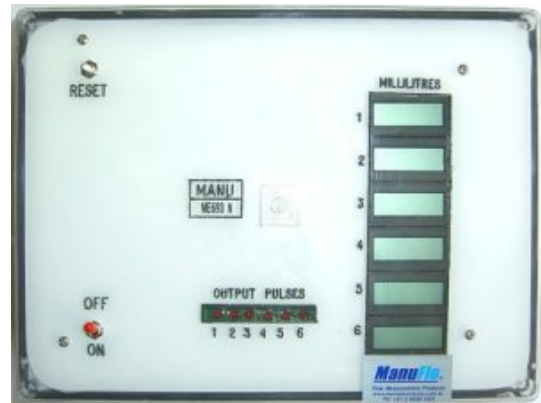


ME693-N

Flowmeter to Computer Counter Divider Interface Card

FEATURES:

- 6x 8-digit LCD counters.
- Counts in millilitres.
- Supports up to six MES20 flowmeters.
- Variable pulse dividers.
- 24 - 240vac pulse outputs (Triac switching).
- Provides important cross-reference batch figure.
- Compact housing.



INTRODUCTION

The ME693-N counter divider interface card was designed to act as a support product in interfacing up to six ManuFlo admixture 20mm pulse output flow meters (MES20, KGG20, MEK20) with PSI Eagle and other USA industrial computer systems, requiring low frequency pulse rates and 24-240vac pulse inputs.

OPERATION

The ME693-N supplies +12VDC to flowmeters which in turn send back pulses that indicate the liquid flow, and the pulses are counted on the individual channel LCD displays in direct millilitres.

The pulses must then be sent on to computer inputs. If the computer has OPTO22 24-240vac input Optos, incoming pulses to the Computer are limited to 15Hz. Due to high resolution pulsing of flowmeters, the flowmeter pulse rates must be divided. The ME693-N onboard variable DIP switches then need to be set to the desired pulse division rate (see Fig 1).

The divided output pulses are indicated by the output pulse LEDs on the ME693-N. The pulses are stepped up (via a Crydom AO241 Triac opto) to 24 - 240 vac switching pulses. These pulses are received by the computer input Opto (Yellow OPTO22). When the computer has completed a batch cycle, a 240 vac reset signal is supplied to the ME693-N master reset relay, thus resetting all counters. A new batch can then commence.

The ME693-N also has:

- an ON/OFF power switch;
- a manual operation RESET counter switch.

ManuFlo [®]™

Flow Measurement & Control Products

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a division of

MANU ELECTRONICS PTY LTD

41 Carter Road, Brookvale
Sydney NSW 2100 Australia

Ph: + 61 2 9905-4324, 9938-1425

Fax: + 61 2 9938-5852

Web: www.manuelectronics.com.au

Email: sales@manuelectronics.com.au

INSTALLATION

1. Find a suitable position to wall-mount box - consider good view of LCDs and room for wiring.
The ME693-N PC board is attached to the cover lid, therefore cable gland entries can be fitted to box at any point.
2. Use at least an 8-core shielded cable for flowmeters (6x pulse wires, 1x common +12v, 1x 0v/shield).
Wire the flowmeter cables to the ME693-N's 8-pin plug (labelled J4 on the layout diagram on Page 3).
3. Connect 240vac supply to the ME693-N's 3-pin plug labelled J5 on the diagram on Page 3.
Connect the computer reset line to the ME693-N's 3-pin plug labelled J3 on the diagram on Page 3.
4. Wire from the ME693-N's 7-pin plug (labelled J1 on the diagram on Page 3), to the 6x computer inputs.
5. Use the DIP switches to set the desired pulse rate division for each channel.
6. Switch on power and test pulse output division rate, making sure that the computer's input parameters correspond.
7. Run flowmeters to make sure that the quantity collected corresponds with the ME693-N LCD display count and with the computer screen.

Note: optional 110vac supply and computer reset relay model available.

SPECIFICATIONS

Display:	6x 8 digit LCD counters in millilitres
Power supply:	220-260 vac (optional 110 vac)
Supply to flowmeters:	12 VDC
Pulse inputs:	Up to 6 flowmeters (max. 2 kHz)
Computer pulse outputs:	Eagle: 24 - 240 vac Triac Autocon: 24 VDC Compubatch: 12 VDC Jonel: 5 VDC
LED pulsers:	Blink at divided pulse rate
Pulse division:	BCD DIP switches
Computer reset:	240vac
Fuse:	1 Amp
Enclosure:	IP55 wall mount
Dimensions (mm):	264 L x 200 W x 90 D
Weight:	1.5 kg

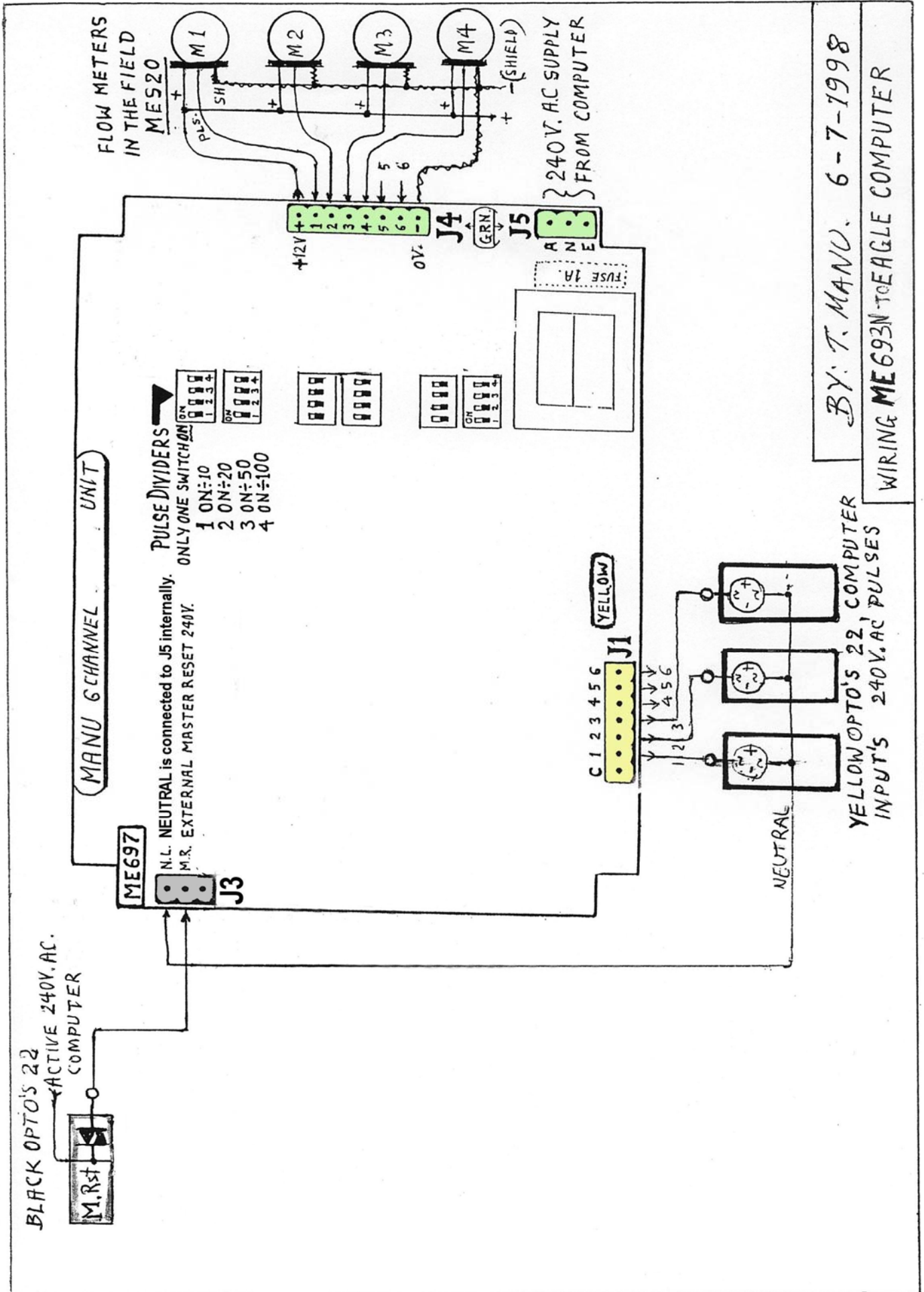
FIG 1 Pulse Division Settings

To set division rates, slide pins up to ON.



- ALL OFF : divide by 100 (100 mls/pulse)
- 1 ON only : divide by 10 (10 mls/pulse)
- 2 ON only : divide by 20 (20 mls/pulse)
- 3 ON only : divide by 50 (50 mls/pulse)
- 4 : not used

Due to continuous product improvement, specifications are subject to change without notice.



BY: T. MANU. 6-7-1998
 WIRING ME693N TO EAGLE COMPUTER

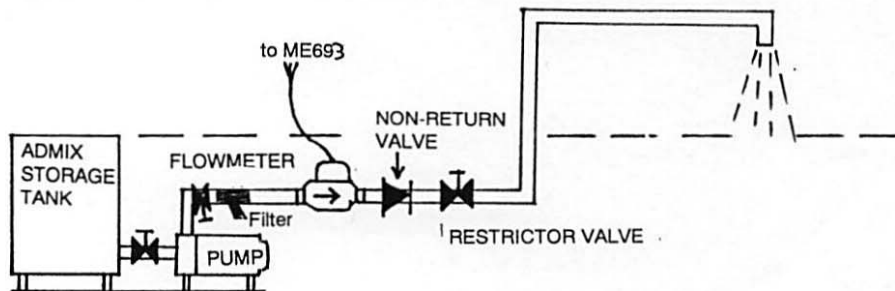
INSTALLATION GUIDE for ME693 interface card with MES20 flowmeter systems.

First locate the most appropriate position to mount the MES20 flowmeters. Preferably the flowmeters should be grouped together off the ground on a stand. A cover should then protect the flowmeters from the elements. The cover should be light weight, with handles, for easy access by service personnel. A vibration free area is recommended, as the MES20 is sensitive to high vibration areas, causing stray pulses. (See MES brochure 'Installation').

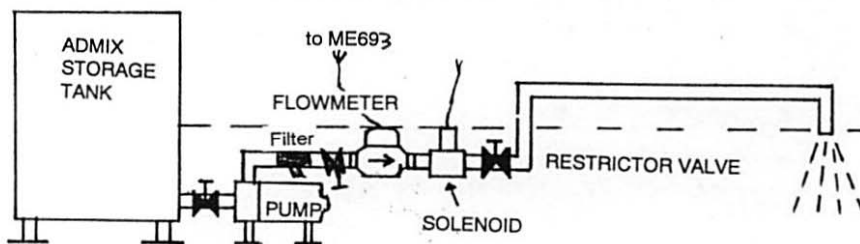
Now establish tank storage tank position in relation to outlet point:-

- A) Outlet point above top of storage tank.
- B) Outlet point middle of storage tank.
- C) Outlet point below bottom of storage tank.

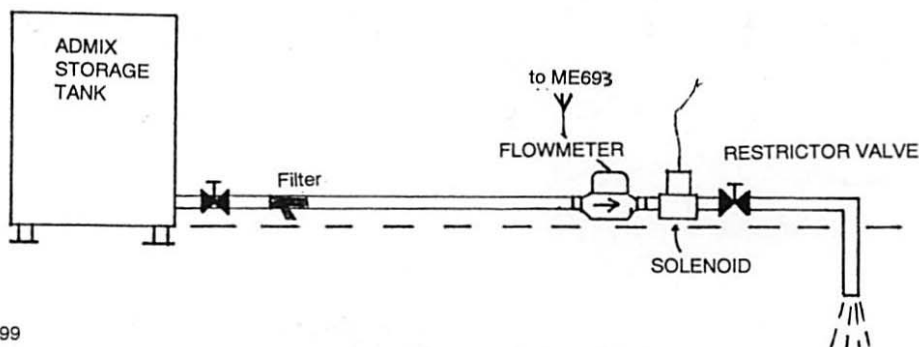
A) If you use storage tank level below outlet line (most commonly used) you will need:- Pump, non return valve or spring loaded check valve 12psi, flow restriction gate or ball valve, pulse flowmeter and in some cases a solenoid valve for instant shut off of flow . However the last item may not be required if installation has reasonable head height.



B) If you use storage tank, level with outlet line you will need:- Pump, a solenoid valve to stop free flow, a flow restriction gate or ball valve and a pulse flowmeter.



C) If you use storage tank level above outlet line you will need:- a flow control solenoid valve, a flow restriction gate valve.



SELECTION OF PIPE LINE DIAMETERS

(MES20 20mm flowmeter)

For low flowrates and small batch quantities of liquid (approx. <2000mls., use 1/2 inch diameter pipe or hose (after the flowmeter). For medium to high flowrates use 3/4 to 1 inch diameter pipe.

For very high flowrates use 1 1/4 inch. NOTE:- Pipeline can be flexible reinforced hose, rigid PVC or metallic.

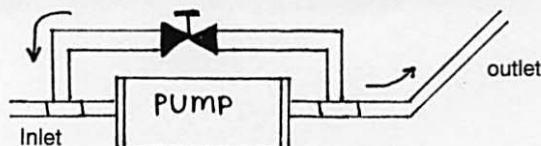
Warning: Running flowmeters over their maximum flow rating can cause damage & overdosing.

For other flowmeters 25mm, 40mm etc., use same diameter size as meter size or slightly larger diameters for specific gravities of 1.2 & greater.

PUMP SELECTION

When 20mm MES20 flowmeters are used with fluids of spec. gravity 1 to 1.35, use centrifuge pumps 0.5 to 1 horse power (e.g. 1" Onga 413 or Davey pumps), a flowrate upto 0.8 litres per second can be achieved, depending on head height. For higher density fluids gear pumps or other types of positive displacement pumps are more suitable. Because of pressures generated by gear pumps it is important that restriction of flow be achieved with bypass of inlet to outlet flow valve or recirculating flow line.

When using larger capacity flowmeters, a proportionally larger pump will apply.



FILTERS

A considerable amount of foreign particles can be transferred into admixture storage tanks. Therefore it is advisable to install a box filter prior to positive displacement type flowmeters, preventing possible blockage or damage to flowmeter measuring chamber.

(A20/800 Ystrainer filter with 800micron mesh recommended).

COMMISSIONING FLOWMETER / ME693 INTERFACE CARD SYSTEM(s)

Electricians must refer to the relevant system wiring diagram. Mount the ME693 interface card on a suitable panel or near the computer/PLC input panel.

When wiring the flowmeter(s), use shielded cable. For example when wiring 6 flowmeters in the one installation, use atleast 10 core shielded cable. One core for each pulse wire and atleast one core for the positive +12VDC voltage supply linked to each flowmeter, and one core coupled with the shield as O.V.

For 240VAC Output Pulse wiring, consult the ME693 brochure and relevant wiring diagram.

All pulse inputs to ME693 are 1 ml per pulse and are counted on the LCD displays. ^{+ to computer} Select the appropriate divider pulse ratio settings for each channel, via the red color 4 way DIP switches. (Make sure the divided pulse value corresponds with the computer software input parameter, e.g. divide by 100 is 100 mls per count input). ^{or blue.}

Power up the system. Prime the admix line, until liquid appears at outlet line, ME693 card's pulse LED is blinking and the LCD counters should count.

A volumetric calibration test must be performed when commissioning a new installation, and a followup atleast bi-yearly test. A calibrated vessel is placed near the sok (or at a access point after the flowmeter and non-return valve), using the manual batch buttons, batch a small volume. Check the display and the volume collected - they should match. Then select a batch quantity with computer, all should match.

(example: 10.1 litres called on batch computer, 100 millilitres per pulse set on ME693 divider, 10.1 litres of admixture collected in vessel, 101 counts on computer screen, 10100 mls on ME693 display - correct result.