPCT, SIKA, Fosroc, Mapei and Normet—rely on ManuFlo's innovation and reliability to power their processes.



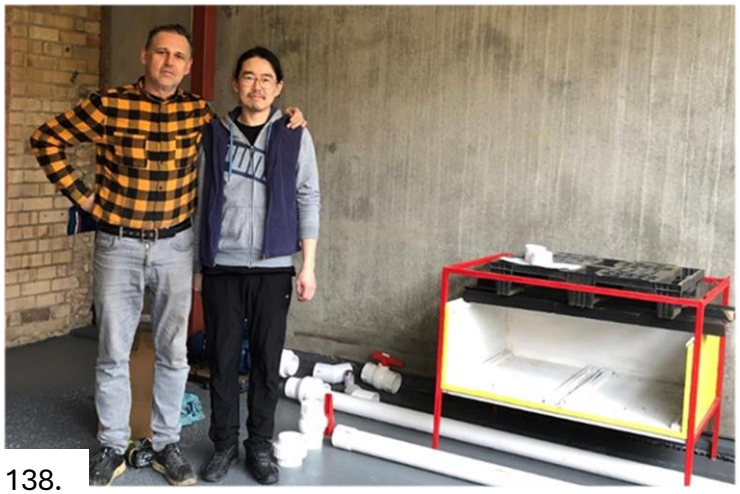
ManuFlo equipment pictured on Admix delivery tankers and fixed Admix blending plants.

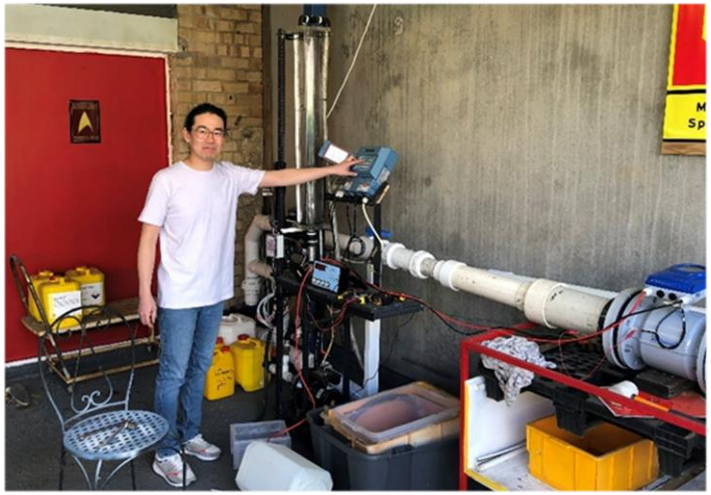
Milestones - The Calibration Rigs

The Water Calibration Flow Rig has been a cornerstone of ManuFlo's operations since its original design and build by Tony in the early **1980's**. Located at the current premises, this original rig was later upgraded with a vertical bypass system, expanding its capability to test a broader range of flowmeters.

As the business continued to grow, the need for a second calibration rig became apparent. In response, a high-volume, high-velocity rig was developed by Alex, incorporating a sight tube cylinder for additional visual accurate chemical testing. This advanced system was successfully completed and commissioned in **2020**, further solidifying ManuFlo's commitment to precision and quality assurance testing of flowmeters.

From Concept to Commissioning the New Calibration Rig. A testament to ManuFlo's in-house ingenuity, this rig was envisioned, built, and brought to life by Alex and Harry.





2020 – Move over Covid-19, The Show must go on

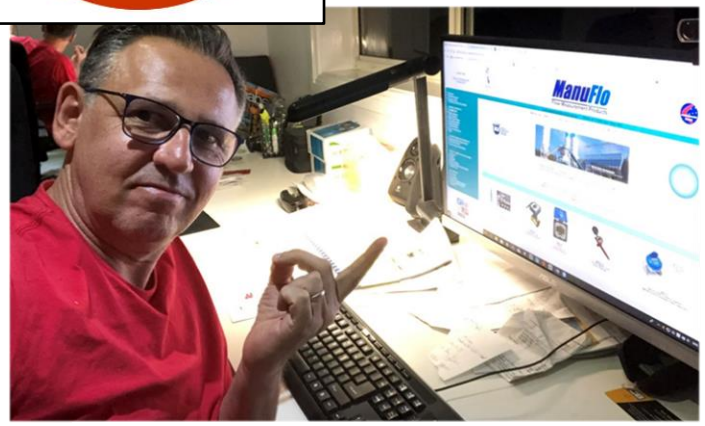
Over the decades, ManuFlo had weathered countless challenges, but few matched the scale and disruption brought on by the COVID-19 pandemic. The global shutdown of functional society, driven by government-imposed restrictions and widespread uncertainty, had a profound impact on all aspects of business operations.
Supply chains were severely disrupted, and access to client sites was heavily restricted. Export sales, which previously accounted for 25% of total revenue, were reduced to a trickle over a two-year period. Initial meetings were conducted with probable travel to secure new sales in India were also suspended.

In the face of these obstacles, Alex redoubled his efforts, driving new initiatives to sustain and maintain the business. A key milestone during this time was securing distributorship rights for Flomec Flowmeters, broadening ManuFlo's application reach and diversifying its offerings.
Sales were further supported by regional customer visits, as well as postal mailout campaigns to overseas markets and mass email initiatives. ManuFlo also began targeting new sectors such as breweries, distilleries, and emerging sales agent networks—strategies that yielded encouraging results.

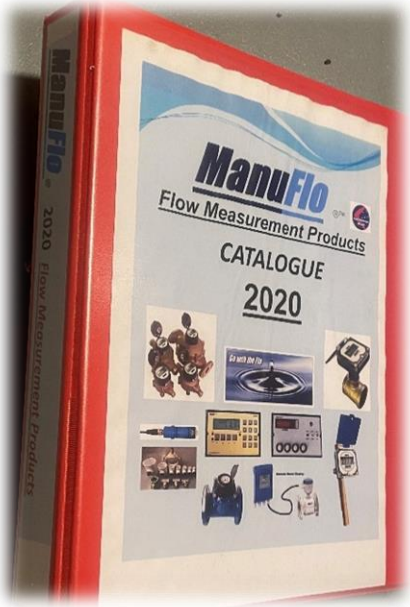
It wasn't until early 2022, as restrictions eased, that these tireless promotional efforts began to gain strong momentum, reaffirming ManuFlo's adaptability and tenacity in the face of unprecedented disruption.

Bare Foot Lawn Bowls 2020 Xmas Party at North Curly

Agency agreement with Flomec



Late nights enhancing the website and pumping out the customized Promo emails.



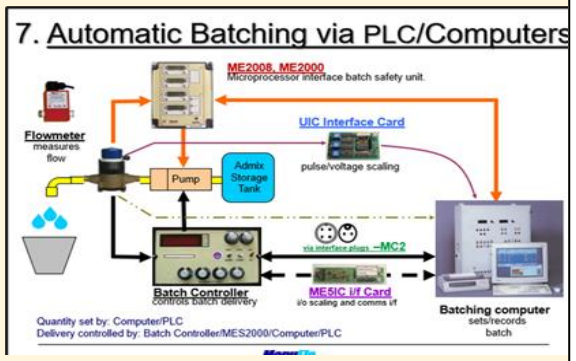
Promotional Products hardcopy catalogue

2020 – A Year of Final Resilience

The year 2020 marked 55 years since the inception of the flow measurement business—a milestone underscored by resilience in the face of global upheaval.

As with every preceding year, a familiar rhythm continued:

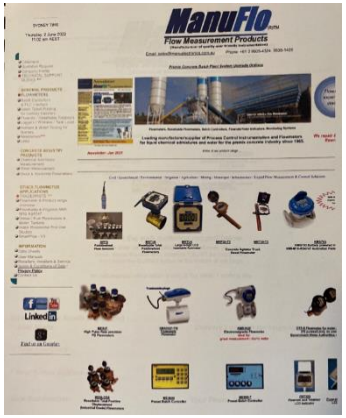
- New products were introduced and evaluated
- Supplier pricing and the full product range were reviewed
- The Annual Catalogue Pricelist was prepared and released
- The website was updated to reflect changes and innovations
- R&D submissions were diligently filed
- Wage reviews and staff bonuses assessed
- Social engagement with loyal clients and friends maintained and much more.



This year, however, carried added weight—it would be Alex's final time overseeing this full suite of responsibilities. It marked the close of an era defined by unflagging dedication, operational excellence, and leadership forged through decades of change.

Electronic PDF Catalogue

Covid Site Chaos



Website Home Page

Liz and Tony Vella of SIKA with Alex and Erica

*New Customized **MME** Magflow*

MES flowmeter going strong after 25 years

2021 – A Turning Point – Transition and Legacy

After successfully managing and expanding the business over the past 30 years at the helm —navigating a multitude of challenges and dedicating countless extra hours each week — COVID-19 delivered the final blow that led Alex Manu to make a pivotal decision. Recognizing that true leadership includes knowing when to step back for the greater good of the future growth of the business, Alex chose to relinquish controlling interest in the company.

Following a comprehensive sale selection process and a gruelling six-month period of legal negotiations with the chosen buyer—complicated further by ongoing COVID-related disruptions—Manu Electronics P/L officially sold all assets associated with the "ManuFlo" brand on **28th September 2021**.

Poignantly, the sale date marked exactly two years since the passing of Tony Manu, the company's founder—adding symbolic weight to the transition.

This marked the end of 60 years of solely family-led stewardship, as controlling interest in the company was officially relinquished to the investor consortium—paving the way for a new chapter of global growth and opportunity.

Allied Concrete -Invercargill NZ -2018.

Saying Goodbye to Fulltime at the Factory

One of the toughest decisions for Alex and Erica was the decision to part with controlling interest in ManuFlo, a business built with passion and persistence over 60 years since its inception. After decades of innovation, dedication, and growth, this moment marked not just a change in ownership—but the closing of a defining chapter in the company's story, and the beginning of a new era shaped by its enduring legacy.

2021 – 2022; New Owners and New Leadership

As part of the sale agreement, the original company retained a minority shareholding in the newly established ManuFlo P/L, with Alex committing to remaining involved with the new entity for one year to ensure a smooth and well-informed leadership transition.
The new Board of Directors convened for the first time in October 2021, comprising Tom Green (Chairman), Anuj Sharma, Joe Wong and Alexander Manu.
From the date of sale, one of the key priorities became the comprehensive transfer and documentation of Alex's intellectual capital, accrued over decades.

In early 2022, Aurelien Roques was appointed as the new General Manager of ManuFlo. The transition was both humbling and challenging for Alex—after decades of service, he stepped aside, vacating his long-held office and making space for a fresh chapter in the company's evolution.
Under Aurelien's fresh enthusiastic leadership, and with the board's support, the factory was fully modernized over a six-month period. This transformation included a complete revamp of operational systems, and an upgrade of the warehouse and utilities infrastructure, signalling a new phase for ManuFlo.

By September 2022, it became clear that Alex's deep industry knowledge, enduring relationships, and unflagging passion remained indispensable. Choosing not to fully part ways, he accepted the role of non-executive Director, continuing to serve on the board and offering guidance, mentorship, and stability to help propel the business toward its next level of growth.

The ManuFlo Story

Alex with mum Lena, the original surviving founding member, at the new ManuFlo factory foyer.

2023 – The ManuFlo Great Leap Forward

Under the stewardship of the General Manager Aurelien Roques, 2023 marked a period of bold transformation for ManuFlo. With a clear personal mandate and full board support, Aurelien embarked on a comprehensive mission to modernize the company's operational framework. Having already overhauled internal processes, his focus shifted to revamping the product range, renewing industrial certifications and material approvals, and refreshing the company's online presence. Notably, having departed after 20 loyal years of service in 2016, Felix makes a welcomed return to ManuFlo.

Regular monthly board meetings ensured alignment with key milestones and implementation timelines. Meanwhile, Occupational Health & Safety (OHS) and Workplace Health & Safety (WHS) became imperative focal points—integrated into every aspect of the evolving operation.
This ambitious professionalization wasn't without its challenges, as staff were called upon to adapt to a more finely tuned and structured environment.

To further progress ManuFlo's innovation roadmap—particularly the long-held **ME2020** and **ME999** vision projects championed by Alex —the company welcomed Shane Calitz as the new Manager of Operations and Product Development. In time, the revitalized management team secured board approval for a substantial investment into external engineering houses, bringing next-generation flow measurement solutions closer to reality.

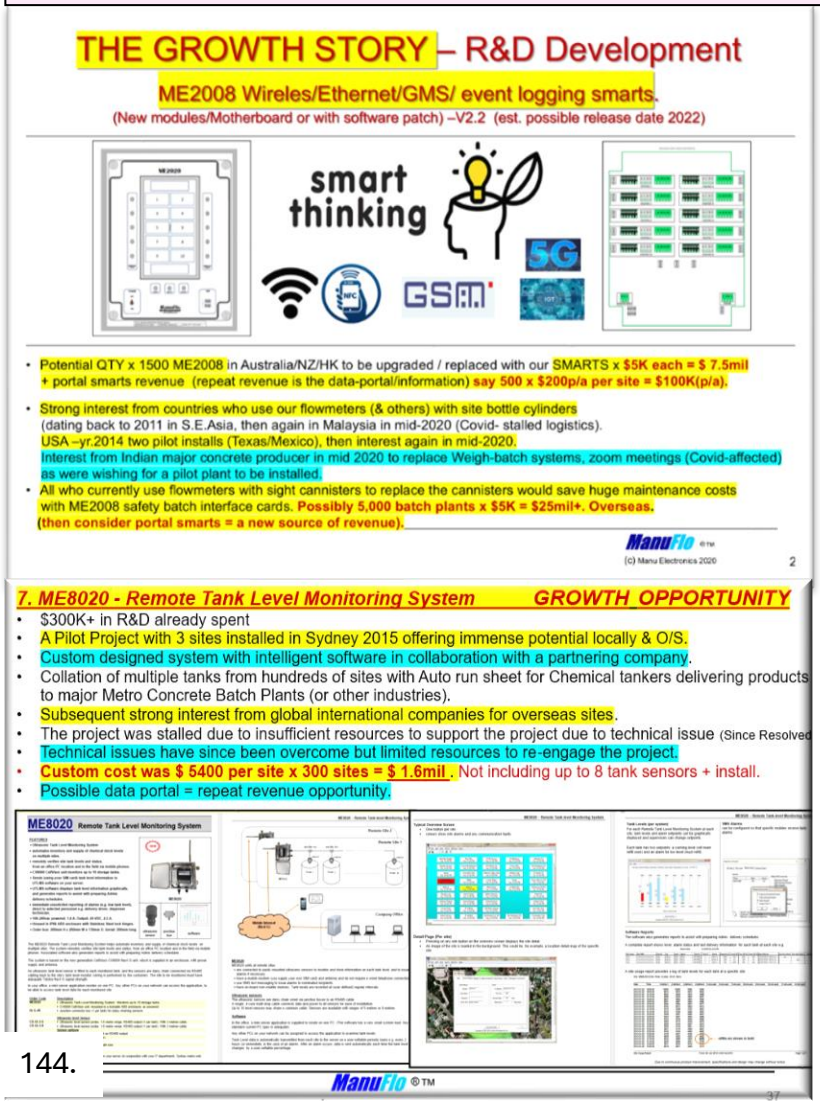
*New improved **UMT8***

*New improved **MES20HD***

ManuFlo 2023 Xmas Party Cruise;
GM-Aurelien, Alex, Bill, Felix, Dillon, Matine, Douglas, Tom, Joe, Phil, Mark, Harry, Vicki and Shane.

2023–2024: Watering the Seeds of Past Efforts to Bear New Fruit.

To make good the vision and tireless dedication of ManuFlo's founding pioneers, the team carefully evaluates all proposals for advancing the **ME2020** and **ME8020** developments into the newly consolidated **ME-X** solution. Strategic partners are selected, board approval is secured, and the management team begins executing an ambitious, high-stakes technical initiative with global potential. Parallel projects include the evolution of the next-generation Smart-Pipe system, and the release of the **MES20-HD v2** pulse-output meter—engineered for greater robustness, precision, and manufacturing efficiency. Alex—affectionately, and with due respect, referred to as "The Godfather"—takes deep satisfaction in witnessing these advancements take root and flourish.



*The original working models and prototypes listed in the ManuFlo 2021 IM, ripe for amalgamating and perfecting as the **ME-X** project.* ◄

The Manu Museum selection of original products spanning some 60 years of manufacturing history. ►

2024 – New Sales Drive and Expanding Opportunities

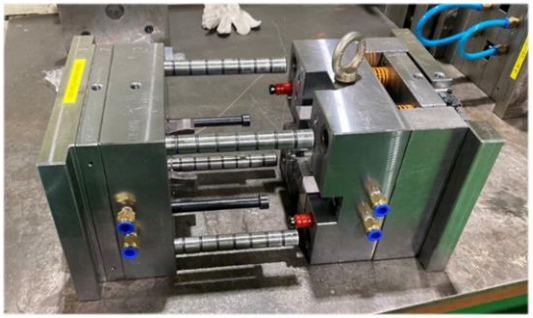
The Board had provided a strategic sales roadmap to shape the next phase of ManuFlo's growth, empowering the new management team to explore fresh opportunities and deepen existing partnerships. This initiative saw the appointment of Maxim Munoz as Business Development Manager—a focused, determined go-getter with a tenacious approach to business sales development.

With GM Aurelien at his side, Maxim embarked on a campaign to reinvigorate ManuFlo's presence in its largest export market, Malaysia, alongside other key Southeast Asian nations. Their visits reconnected the company with core clients and helped forge relationships with a new generation of stakeholders. These efforts are expected to yield strong commercial outcomes and reinforce ManuFlo's brand footprint across the region. Maxim also broadened the company's outreach by targeting a range of new diverse industry opportunities.

Export Alert- Sales to new destinations = Iceland & Canada.

Alex bidding his "Working Wife" Vicki fair well ◄

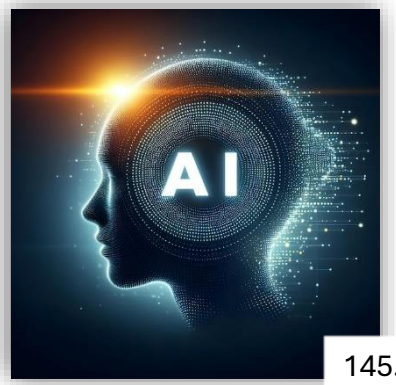
Anuj and Alex with Cricketer Glenn Mcgrath at the SCG. ►



*New **MES20HD-v2** ►*

New RPFS paddlewheel Rotor production mould. ◄

Artificial Intelligence is no longer the future—it's the force driving today's business excellence. ►



2024 – 2025: The ME-X Development Projects take off

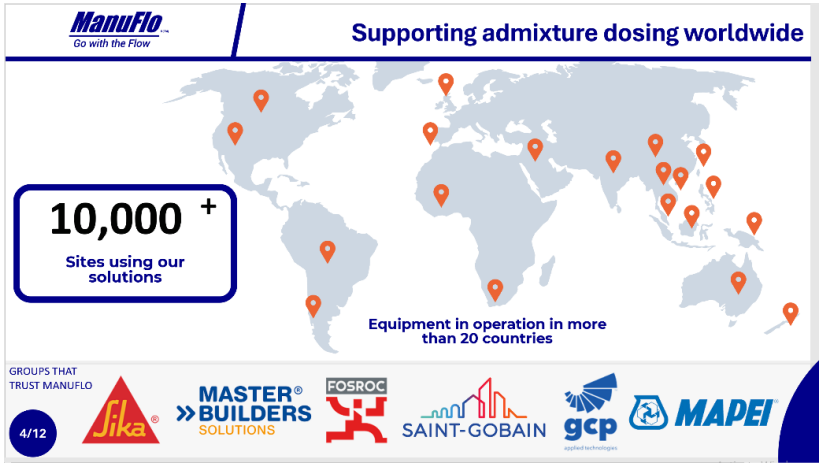
Meanwhile, ManuFlo's flagship product innovations—the **ME2020/ME8020** and **ME999**—were officially consolidated and rebranded as the **ME-X** Development Projects, backed by strong investment and engineering focus.

In a poignant chapter of transition, after 18 years of dedicated service, Vicki—respected for her deep operational expertise and close client rapport—bid farewell to the company. Later that year, Phil King also departed, drawing to a close and ending his own valued contribution. Bill also moved on to pursue new professional horizons. Their legacies, like those of so many before them, remain woven into the fabric of ManuFlo.

As the business continued to grow, fresh energy arrived in the form of new team members—Martina, Sam, Kim and Kevin—each bringing renewed energy and diverse strengths. With the next generation stepping up and export market momentum building, ManuFlo's global reach begins to scale new heights.

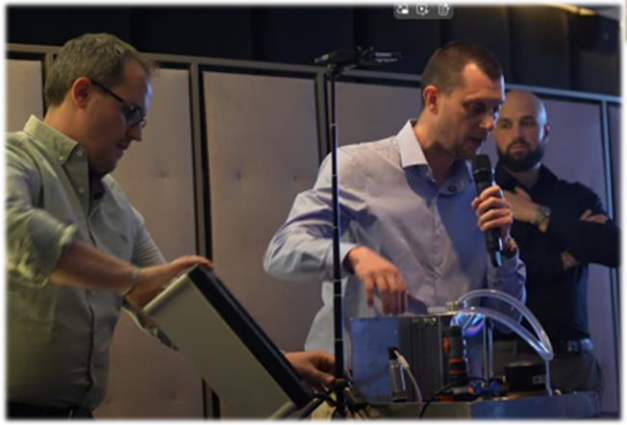
The ever watchful ManuFlo Board of Directors

New 2025 Product Catalogue with Next Generation Products



2025 – 60 Year Celebration Milestone Party.

ManuFlo proudly celebrated its 60th anniversary of involvement in manufacturing Flow Measurement products with a milestone event at the O-Bar, Australia Square Sydney. The evening brought together members of the Manu family, past and present staff, loyal customers, trusted suppliers, and long-standing service partners. It was a truly memorable night—honouring six decades of innovation, relationships, and legacy.



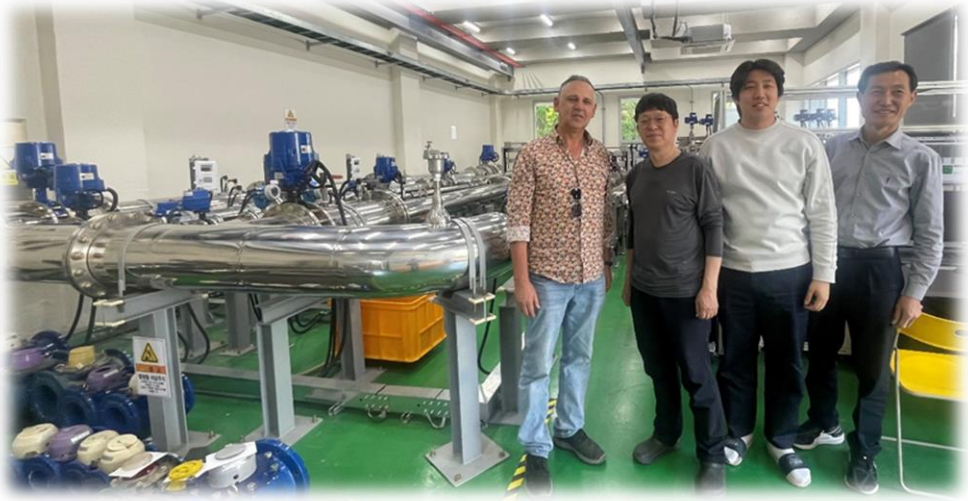
2025 – The 60 year anniversary and Beyond

With Tony Manu watching over from above and Alex continuing to serve on the Board of Directors—readily available to offer guidance and insight—ManuFlo is strongly positioned for a bright and sustainable future.

With Aurelien at the helm and the demands of daily operations lifted, Alex is free to pursue his many external passions—from chronicling the rich history of flow measurement technology to exploring a wide array of long-held interests.

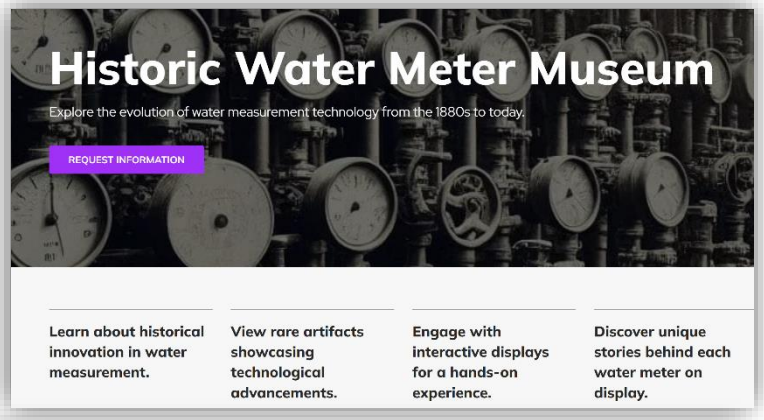
May ManuFlo continue to innovate, inspire, and endure. Live long and prosper.

ManuFlo
Flow Measurement Products



Alex meeting with Seoul Korea Water Meter Testing Lab officials

Alex's largely self-funded pet project- The Water Meter Museum, recognized by the Power House Science Museum ▶



60 years Anniversary

Some of the ManuFlo journey recited and available at YouTube. ▶

148. *Visit to the Boral Concrete Testing*

Alex with Layne Beachley Surf World Champ @WaterDay

https://www.youtube.com/@ManuFlo-Admixture-dispenser

The Manu Newsletters (extracts) - A reflective journey through time

From humble beginnings in early 1995 to their final issue in 2021, the Manu Electronics newsletters (created by Alex) charted nearly three decades of innovation, connection, and industry evolution. Each edition—whether posted, emailed, or tucked inside a shipment—offered a glimpse into the company's heartbeat: new product releases, project milestones, customer engagement, and technical insights.

These newsletters weren't just informational—they were relational. Periodic yet purposeful, they documented the rhythms of progress and the evolving landscape of customer needs.

Today, they serve as a time capsule of ManuFlo's legacy, capturing a story of consistency, adaptability, and dedication across generations.

Issue 1, June 1995

MANU ELECTRONICS PTY LTD
FLOW CONTROL SYSTEMS ACN 002 946 303

UNIT 4, 104 OLD PITTWATER ROAD
BROOKVALE, NSW 2100, AUSTRALIA
PHONE: (02) 9938 1425, 9905 4324
FAX: (02) 938 5852
MOBILE: 018 616 248

JUNE 1995 NEWSLETTER

Dear reader,

This newsletter is to inform you of the latest Manu Electronics product releases with accompanying product brochures. Also results of the January survey will be disclosed, found at the end of this newsletter.

Subjects outlined with accompanying brochures are:

1. Production phaseout of MEK20 & MED20 pulse flowmeters
2. KGG20 & KGG20LCD4 flowmeters
3. New MES20 pulse flowmeters
4. ME6000M batch monitor printer driver system package
5. ME693 & ME693PC 6 channel counter computer interface card
6. Magmaster electromagnetic flowmeter
7. Slump stand, batch room dual monitor system

1. Production phase out of MEK20 & MED20 pulse flowmeters

The MEK20 pulse flowmeter has been phased out of production. One last production run has made possible availability of complete units to approximately end of Oct.-95, unless stocks run out earlier. The complete compliment of spare parts will be available for at least 8 years. (excluding body castings).
The lesser known MED20 pulse flowmeter used primarily for chemicals corrosive to brass has been completely phased out. Limited spare parts will be available for 1 year. Both meters have been replaced by the one meter, the new **MES20**.

2. KGG20 & KGG20LCD4 flowmeter range

Another pulse output admix flowmeter (which has been in production since 1990) is the KGG20 pulse flowmeter originally manufactured for the Asian market, and is relatively unknown in Australia. Local clients should know that the KGG20 is readily available as an alternative flowmeter (at a cheaper cost) to the new MES20.

KGG20 price: $240.00

The KGG20LCD4 digital LCD flowmeter is a portable resetable flowmeter, ideal for applications where there is no external power or only manual batching operations are necessary. (Readout in Litres or with decimal point).

KGG20LCD4 price: $310.00 KGG20LCD4DP price: $320.00

Issue 2, February 1998

NEWSLETTER
Issue 2, February 1998

MANU ELECTRONICS PTY LTD
Flow Control Sys
ACN 002 946 303

Meet the Manu Electronics Team.

As most of our clients deal with us over the telephone, we thought that this would help you put a face to the names.

From left to right: Felix Palabino, Jess Baylon, Alex Manu, Lena Manu, Tony Manu, Hannele "Annie" Manu and Stefan Grange. (Joe Hajdu not pictured).

Inside This Issue

- **Electromagnetic flowmeters used on admixture delivery tankers with excellent results.**
- **Portable digital resetable counter flowmeters - the economic solution to measurement of liquids**
- **Sales expand to the middle east**
- **Manu MES40 flowmeters used around the clock at the Hong Kong new airport construction site.**
- **Australia's livestock healthier - thanks to the new Manu Nutrient Dosing Controller... says farmers and DPIF.**
- **Milestone - Two thousandth Manu preset water batching system sold**
- **ME6000M batch monitor provides QA batch printouts for manual concrete production plants**

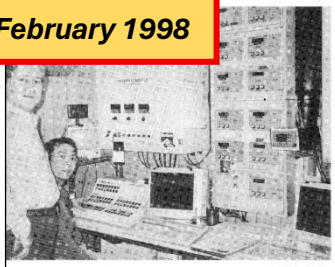
.....and more news inside.

Manu Electonics new internet website.
We launched our own homepage website this month. Although experimental, it was time to join the growing group of companies found on the world wide web.

Our home page is - http://www.ozemail.com.au/~**manu**/index.html
Email us at - manu@ozemail.com.au

MANU ELECTRONICS
Flow Control Systems

page 1



estone - two thousandth preset water system

month the two thousandth preset automatic batch controller system ed specifically with the Rota pulse (paddlewheel) flow sensor was sold for surement of plant water in a concrete plant. The latest preset controller, the 95-7, with significant improvements since the first ME182-7 model duced in 1982, retains the user friendly switch operation format and easy in connector. The easy operational format and economical price of the m has been the main reason for its continued success. Today the roller/paddlewheel system is used in many varied liquid process control ations, where simplicity of operation is a primary concern. Overall since the ption of Manu preset batch controllers, there are now over 10,000 units in ation with various flowmeters.

es auto batch printouts

but never promoted. It is ideal in batch controllers are used (non- printout report to satisfy QA

s can be monitored and logged for generated automatically, with real ation to printers is via a serial DB9

e contactors should be used when driving pumps. In some cases cheaper ent draw on many pumps is high enough to temporarily latch or permanently gh the Manu controllers' 240vac drive contact drops off at batch target, the Industrial grade contactors are available from Manu Electronics, contact us

ave questions or comments, please contact us on the numbers below or

+61 2 99381425 or 99054324
+61 2 99385852
mail: manu@ozemail.com.au

page 4

The ManuFlo Newsletters (extracts)– A reflective Journey through time

Issue 3, November 1998

NEWSLETTER

MANU ELECTRONICS PTY LTD

Issue 3, November 1998

Flow Control Systems

ACN 002 946 [illegible]

Inside This Issue

- New MBI200 Insertion Magnetic Flow Sensor, handles difficult liquids at a big saving
- New highly durable and abuse proof flowmeter near production steps for mobile concrete trucks, slumpstands and other applications
- Checking In on South America
- ME8000M batch monitor, with new improved software, provides QA batch printouts for manual concrete production plants
- Australians abroad, spreading Aussie know how
- ME697 new interface card, supports upto six admixture flowmeters with volume counters and safeties, suits most PLC computer systems

Onsite at the Eastern Distributor Road Project

.....and more news inside.

MANU ELECTRONICS PTY LTD
FLOW CONTROL SYSTEMS ACN 002 946 [illegible]

Newsletter - Issue 3 page 1

New Product - MRP22 LCD FLOWMETER

****** Finally a flowmeter designed specifically for the [illegible]dustries ******

Finally, very soon.....the MRP22 flowmeter series, built to survive.

* No more screws to be covered in concrete
* No more covers breaking
* No more magnets disappearing
* No more chambers breaking
* No more filters required
* No more couplings required
* No more problems with compressed air, recycle water, frozen water, water hammer, flow range problems, accessing battery.

We have listened to the concrete industries' headaches for too long. Over the last year, the Manu Electronics R&D team have designed a flowmeter especially for the concrete industry, for use on agitators and slumpstands. We have invested in quality dye casts, to construct a purpose built flowmeter product. Made of the toughest materials, the soon to be released MRP22 built for the toughest of environments. When compared to previous flowmeter models, the MRP22 will save Boral, CSR, Pioneer and other companies, significant ongoing maintenance and spare parts costs as experienced with other type of flowmeters.

The MRP22 flowmeter, available from Manu Electronics and distributors - from December 1998.

Note: The MRP22 will also be adaptable for pipe sizes upto 200mm ID, expanding application uses.

Manu products in CHILE South America.

Since the early 1990's, Master Builders Technologies (MBT) CHILE, have been purchasing and using Manu Electronics Flowmeters and Preset Batch Controllers for measurement and dispensing of their concrete construction chemical products. The equipment is used in the their production factory and also dispensing the admixture products, at their clients local pre-mix concrete plants.
Many thanks are extended to Mr Cristobal Soler, for his confidence in our products. While residing and working for MBT in Australia, Mr Soler was first introduced to our products. On his return to Chile South America, he began introducing our products to that part of the world.

Millennium 2000 bug

As the year 2000 approaches, we have received a lot of inquiries regarding the effect the millennium changeover may have on our products. As our manufactured and onsold equipment have no real time clocks, the equipment itself is not an issue. The only exception being the ME6000M batch monitor, which has a time clock, but it too is fully compliant. Contact us for a faxed copy of our 2000 compliance statement.

MANU ELECTRONICS PTY LTD
FLOW CONTROL SYSTEMS ACN 002 946 [illegible]

Newsletter - Issue 3 page 3

Issue 4. October 2003

Issue 4

October 2003

Newsletter

ManuFlo ®TM

A division of Manu Electronics

Please visit our website at www.manuelectronics.com.au

ManuFlo launches FRT303 Flowrate/Totaliser LCD Indicator

Now available is ManuFlo's exciting new product – the FRT303 Flowrate Totaliser is designed to operate with a wide range of pulse/signal output or coil output flowmeters, providing an:

- instantaneous Flowrate reading, and
- a resettable Total display and Grand Total.

The FRT303 is applicable for many applications including irrigation, and concrete plant slump stands.

To toggle the FRT303's LCD display between the Total and the Grand Total, simply touch the front panel button once. To reset the Total, touch the front panel button twice.

Power is via either an internal Lithium battery which has a life of up to 10 years; external 5-25 VDC supply; or loop powered.

The FRT303 has fully programmable optional features including pulse output, 4-20mA output, and Hi/Low flow setpoint outputs. All functions are entered via internal keypads and a menu display.

The LCD can be programmed to show flowrate and totals in a number of different units. A hinged lid protects the LCD from ultraviolet light.

The FRT303 will accept flowmeter input pulses from 0.2Hz to 2kHz.

All application parameters will be pre-programmed according to your requirements, including display unit preferences and the flowmeter K-factor.

The FRT303 is provided in a compact IP65 Polycarbonate enclosure with molded mounts, allowing it to be used in a wide range of applications.

The FRT303 displays Flowrate, Resettable Total, and Grand Total.

Special points of interest:
- New products–
- Indicators,
- Electromagnetic Flowmeters,
- Remote Monitoring,
- Updated web pages!

Inside this issue:

See datasheet at http://www.manuelectronics.com.au/pdfs/FRT303_datasheet_2p.pdf

New products from ManuFlo's extensive R&D

ManuFlo strives for continuous product improvement. Extensive R & D efforts at ManuFlo in 2003 have produced a string of new products that are now available or coming soon.

This newsletter describes the now available: FRT303, the range of RMS Electromagnetic Flowmeters, the ME5-T Totaliser Indicator, the ME5-F Flowrate Indicator, and the ME8000 Remote Tank Level Monitoring System which communicates using SMS messages via GSM/CDMA mobile networks.

Coming soon is the ME3000, which is the next generation of ManuFlo Batch Controller, with front panel button entry of settings and controls. Front panel indicators will include a 2x16 character LCD with backlighting, and LED indications.

ManuFlo ®TM
FLOW MEASUREMENT PRODUCTS
A division of Manu Electronics Pty Ltd

Phone +61 2 9938-1425 or +61 2 9905-4324

Fax. +61 2 9938-5852

Email: sales@manuelectronics.com.au

Please visit our website at www.manuelectronics.com.au

"Ventis secundis, tene cursum"

Company Milestones:

- **1965**: Manu Electronics established by Mr Tony Manu.
- Bottle charge/discharge systems manufactured.
- **1971**: Developed UML9 Batch Controller and first 20mm flowmeter with 1ml/1pulse.
- **1976**. Developed UME10 Batch Controller and second model 1ml/1pulse output flowmeter (MEK20). Exports commence to SE Asia.
- **1982**: ME182, first panel-mount compact Batch Controller.
- **1984**: First Batch Controller interfaced with PLC/Computer–controlled batch plants. Exports commence to USA.
- **1988**: ME188, upgraded Batch Controller with more safety features.
- **1993**: ME693, 6 channel flowmeter to computer counter divider interface card.
- **1995**: ME995 Batch Controller. More variants to suit Admixture dispensing requirements.
- **1995**: MES20 1ml/1pulse flowmeter, with nutating disc measurement for less blockages and less maintenance.
- **1997**: ML697, 6-channel flowmeter-to-computer-counter divider safety (and manual batch) interface card.
- **2000**: ML2000, 6 channel microprocessor management safety interface card. For computer controlled batch plants.
- **2001+**: new microprocessor based products, new Batch Controllers, Flowrate Indicators, Remote Monitor, and budget-priced Electromagnetic Flowmeters.

ME8000 Remote Tank Level Monitoring System

The ME8000 automates the **inventory and supply of chemical stock levels across multiple sites** It time stamps every batch quantity, and records the last 1000 operations - ideal for traceability of batches.

Site status and tank levels can be remotely verified from an office PC location and in the field via mobile phones.

The ML8000 is easy to set up, install and control via simple SMS messages. There is minimal extra wiring needed to monitor and control a site.

The ME8000 uses SMS text messages to send immediate unsolicited reports of alarms (e.g. low tank level), direct to the mobile phones of selected personnel e.g. delivery driver, dispenser technician.

A site can also be remotely controlled by any authorised SMS-capable mobiles.

Communication is via GSM (metropolitan) or CDMA (rural) mobile networks to an office PC and/or mobile phones.

The ME8000 incorporates into existing ManuFlo (or other) Admixture systems e.g. to ME2000, UIC/A or ME995.

ME8000 remotely verifies site status and tank levels, from an office PC or in the field via mobile phones.

See datasheet at http://www.manuelectronics.com.au/pdfs/me8000_datasheet.pdf
See presentation at http://www.manuelectronics.com.au/pdfs/MI-8000_presentation.pdf

Issue 5, December 2005

Issue 5

December 2005

Newsletter

ManuFlo ®TM FLOW MEASUREMENT PRODUCTS

A division of Manu Electronics Pty Ltd

Please visit our website at www.manuelectronics.com.au

Seasons Greetings!

from all of us at Manu Electronics

Special points of interest:
- New products–
- Batch Controller,
- Electromagnetic Flowmeter,
- Truck Mounted Printer,
- 8-channel Safety Interface

ANNUAL FACTORY HOLIDAY CLOSURE
Our last day of trading will be Friday 23 December 2005, and we will re-open on Monday 9th January 2006

ME3000--next generation Batch Controller, with keypad

- **Programmable—counts in ml, Litres, KL, ML.**
- **IP64 front face for outdoor use.**
- **keypad input for batch setting, and configuration.**
- **2 line x 16 character display. 3 indicator LEDs.**
- **alarm messages shown on LCD.**
- **optional RS232 printer interface for batch tickets.**
- **internal downloadable Event Log.**
- **Preact, max batch limit and other safety features.**

Inside this issue:

The ME3000 microprocessor-based preset Batch Controller can be used with pulse output flowmeters of any size, for preset liquid batch control applications. The Batch Controller is fully programmable, and has a range of safety features including pulse fail detection.

The IP64 front face protects against water splashing, making the ME3000 ideal for batching applications outdoors.

With the ME3000 using the same instrument housing and the same 10-pin Weidmuller receptacle plug as other ManuFlo Batch Controller models, changeover or upgrade is instant with no rewiring necessary.

The ME3000 can be easily interfaced with PLCs (through the optional computer control interfaces), thus incorporating the controller's safety features and providing a backup batch facility. An optional RS232 interface allows the printing of batch tickets through an associated printer, and the downloading of the internal Event Log to a laptop/PC for analysis.

See datasheet at http://www.manuelectronics.com.au/pdfs/ME3000.pdf

Page 1 | Page 2 | Page 3 | Page 4 | Newsletters | Home

Page 1 | Page 2 | Page 3 | Page 4 | Newsletters | Home | Issue 5

Customer visits

Throughout 2005, ManuFlo having been visiting some of our international customers in the Asia Pacific region.

General Manager Alex Manu and Operations Manager Chris Ramos travelled during the year to New Zealand, Singapore, Malaysia, Vietnam and Bangkok. In 2006, trips are planned to Hong Kong, China, The Philippines, The Middle East and South America.

Our visits are an opportunity for us to personally meet our customers and to provide training, give presentations and demonstrations, answer any equipment installation or operation questions, and to visit installation sites to better understand our customer needs.

Hawkesbury Canoe Classic

In October 2005, Alex Manu took part in the Hawkesbury Canoe Classic, proudly sporting the ManuFlo logo.

The Canoe Classic is an event held to raise funds for the Arrow Bone Marrow Transplant Foundation.

Over the last 11 years, the paddlers in this 111km marathon race on the Hawkesbury River near Sydney have raised more than $1.3 million for medical research projects, facilities and scholarships.

See www.arrow.org.au

Page 1 | Page 2 | Page 3 | Page 4 | Newsletters | Home

Issue 6, May 2007

Issue 6

May 2007

Newsletter

ManuFlo ®TM FLOW MEASUREMENT PRODUCTS

A division of Manu Electronics Pty Ltd

Please visit our website at www.manuelectronics.com.au

POINTS OF INTEREST:
- Hot Water meters
- Irrigation meters
- Nutrient Dispensing

INSIDE THIS ISSUE:

Gold Coast Water - water study

South East Queensland is experiencing [illegible] 5 water restrictions apply from 10 April 2[illegible]

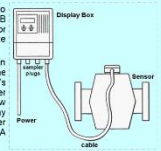
Queensland's Gold Coast Water is conc[illegible] on domestic water usage to determin[illegible] water is used in the average home and the garden, bathroom, kitchen etc).

The study is possible because ManuFlo can add high pulse output capability (72.5 pulses/Litre) to domestic water flowmeters for precision data collection and logging (model CTS-S, pictured). *(continued page 3)*

ABB appoints ManuFlo for Tradewaste

ABB has announced that ManuFlo will be exclusive agents for ABB Electromagnetic Flowmeters for Sydney Water Tradewaste applications.

ManuFlo has unmatched expertise in customising and programming the ABB components to Sydney Water's requirements, creating a flowmeter configuration comprising a flow sensor wired to a remote Display which is fitted with MIL-spec sampler plugs to provide pulse and 4-20mA output.



ManuFlo's MFS Magmaster range of Electromagnetic Flowmeters for Tradewaste are virtually maintenance free, with no moving parts and an obstructionless bore. *(continued page 3)*

Hot Water Flowmeters

ManuFlo has enhanced its Hot Water flowmeter range, introducing the SW-H type turbine flowmeters that operate to 130°C, are available in sizes from 50-200mm, and also have optional pulse output. *(continued page 2)*

Page 1 | Page 2 | Page 3 | Page 4 | Newsletters | Home

ManuFlo ®TM Page 1 | Page 2 | Page 3 | Page 4 | Newsletters | Home Issue 6

Visit to China

ManuFlo's latest visit overseas was to China, visiting clients including our major Admixture customers Sika (Beijing), Grace (Shanghai), and BASF and W.R. Grace in Hong Kong.

These visits are an important opportunity for us to better understand our clients' operations and needs. We usually give basic training on equipment operation, answer any questions on operational issues, provide suggestions to solve application needs, and demonstrate new products for Admixture measurement applications covering Admix production, delivery, final usage and dispensing in Premix plants.

ManuFlo ®TM
FLOW MEASUREMENT PRODUCTS
A division of Manu Electronics Pty Ltd

41 Carter Road, Brookvale
NSW 2100 Australia

Phone: +61 2 9938-1425 or +61 2 9905-4324

Fax: +61 2 9938-5852

Email: sales@manuelectronics.com.au

Please visit our website at www.manuelectronics.com.au

ME5LCD00P-F flowmeters (LCD Flowrate display)

ME995-7 Batch Controller

ME5-T resettable Totaliser Indicator

SM500-F Field Mountable Videographic Recorder

Remote Tank Level Monitoring System

Flowmeters, Resettable Flowmeters, Batch Controllers, Flowrate/Total Indicators, Monitoring Systems, and more ...

Page 1 | Page 2 | Page 3 | Page 4 | Newsletters | Home

The ManuFlo Newsletters (extracts)– A reflective Journey through time

Issue 7, September 2008

Issue 7
September 2008

Newsletter
ManuFlo ®TM FLOW MEASUREMENT PRODUCTS

Please visit our website at www.manuelectronics.com.au

A division of Manu Electronics Pty Ltd

Page 1 | Page 2 | Page 3 | Page 4

POINTS OF INTEREST:
- Miss World Australia
- ME6008M
- Magflow Sensor

INSIDE THIS ISSUE:

	Page
Miss World Australia	1
ME6008M	1
Product Improvements	2
RPFS flowsensors	2
Irrigation Monitoring	2
Magflow Sensors	3
TMP Printer System	3
Miss World Australia (continued)	3
Welcome Vicki	4
Renovations	4
Helpful Hints	4

ManuFlo sponsors Miss World Australia Katie Richardson

ManuFlo is proudly sponsoring Katie Richardson, Miss World Australia 2008.
20-year-old Katie is a full-time university student, studying for a Bachelor of Nutrition and Dietetics degree at the University of Wollongong.
For Katie's upcoming charity events, see her website at

http://www.missworldaustralia.com.au/krich1.html *(continued page 3)*

new ME6008M Batch Monitor/Printer

Due to ongoing industry requests, the ManuFlo ME6000 Batch Monitor Printer Driver Unit has been updated and re-designed as the new ME6008M, which can **monitor and print up to 8 channels of admixture or water and provide a QA batch printout**, for use in manual concrete batch plants.
The ME6008M has been designed to interface from Flowmeters or Batch Controllers to serial printers (or to PCs via Hyperlink software), and will provide automatic end of batch printing, and datalogging of at least 500 batch events. Grand Totals and the batch history can also be printed (or dumped to a PC) on demand. All records are time stamped from the unit's Real Time Clock, and have a Batch Number ID.
The ME6008M is simple to install - it is the same size as the ME995-series Batch Controllers, and has the same cutout. We can also supply a LX300+II dot matrix printer for the batch and log printouts.
The ME6008M is fully programmable, and the user can set parameters including K-Factors (i.e. pulses/Litre, to scale the pulses received from each attached flowmeter).
See http://www.manuelectronics.com.au/pdfs/ME6008M.pdf for datasheet.

1

ManuFlo ®TM Page 1 | Page 2 | Page 3 | Page 4 | Newsletters | Home Issue 7

PRODUCT IMPROVEMENTS

Locking Ring

The MRP20 and MRPU-type water flowmeters are now manufactured with a new style screw-on Locking Ring that is simpler to fit and remove, making it easier to access the flowmeter internal calibration adjustment controls.

MRP20 flowtube

The MRP20-type water flowmeters now have a slimmed-down flowtube (same connection [illegible] lower weight unit.

[illegible]owsensors

[illegible] RPFS-type Rota Pulse Flow Sensors are a simple and cost-effective solution for medium to high flow measurement applications. The sensors are a paddlewheel insertion type, and come in 3 model variants:
- RPFS-P with plug-in cable, for transistor pulse connection;
- RPFS-H for hot liquids to 120 °C; and
- RPFS-L for use with battery-operated devices;

all of which insert directly into a large range of pipe adapter fittings, covering standard pipe sizes 15 to 150mm.
With only one moving part, limited intrusion into the pipe, and flow-through design, the RPFS allows accurate measurement with virtually no headloss. It is used in a large variety of applications, including measurement of water in concrete batch plants, measurement of petrol/diesel, water irrigation, salt water, chlorinated water and countless other low viscosity liquid measurement processes.

Remote monitoring and control of playing field and parkland irrigation

E State Automation, a Sydney-based telemetry engineering company, has selected ManuFlo's Roto Pulse Flow Sensor to use with their "PlayState" remote management system for playing fields and parklands. Over 20 units have been installed.
With the monitoring of flow at an irrigation pump header tank location, there is typically no power available. The most cost-effective and efficient solution was to use a ManuFlo RPFS-L sensor, which has inductive coil low current pulse output for use with battery-powered devices.
E State's "PlayState" system offers councils an integrated management solution, enabling the remote monitoring and control of irrigation, lighting and access of their park sites directly from an office desktop computer. Communication with each park site for the scheduling of control operation is via the internet. Alarming of fault conditions at the park site is via SMS. Sporting Clubs can also use SMS to control individual park lighting.
The technology has been embraced by a number of Sydney Councils, as it provides a powerful management tool that saves council significant time, energy and money in the management of its assets. In particular, the improved monitoring of the water usage (and possible leaks) has lead to significant savings of this important resource.

2

Page 1 | Page 2 | Page 3 | Page 4 | Newsletters | Home

Issue 8, August 2011

Issue 8
August 2011

Newsletter
ManuFlo ®TM FLOW MEASUREMENT PRODUCTS

Please visit our website at www.manuelectronics.com.au

A division of Manu Electronics Pty Ltd

Page 1 | Page 2 | Page 3 | Page 4

POINTS OF INTEREST:
- CMS, PMS Flowmeters
- ME6008M
- TMP-1

INSIDE THIS ISSUE:

	Page
CMS CompactMag	1
PMS ProcessMaster	1
Logger for ME2008	2
TMP-1 Ticket Printer	2
2011 Client Visits	3
Upcoming Visits	3
MES20 milestone	3
CTS range expands	3
New Staff	4
Helpful Hints	4

CMS CompactMag

- **Battery powered compact electromagnetic flowmeter.**
- Economically priced.
- Easily replaceable batteries (6x AA alkaline batteries).
- Resetable Totaliser for portable batching.
- Cumulative Totaliser for inventory.
- Instantaneous Flowrate display for flow monitoring.
- Virtually maintenance free, with no moving parts.
- Robust polypropylene construction.

Sizes 25, 50 & 80mm.
Ideal for irrigation and bore water.

PMS ProcessMaster

- **Electromagnetic flowmeter.**
- AC and DC powered versions.
- Ideal for auto and manual batching applications.
- Handles wide range of aggressive liquids and slurries.
- Robust construction for industrial use.
- Display shows Flowrate and Total (resettable via optional reset button for manual batching).
- Prefitted Stainless Steel Earthring.
- Automatically uploads calibration factors from flowsensor.

Remote version | Integral version.

Sizes 3 - 250mm

The ProcessMaster™ range of electromagnetic flowmeters are wired, programmed, tested and supplied by ManuFlo. They are capable of operating over very wide flowranges, and offer quality performance with accuracy of ± 0.4% of rate. With no moving parts and an obstruction-less bore, this type of flowmeter guarantees the highest level of performance, unaffected by specific gravity or viscosity variations, or the most contaminated of fluids, whilst maintaining a high degree of accuracy for liquids with conductivity ≥ 5µS/cm.

ManuFlo ®TM Page 1 | Page 2 | Page 3 | Page 4 | Newsletters | Home Issue 8

Helpful Hints

- **For proper operation, and to not void your warranty, equipment must be used as supplied** e.g.
  - each MRPU5 flowmeter head is factory programmed for a particular pipe diameter, and is calibrated for the pipe adapter it is supplied with (insertion depth of the paddlewheel can affect calibration). For correct readings, do not place an MRPU5 head onto a pipe adapter that is a different size to the one supplied.
  - each electromagnetic flowmeter has its display box factory matched and programmed to the particular characteristics of the flow sensor tube. Do not connect a display to a sensor other than the one it was supplied with, as the readings may then be incorrect.
- If sending goods to us for calibration/upgrade/repair, so that your order is not delayed please be sure to **include a purchase order with the goods**, giving:
  - [illegible]dress;
  - [illegible]rs do not deliver to Post Office boxes); and
  - [illegible]r the work needed.

[illegible]se declare the value of goods as AUD50.00 or less. Otherwise, Australian Customs will attempt to charge unnecessary duty, which will delay shipment clearance.
- If sending goods to us for calibration/upgrade/repair, **ensure the goods are suitably packed** i.e. the packing box is strong enough for the weight of the shipment; use packing material (bubble wrap, foam, crushed newspapers, or rags) to protect the enclosed items from damaging each other whilst in transit.

ManuFlo ®TM
FLOW MEASUREMENT PRODUCTS
A division of Manu Electronics Pty Ltd

41 Carter Road, Brookvale
Sydney NSW 2100 Australia
Phone: +61 2 9938-1425 or +61 2 9905-4324
Fax: +61 2 9938-5852
Email: sales@manuelectronics.com.au

Please visit our website at www.manuelectronics.com.au or www.manuflo.com

Go with the flo

New Staff

Grace Wang
Asia Market Co-ordinator

Wilson Alba
Technical (ME2008 and Magflow Specialist)

4

Page 1 | Page 2 | Page 3 | Page 4 | Newsletters | Home

Issue 9, July 2012

Issue 9
July 2012

Newsletter
ManuFlo ®TM FLOW MEASUREMENT PRODUCTS

Please visit our website at www.manuelectronics.com.au

A division of Manu Electronics Pty Ltd

Page 1 | Page 2 | Page 3 | Page 4

POINTS OF INTEREST:
- AMM Admix Mini Mag
- Irrigation Flowmeters
- Dosing Controllers

INSIDE THIS ISSUE:

	Page
Admix Mini Mag	1
Shotcrete System	1
New Controllers	2
Irrigation Meters	2
Client Visits	3
Tradewaste Meters	3
Water Studies	4
Wireless Slumpstand System	4

AMM - Admix Mini Mag

New!

- Low cost electromagnetic flowmeter - virtually maintenance free, with no moving parts.
- Obstructionless bore means no blockages, a particular advantage in very cold climates or with dirty liquids.
- 15 & 20mm models are directly interchangeable with MES20 20mm flowmeters.
- +12VDC powered (optional 24VDC).
- 1000 pulses/Litre (15, 20mm sizes), 500 pulses/Litre (25mm size).
- Very compact and light weight design.
- Accuracy is virtually unaffected by varying viscosity or specific gravity of liquids.
- PVDF lined sensor, Stainless Steel 316 electrodes with integrated grounding rings.
- Supplied with BSP (female) couplings.

Ideal for admixture.
Sizes 15, 20 & 25mm.

The AMM is designed for the economical measurement of chemical liquid admixtures and any other conductive liquid, with no head losses and virtually no ongoing maintenance. The 1 pulse/1 ml output of the 15 and 20mm sizes makes them a direct replacement of MES20 admixture flowmeters in applications where there is a high content of solids in the measured liquid. The processor/electronics is integrated with the flowmeter sensor, so these two elements form a very compact package.
The Admix Mini Mag is ideal for measurement of admixtures in concrete batch plants, flowrate and total display for shotcreting and general process batching applications, and can be used directly with the complete range of ManuFlo or other Instrumentation. Contact ManuFlo if uncertain of use.

Shotcrete System

- Cost effective system for dosing/batching/control of shotcrete chemicals.
- Compact, +2% accuracy.
- is an FRT303 Totaliser/Flowrate indicator in an outer Stainless Steel housing box, hinged lid, connected to an AMM15 magflow.
- The FRT303 is customized for this system with a backlit LED display.
- 12-24VDC powered. Complete wired system.

1

Page 1 | Page 2 | Page 3 | Page 4 | Newsletters | Home

ManuFlo ®TM Page 1 | Page 2 | Page 3 | Page 4 | Newsletters | Home Issue 9

ME995-2CS and ME995-3KS

New!

ME995-2CS


ME995-3KS

Straight mls dose selection: no x10 scaling on doser dials = no confusion

ManuFlo have two additional models to their range of ME995 dosing Batch Controllers. On dosing Batch Controllers, dials on the upper right are used to set the dosage rate, and the lower dials are for setting the batch quantity.

- [illegible] a x10 scaling (which may cause confusion as to the value selected), [illegible]out any multiplication scaling i.e. the dial value represents a direct [illegible]s fixed at a zero value. The two new models are:

[illegible]r can select up to 990 mls/m^3 in 10 ml increments.
[illegible]uantity in m^3, up to 9.0 m^3, in increments of 0.1 m^3.

- the display shows the delivered batch quantity in m^3.

- **ME995-3KS** :
  - the dosing dials are mls/100-kg of cement. User can select up to 990 mls/100-kg in 10 ml increments.
  - the lower dials set the batch quantity in kg of cement, up to 9000 kg, in increments of 10kg.
  - the display shows the delivered batch quantity in kg.

The ME995-2C and ME995-3K models (with x10 scaling on the doser dials) will continue to be available, and existing ME995-2C and ME995-3K models in the field can be returned to the factory for upgrading.

IRRIGATION FLOWMETERS

ManuFlo have a wide range of flowmeters for irrigation applications, including:


MEH flowmeter
- multi-jet and turbine types.
- running mechanical total.
- ideal for gravitational flows or low pressure applications.
- ±2.5% accuracy.
- optional pulse output.
- in sizes 15-250 mm.


New!
PWMR flowmeter
- Used for dirty water in agriculture applications that require meters to work in Difficult conditions.
- Solid and robust design.
- Sizes 50 - 200mm.
- Running mechanical total.
- Inbuilt pulse output.

2

Page 1 | Page 2 | Page 3 | Page 4 | Newsletters | Home

Please see our webpage at http://www.manuelectronics.com.au/pdfs/irrigation.pdf for more information.

Issue 10, June 2013

Issue 10
June 2013

Newsletter
ManuFlo ®TM FLOW MEASUREMENT PRODUCTS

Please visit our website at www.manuelectronics.com.au

A division of Manu Electronics Pty Ltd

Page 1 | Page 2 | Page 3 | Page 4

POINTS OF INTEREST:
- Tank Level Monitoring
- Tradewaste flow meters and calibration
- SMP battery mags
- Long stem MRPU5 for larger pipe sizes
- ME6008M batch logging/printing
- facebook, Linkedin

INSIDE THIS ISSUE:

	Page
Remote Tank Level Monitoring System	1
Tradewaste Meters and Calibrations	1
SMP battery mags in 25, 50 & 80mm sizes	2
AMM update	2
Higher Resistant Magnet for ME520	2
Long Stem MRPU5	2
Kayak Adventures	3
ME6008M Batch Printer	3
Custody Transfer Ticket Printing	4
facebook, Linkedin, vimeo	4

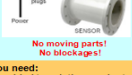
ME8020 Remote Tank Level Monitoring System

New!


Helps automate inventory and supply of chemical stock levels on multiple sites. The system remotely verifies site tank levels and status (up to 12 tanks per system), from an office PC location and in the field via mobile phones. Associated software also generates reports to assist with preparing Admix delivery schedules.
The system is based on the new generation CellVisor CV6000 Next G unit, which is supplied in an IP65 enclosure, with power supply and antenna.
An ultrasonic tank level sensor (8 metre range) is fitted to each monitored tank, and the sensors are daisy chain connected via RS485 cabling back to the site's tank level monitor (wiring is performed by the customer). The site to be monitored must have adequate 4G signal strength.
In your office, a mini server application resides on one PC. Any other PCs on your network can access the application, to be able to access tank level

Tradewaste Flowmeters and Calibration Checks

With no moving parts and an obstruction-less bore, the WaterMaster tradewaste flowmeter (wired, programmed, tested and supplied by ManuFlo) provides the highest level of performance for tradewaste discharge applications.
For Sydney customers:
- the flowmeter also has tradewaste sampler plugs fitted and is fully compliant to Sydney Water requirements.
- ManuFlo can perform your yearly on-site tradewaste flowmeter calibration checks and issue a calibration certificate.



No moving parts!
No blockages!

Please contact us if you need:
* new products developed * new features added to existing products
* tradewaste calibrations * repairs * technical questions answered

ManuFlo ®TM Page 1 | Page 2 | Page 3 | Page 4 | Newsletters | Home Issue 10

ManuFlo Kayaking Adventures

Alex Manu is a keen kayaker. His latest adventure was the Nepean River (Menangle to Bents Basin and beyond) which was described in the March 2013 issue of SALT magazine in the story "Two Guys, Two Sea Kayaks, One River, Eight Weirs and The Gorge".


[illegible]ious 100km kayaking trip, which was in the Colo region, at [illegible]012/03/12/100km-kayaking-trip-upper-colo-river-bridge-to-brooklyn/

[illegible]al for manual batch plants!

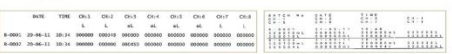
[illegible] Driver



WIDE
dot matrix tractor feed LX300+II printer
204mm wide printout
80 characters.

or


New!
COMPACT
dot matrix paper roll DP8340 printer
84mm wide printout
40 characters



The Manu Electronics ME6008M has been designed to interface from Batch Controllers to loggers or serial printers, and will provide automatic end of batch printing and datalogging of 500 batch events. All records are time stamped from the unit's Real Time Clock.
The unit is operated from a front panel keypad with a LCD 2-line display. Selections are made from a four-function "soft key" tree structured menu.

- Prints QA batch totals automatically (programmable delay), or manually.
- Internally logs 500 batch events, downloadable to your laptop/PC via optional front-access DB9 RS232 connector (that also comes with a RS232-to-USB adapter).
- Monitors up to 8 channels of water and admixture. User-friendly menu tree.
- Channel units in millilitres or Litres. Batch number ID, time and date.Real time clock.
- Grand Totals and batch history can also be printed (or dumped to a PC) on demand.
- Programmable pulse scaling (K-Factor).
- IP65-rated touchpad.

3

Page 1 | Page 2 | Page 3 | Page 4 | Newsletters | Home

The ManuFlo Newsletters – A reflective Journey through time


Issue 11
January 2021

Newsletter

ManuFlo ®TM FLOW MEASUREMENT PRODUCTS

A division of Manu Electronics Pty Ltd

Please visit our website at www.manuelectronics.com.au

COMMENT:
Welcome to the first newsletter in seven years. We have been very active in this time introducing many new products, welcoming new staff and achieving sales milestones. Alex Manu –MD

INSIDE THIS ISSUE:

CMM25 compact Magnetic flowmeters

SLUMPSTANDS for recycle water or various ADMIXTURE chemicals

The **CMM** Magflow flowmeters were introduced in mid 2019 to offer a premium economical solution for measurement of difficult fluids.

The CMM25 25mm size Magflow connected to a **ME4T** resettable counter with **WPTR** wireless pulse transmitter system has been rolled out for use with a Concrete major's metro Sydney batch plant Slumpstands for measuring recycle water. They are used in lieu of **MRP/MRT** paddlewheel flowmeters where the water quality has a much higher concentration of solids.

The CMM10, 15 and 25mm sizes are also a premium solution for measurement of chemical admixtures which are high in density, contain solids or of a higher acidic nature. These are an ideal alternative solution in lieu of the much used **MES20** disc series PD flowmeters. *Enquire for further details.*

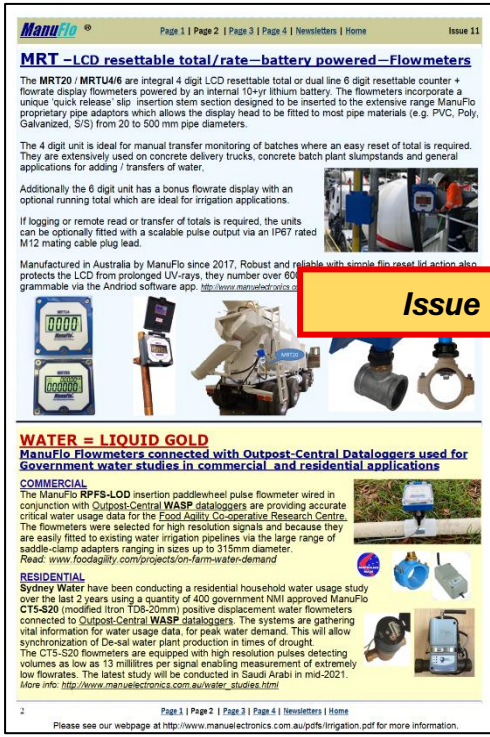
WPTR Wireless live Pulse transmitter/receiver system

The **WPTR** system is a wireless live pulse transmitter/receiver system ideal for recording of liquid batched at Slumpstands and then registered at the Batch-room counter/computer where hardwire cable runs are impractical.
It is a compact design, and includes antennas.
The maximum pulse rate is 5 Hz and the maximum transmission distance is 150 metres with standard unit or further with an optional larger antenna.

The transmitter & receiver are 12-24VDC powered with transmitter wired to the output of one flowmeter (**MRTU4-P**) or indicator (**ME4T-P**). The receiver has two (2) input channels accepting pulses from 2 flowmeters/transmitters.
The receiver then outputs the pulses to a PLC or counter input for recording the

MRTU4 ME4-T WPTR

Please contact us if you need:
** new product orders * new features added to existing products*
** flowmeter calibrations * repairs * technical questions answered*


ManuFlo ® Page 1 | Page 2 | Page 3 | Page 4 | Newsletters | Home Issue 11

MRT –LCD resettable total/rate–battery powered–Flowmeters

The **MRT20 / MRTU4/6** are integral 4 digit LCD resettable total or dual line 6 digit resettable counter + flowrate display flowmeters powered by an internal 10+yr lithium battery. The flowmeters incorporate a unique 'quick release' slip insertion stem section designed to be inserted to the extensive range ManuFlo proprietary pipe adaptors which allows the display head to be fitted to most pipe materials (e.g. PVC, Poly, Galvanized, S/S) from 20 to 500 mm pipe diameters.

The 4 digit unit is ideal for manual transfer monitoring of batches where an easy reset of total is required. They are extensively used on concrete delivery trucks, concrete batch plant slumpstands and general applications for adding / transfers of water.

Additionally the 6 digit unit has a bonus flowrate display with an optional running total which are ideal for irrigation applications.

If logging or remote read or transfer of totals is required, the units can be optionally fitted with a scalable pulse output via an IP67 rated M12 mating cable plug lead.

Manufactured in Australia by ManuFlo since 2017, Robust and reliable with simple flip reset lid action also protects the LCD from prolonged UV-rays, they number over 60[illegible] grammable via the Andriod software app. *http://www.manuelectronics.com.au/pdfs/MRT_Andriod_Programming_Instructions.pdf*

WATER = LIQUID GOLD

ManuFlo Flowmeters connected with Outpost-Central Dataloggers used for Government water studies in commercial and residential applications

COMMERCIAL
The ManuFlo **RPFS-LOD** insertion paddlewheel pulse flowmeter wired in conjunction with Outpost-Central **WASP** dataloggers are providing accurate critical water usage data for the Food Agility Co-operative Research Centre. The flowmeters were selected for high resolution signals and because they are easily fitted to existing water irrigation pipelines via the large range of saddle-clamp adapters ranging in sizes up to 315mm diameter.
Read: www.foodagility.com/projects/on-farm-water-demand

RESIDENTIAL
Sydney Water have been conducting a residential household water usage study over the last 2 years using a quantity of 400 government NMI approved ManuFlo **CT5-S20** (modified Itron TD8-20mm) positive displacement water flowmeters connected to Outpost-Central **WASP** dataloggers. The systems are gathering vital information for water usage data, for peak water demand. This will allow synchronization of De-sal water plant production in times of drought.
The CT5-S20 flowmeters are equipped with high resolution pulses detecting volumes as low as 13 millilitres per signal enabling measurement of extremely low flowrates. The latest study will be conducted in Saudi Arabi in mid-2021.
More info: http://www.manuelectronics.com.au/water_studies.html

Please see our webpage at http://www.manuelectronics.com.au/pdfs/Irrigation.pdf for more information.


ManuFlo ®TM Page 1 | Page 2 | Page 3 | Page 4 | Newsletters | Home Issue 11

Customer regional NSW site visits

Due to Covid-19 the ability to reliably visit our customers has been affected because of uncertainty with travel restrictions. Therefore visits in 2020 were limited to within NSW.

Well known is the fact that many regional Concrete Batch Plants are still using ManuFlo **ME995** Batch Controllers and **MES20** flowmeters to dispense their chemical admixtures since introduction in 1995. It is very satisfying to see the equipment still operating reliably with some dating back to 1982 still using the **ME182/188** Controllers with MEK20's, an incredible 39 years later and still doing their job safely measuring/controlling/dispensing chemicals. A true testimony to the equipment's longevity.

Some locations visited recently included Newcastle, Dungog, Tamworth, Moree, Mudgee, Griffith, Wagga-Wagga, Young, Dubbo, Wollongong, Cootamundra, Tumut, Bowral and many more.

Another milestone was the installation of the forementioned equipment at a batch plant mine site in Ghana Africa in January 2020. This marked the 10,000th ME995 produced over its now 28 year lifespan.

MES20-DSP Digital Smart Pulse Flowmeters and saying goodbye to a founder

The **MES20** admixture measurement flowmeter first introduced in 1995 was recently upgraded with the Latest technology available and now numbers over 45000 units in operation today.

The end of 2019 saw ManuFlo's pioneer and founder Anthony "Tony" Manu depart this mortal world and travel to the next. His memory and contribution lives on having introduced automatic bottle dispensing methods in the 1960's and digital flowmeter / batch controllers in the 1970's and having a hand in designs during the 2000's.
Read http://www.manuelectronics.com.au/pdfs/The_manuflo_story-v3.pdf

ROSS GREENWOOD
Simple keys to ongoing success

Issue 11, January 2021


ManuFlo ®TM Page 1 | Page 2 | Page 3 | Page 4 | Newsletters | Home Issue 11

KMS & RMS Electromagnetic Magnetic flowmeters

The **KMS** Magnetic Flowmeter range introduced in 2015 are custom programmed, wired and flow tested on our NMI flowrig to meet a wide range of specific application requirements. This added service allows a simple plug and play solution, thus saving big dollars on commissioning costs. The **RMS** series are a WAFER high pressure sensor option for apps up to 740psi.

Our customised Magflows are available in sizes from 6mm up to 300mm in wafer, flanged or SIP connections with various liners and electrodes. Voltage ranges include AC, DC or internal lithium battery powered options. Units can be integral or remote display with various output options. They can be used as standalone manual batching/transfer units or for automatic batching and monitoring.

Further, they are available with a wide range of approvals to meet various standards including water authority and custody transfer requirements.
The model range allows solutions for measuring practically any type of conductive fluid application.

- Manual Transfer Batches with Reset Total
- Any conductive liquid can be measured
- Recycle, Grout & Slurry Water Batching
- Measuring wide range of Chemicals
- Irrigation NMI-M10 approved
- Trade Waste applications

ManuFlo ®TM
FLOW MEASUREMENT PRODUCTS
A division of Manu Electronics Pty Ltd
41 Carter Road, Brookvale
Sydney NSW 2100 Australia
Phone: +61 2 9938-1425 or +61 2 9905-4324
Fax: +61 2 9938-5852

Please visit our website at www.manuelectronics.com.au or www.manuflo.com

Go with the Flo

Major Infrastructure Projects

ManuFlo's equipment plays its part in major infrastructure projects e.g. M4 tunnel & Snowy Hydro-2. The KMS & RMS Magflows for measurement of Grout piling, slurry water extraction, shotcrete spray rigs, Tradewaste ground water, ME995 batch controllers for chemical deliveries and so many other applications.

NorthConnex tunnel breakthrough

New staff

In the last 5 years the following Staff have joined the team;
Phil- our resident Sales Applications Engineer with a vast 30+yrs experience in flow measurement technology.
Bill- brings 30+yrs of service/technical know how & heads the ME2008 product. Mark –the dispatching dynamo.
Harry- resident jack of all trades with can do attitude.
Matin– leads MRT/MRP guru technical knowledge.


ManuFlo ®TM Page 1 | Page 2 | Page 3 | Page 4 | Newsletters | Home Issue 9

GROUT Flowmeters

- WAFER high pressure of the line RMS with high freq field coils are large electrodes.
- McMahons, Menards, Epiroc , many of the mining, drilling, piling grouting cos. Use us

NorthConnex tunnel breakthrough

sandwich between pipe flanges

Smart-Pipe-V3 LCD rate/total Integrated Standpipe Hydrant flowmeter
Integral display shows Flowrate and Total. With GSM Logging capability to data portal billing system. NATA Mid verified. Using MRTU6 technology. Battery powered (Water UASG)

MAJOR WATER UTILITIES

GET PERMISSION FROM SUMS and FLOTEC ??????????????

Other types also available to suit your specific applications.

ManuFlo ®TM
FLOW MEASUREMENT PRODUCTS
41 Carter Road, Brookvale
Sydney NSW 2100 Australia
Phone: +61 2 9938-1425 or +61 2 9905-4324
Fax: +61 2 9938-5852

BION WATER

Using MES25 and MES32 precign meters approved by AW??? And KMS903 mags approvals for xtec

Pic of his device etc

MANUFLO restructured
Article on manuflo new structure and ownership ??


ManuFlo ®TM Page 1 | Page 2 | Page 3 | Page 4 | Newsletters | Home Issue 12

BREWERIES & DISTILLERIES

New!

Manuflo has reached out to breweris and distilleris across australia
With the rise of micro breweries and requires for low cost flow measurement solutions.
ManuFlo has been happy to assist with SANITARY flowmeters, and tanqwaste options

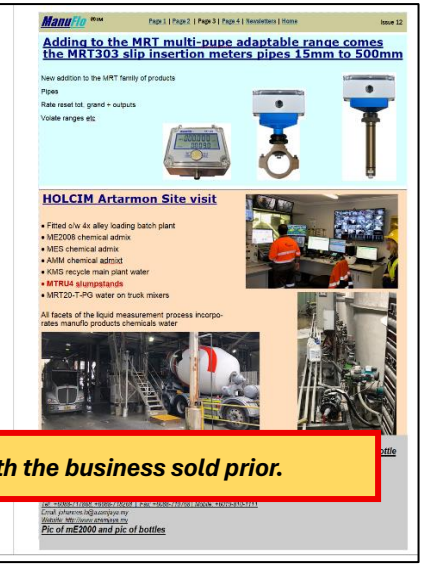
ManuFlo the portable Mme with erset button or ManuFlo-Flomec G2 turbine in integral to 60c or remote to 120c

Flowmec/GPI –ManuFlo now an official distributor and expert on the product –sanitary, diesel FUEL, ex etc tec

IRRIGATION NMI-M10 As4747 pattern approved FLOWMETERS with reste counter for daily totals

ManuFlo have a wide range of flowmeters for irrigation applications. including:

New!


ManuFlo ®TM Page 1 | Page 2 | Page 3 | Page 4 | Newsletters | Home Issue 12

Adding to the MRT multi-pupe adaptable range comes the MRT303 slip insertion meters pipes 15mm to 500mm

New addition to the MRT family of products
Pipes
Rate reset tot. grand + outputs
Volate ranges etc

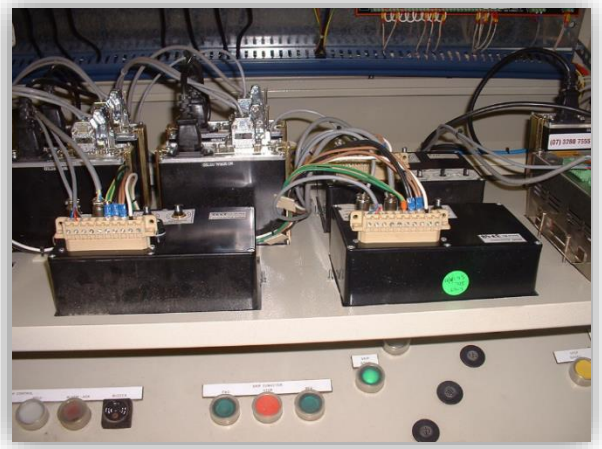
HOLCIM Artarmon Site visit

- Fitted o/w 4x alley loading batch plant
- ME2008 chemical admix
- MES chemical admix
- AMM chemical admixt
- KMS recycle main plant water
- MTRU4 slumpstands
- MRT20-T-PG water on truck mixers

All facets of the liquid measurement process incorporates manuflo products chemicals water

Pic of mE2000 and pic of bottles

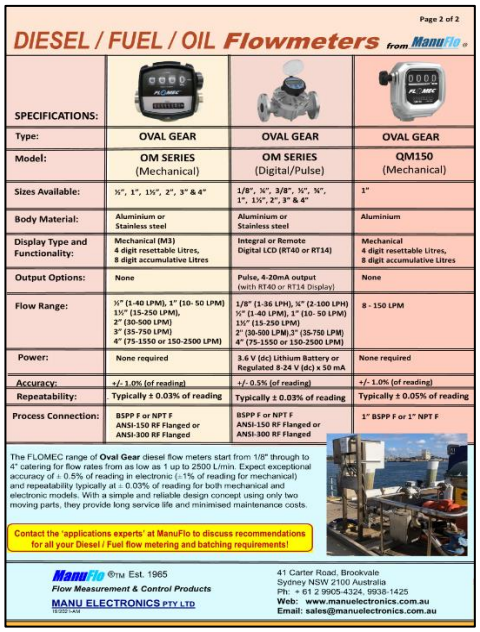
Issue 12, August 2021. ***This issue was never completed with the business sold prior.***

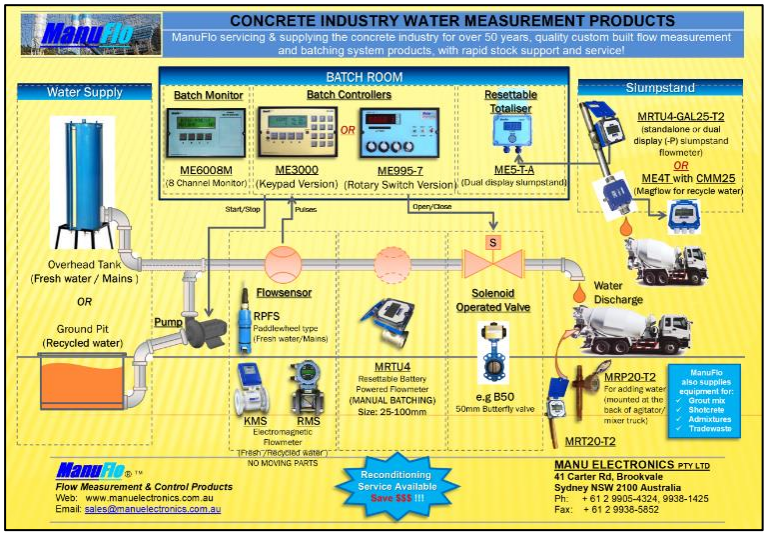


ME995 Batch Controllers installed with MC2 connected to a PLC controlled Batch system.

The ManuFlo Product Promotion Marketing Fliers

These issues were produced and distributed during Covid times to generate business showcasing ManuFlo's product range and application uses.





Summary - ManuFlo (Sydney Australia); **formerly Manu Electronics Pty Ltd** founded by Tony Manu as a TV/Radio sales & repair shop in Willoughby Sydney began operations in 1961. Soon after it began manufacturing sight bottle industrial flow measurement equipment in 1965. The company was incorporated in 1985. Succeeded by son Alexander Manu in 1990's, is today an Australian company specializing in designing and manufacturing process control and measurement instrumentation. Initially focused on the concrete construction chemical additives industry, the company has since expanded its expertise to various fields. Here are some key points about ManuFlo:

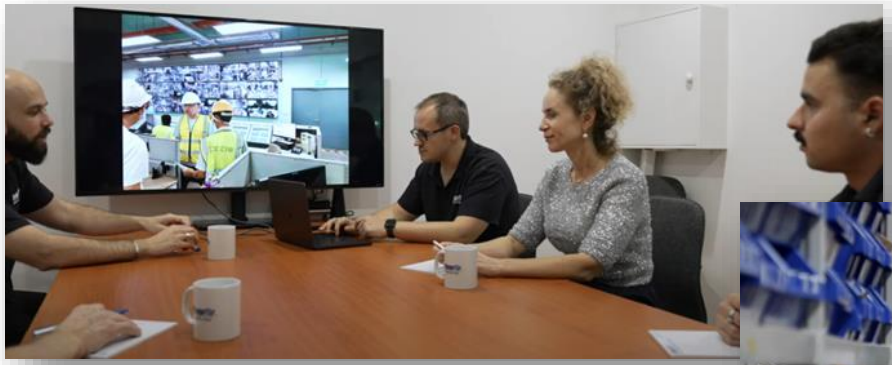
The company began manufacturing in Willoughby, following in Brookvale in 1984 and moved to larger premises in 2000. After 56 years under family control, the company relinquished controlling interest in 2021 to an investor consortium to drive global growth opportunities.

ManuFlo plays a crucial role in admixture chemical and water measurement for various applications, such as concrete plants, quarries, and block plants. Their equipment is used for measuring and dispensing water, slurry water, and construction chemicals in premix concrete and quarry plants. Today you will find a ManuFlo product in any Concrete Batch Plant in Australasia / South Pacific region and many other overseas destinations.

The company developed crucial watch dog dispensing equipment for safe direct flow measurement, incorporated in the world first UME9 batch controllers with variable dose-rate technology and ME2000 interface batch safety units. It's 1 pulse per 1 milliliter admix flowmeter introduced in 1972 was a world first and the go to standard still used today. The RPFS Rota-Pulse insertion flowmeter were the first in the world to employ magnet free rotors. Clearly a pioneer in development of niche industry products,

while initially rooted in the concrete industry, ManuFlo's expertise now extends to other sectors, including Trade Waste Water, Mining & construction Grout, IOT water measurement & Residential Water Studies many other diverse fluid measurement applications.

The ManuFlo trusted whiteboard, the visual central nerve operation system since yr-2000 still going strong. ▲



Part of the new ManuFlo team led by Aurelien with Martina, Max and Sam. ▲

Acknowledgments - This work stands on the shoulders of those whose ambition, resilience, and vision shaped the course of our family & our business across generations.

I pay heartfelt tribute to my great-grandfathers—Tryfon Philipoff and Zizzo Manou—who, in the early 1900s, journeyed to New York City to acquire business knowledge that would plant the earliest seeds of enterprise. To my grandfather's, Lazarou Manu, who arrived in Sydney in 1939 and Done Opashinoff in 1926 to establish their futures in Australia. And to my father and mother, Tony and Lena Manu, who founded Manu Electronics in 1961, and entrusted me with the opportunity to join the business full-time in 1986. That trust became both my responsibility, passion and my privilege.

Much has flowed beneath the Manu Electronics / ManuFlo bridge—indeed It's been quite a journey—one I've recounted in this book retold through the lens of an observer, looking in. To those who have contributed to ManuFlo's journey—past and present staff, over 1,500 customers, suppliers, and the many individuals I've encountered during my 35 years of full-time commitment—thank you. You've each been a part of this story.

To the many clients and the unsung heroes—the dedicated dispenser and equipment technicians—I salute you. You understand better than most that maintaining, servicing, and ensuring the continuous operation of equipment ensures vital uninterrupted production of Ready Mixed Concrete, general manufacturing, or any industrial or liquid measurement process, by any means is no small feat. It is a demanding and often underappreciated enterprise, and your commitment has never gone unnoticed.

To my family, children, grandchildren, cousins, friends, connections past and present and my wife—thank you. Your support and understanding throughout my working life has meant everything. The journey has demanded much, absorbed more time than I could spare, and taken moments I wish I could have shared with you then. I hope the seasons ahead will allow us that time together.

My journey lives on in memory, and you have all been a part of it. With heartfelt gratitude, thank you.

Epilogue – As this account draws to a close, so too does a chapter defined by decades of innovation, resilience, and unwavering commitment to purpose.
From humble beginnings to global reach, the ManuFlo story has always been one of people—those who dared to build, who gave their all,
who kept striving long after the job was done. Every milestone and misstep, every breakthrough and memory,
flows together like tributaries feeding a river: distinct, yet essential to its course.
While my role in the day-to-day commitment has changed, my pride in what we've built together remains resolute.
And though these pages reflect the past, they are equally an invitation to the future—a future shaped by a new generation,
ready to leave their own marks on this enduring legacy.

To everyone who has walked part of the journey with me: thank you again. To those now carrying the current forward:
may your flow be strong, your course true, and your purpose clear.

Alexander Tryfon Manu

23rd September 2025

My Membership and Donor affiliations;

CONCRETE INSTITUTE of AUSTRALIA

FREEMASONS NSW & ACT

phm powerhouse museum science+design

Museums of History NSW

National Trust of Australia

HC nsw historycouncilnsw

Dear Colleagues - I offer my sincere apologies to anyone not mentioned directly in my recollections of the journey, as there are so many of you. Every contribution has mattered. Every memory remains embedded.

To mention just a few past and present: -

NSW/ACT: Steve Bax, A.Beveridge, Snowy Bischoff, C.Barton. Bob Bornstein, Roger Blackwood, G.Boxall, Perry Brown, D.Byron, Trevor & Glenn Cambell, David Campbell, Kerry Carr, Brian Carrick, Joe Cartes, Daryl Chapman, Barry Corrigan, David Creedon, Nathan Cole, Kieran Coupe, , Graham Davy, David Day, Ben Duchkov, Bruno Dsouza, Peter Elliot, Ulysis Fallas, Mick Foskett, R.Furlong, Mario Galea, Marc Gibson, Ben Gill, George Hancock, Michael Hanley, Joe Hajdu, Robert Harker, Clive Harrison, John Harris, Ray Heaton, Ray Heaton, Craig Isdale, G.Jacobsen, John Jeswin, Andrew Judge, George Lizier, Billy Magner, B.Madden, Carole Marr, Paul Marsh, Phil Martin, Neal Martyn, Richard Matea, Chris McCallum, Tim McMahon, Mark Mearing, David Meyers, Dick O'Connel, Les Palmer, Angus Peruzzo, Paul Perry, David Price, J.Reardon, Allan Reece, Matthias Reinhold, Andy Padrutt, Robbo, Damian Ross, M. Rutten, Steven Sheeves, Ash Simpson, Mick Stanley, B.Stevens, Robert Stubbs, Rian Sullings, Craig Sutton, George Sved, Phil Thai, Michael Tooher, Tony Vella, Ben & Daniel Wallace, Dane Warner, M.Wu.
QLD: Grant Claffey, Darcy Erbacher, Mike & John Peart, Denis Cool, Martin Dick, P.Elwell, F Nicola & Mark Forbes, F.Giacca, Nakia Mills, Rory Mills, Brett Murkins, Wade Moir, Eran Rosier, , Bob Marks, Jack Kidd, Marshell Luscombe, Jim Nikora, Mick Powalski, Carmela Oakes, John Rea, Darren Spark, D.Kennedy, W.Duck, D.Slade, Doug & John Rea, Luke Sutton, Chachi Tilocca, Ramesh Thiru, Steve Tully, David Yarrow, Les Woodforth, John Zahner,.
VIC: Dave Barry, Chad Beers, Marty Barlow, Les Beckett, Andrew & Mark Benes, Cameron Burgess, Kristen Carey, Gary Clarke, Dumas, Peter DiMedio, Peter Englert, Rocco Gagliardi, S.Georgialis, Bruce Grant, Robert Gulifa, Tony Heil, M.Hernon, Max & Allan Kolasa, W.Keyte, G.Lassey, Andrew & Josh Lowcock, F.Markou, J.Millar, Peter Mortimer, Peter Russell, Dick Sokol, George Thompson, Nev Reynolds, D.Sokol, Ash Walker, Rick Willie.
SA: Ian Burnett, Laurie Moore, John Scott, Peter Alfred, Andy Jordon, Michael Morelli, Darren McGuire, David Foale, Rick Willie, Robert Franjic, Ryan Salter, Jeff Cichon, D.Tapley.
WA: Joe Fasolo, Tyson & Bevan, Kevin Gilmour, Steve Peters, John French, Luke Curren, Peter Davis, Frank Pesce, Victor Benjamin, Paul Flyt, Tony Saracini, Evan Plumridge, C.Gardner, Luke Clarke, Luke Curren, , G.Alexander, Mitchell Grim, Craig Norris, W.Harris, A.Mintano, Bevan, G.Goulding.
NT/TAS: Kevin Gargett, Scott Allen, Luke Sutton.
Overseas: Cristobal Soler, Steve Dyball, Don Moras, K.W.Chan, Mr Zhou, Allen Wiggans, Phichet Klatket, Jutamas Pannak, Steve Beech, Mohammad Anees, Katherine Yip, Tram Le, Marko Escobar, Darren Smith, Michelle Ng, Raj Naidu, Chris Harnett, Gary Stevenson, Steven Wong, Kim Marfleet, Denis Koo, Jong Chee Kiang, NK-Chua, Mr Lim, Damien Lusty, Calvin Wong, C.Gisela, Suria Rao, Atkimson Kua, PM.Sunil, Margret Wanjiku, TS.Wang, Omar Yasin, Jose Noel, Clara Leung, Raymond Wong, Jasper Choy, Nam-Cheung Lau, Chow Yin Yin, Rina Tan, Kian-Chai Foo, Gary FDel-Rosario, Roland Ong, Alex Chow, Ben Mendoza, Sukanto, Nigel Derbyshire, Daniel Sham, Mandy Mo, Ree Yu, Ai Ling Low, ABuBakar, Vaidya, Rolsi Bin Idris, Mel Ferguson, Craig Harris, Mark Chapman, Rico Dguzman, Adrian Borja, Vishal Moye, Shatish, Umesh, Shailesh, Desmond Low, C.Chow, Bo Kalin, V.Tondare, G.Kandaswami, Son Dang, WW.Ching, Sutriyono, Sammy Tong, Cheryl Chin, Samantha, Elaine, SL.Sim, Raj Naidu, PC.Lara, Deka.A, Ari.M., Firman Fajar, Sendita.DR., Delani.H., Heru.S., R.Ruiz, M.Jorvina, Dien.VT., Stuart Wolfe, George Siu, M.Cresswell, Ekko, A.Ericson, P.Gower, A.Novoselov, Michelle Ng, G.Somerville, Steve Beech, D.Weaver, Tram Le, C.Bennet, JK.Kwek. .

https://www.youtube.com/watch?v=lSq9QJfqnMU&t=2

Watch Video of the journey at the above link ▲

Inspirations and other Acknowledgements *by Alexander Tryfon Manu - 09/2025*

I extend gratitude to Gene Roddenberry and Paramount Inc. for the inspiration Star Trek has instilled in my consciousness since childhood.

Another Manu Company Incorporated in 1999. ►

Phalanx Corporation Pty Ltd
Business Solution Consultants / Investment / Marketing / Films

Phalanx-Films

Alexander the Great - hand painted by Tony Manu in 1969 for son Alex. ▲

ManuVest®
Strategic Investments

A new Manu Company inc. 2021.▲

***From Macedon to ManuFlo: The Spirit of Alexander in My Working Life*.**

In the tapestry of my consciousness, two figures loom large: the cerebral compass of Star Trek, with its boundless curiosity and moral quests; and the commanding silhouette of Alexander the Great—strategist, visionary, integrator. Where Star Trek illuminated the stars, Alexander taught me to move boldly through the world below, to weave disparate talents into unified purpose and to face business battles not with mere tactics, but with belief.

Alexander's exploits—his ability to inspire loyalty, adapt swiftly, and thread cultures into a shared destiny—spoke to me not just as history, but as blueprint. In my own working life, from the factory floor to the boardroom, I often found myself rallying diverse colleagues like infantry and engineers, aligning goals, overcoming barriers, and expanding horizons. Not with bloodshed, but with grit, integrity, and the subtle art of recognizing specialist strengths in others.

To conquer in business is not to dominate, but to elevate—to lift ideas, partnerships, and people beyond their known edges. Alexander marched with vision ahead of certainty. I, too, have learned to trust instinct, take risks, and build legacy not through possession, but through shared achievement.

An Ode to my father; But long before I studied kings, I watched a quiet force take wing— My father, steady, sharp, and wise, with determined grit. Where others bent, he held his stance, Turned every loss into advance. Through trials, hardship, silent strain, He taught that worth is won through pain. His hands, though weathered, shaped my mind— To seek, to build, to lead, and grind. And in each challenge, I have faced, his wisdom still keeps me braced.

..... The Journey Continues

.... and Beyond ....

THE MANU BUSINESS STORY

FROM FISH SHOP TO FLOW METERS