FEATURES

- **4-Digit LED display.**
- **4 LED status indicators.**
- **Preact function.**
- **Preset maximum limit.**
- **Missing pulse detection.**
- **Counts in Litres upto 9999.**
- **Optional PLC and computer interface.**
- **Signal conditioning, with K-factor.**
- **Compatibility with most flowmeters.**

The ME995-7 LITRES preset Batch Controller can be used with most pulse output flowmeters, for preset liquid batch control applications.

The controller incorporates a preact (overflow deduct) feature, K-factor adjustment, 4 LED status indicators and diagnostic safeties. With the ME995-7 Batch Controller using the same 10-pin Weidmuller receptacle plug as the previous models, making changeover or upgrade instant with no rewiring necessary. It can be easily interfaced with PLCs, thus incorporating the controller's safety features and providing a backup batch facility.

With 4 rotary selector switches, batch quantities are easily selected. The batch operator can also visually refer to the numbered selector dials for the selected batch quantity. Command operations are by user-friendly toggle switches, and four LEDs indicate operational status conditions.

Batch counting is in 1 Litre increments, up to a maximum 9000 Litres.

The controller operates from standard 220 - 260 vac (or optional 24vac, 110vac or 12 - 24 VDC) voltage supplies. Contact output drive is via one (or optional two) relays. (or with –OC open contact drive to allow control output switching drive of any external voltage). Standard controllers are in panel mount form, or optionally can be housed in a metal box or IP65 ABS wall mount enclosure.

The ME995-7 controller is designed for compatibility with ManuFlo flowmeters and many other types. Calibration for the desired flowmeter is selectable via the rear dials.

SAFETY FEATURES

* **LIMIT (LM) LED** activates if batch cycle reaches locked internal limit or if circuit diagnostics detect internal chip problem. There is subsequent automatic shutoff of voltage contact drive.

* **PULSE FAIL (PF) LED** activates if no pulses arrive within 1.5 seconds (variable) initial start time period, or if pulses are interrupted during batch cycle and fall below (variable) pulse scanning time (typical 30Hz). There is subsequent automatic shutoff of voltage contact drive output.

* **FLOW (FL) LED** monitors and indicates incoming pulses from field flowmeter, or if TEST is used.

* **CONTACT DRIVE (CD) LED** indicates voltage contact output drive when pump or solenoid are activated.

* Internal audible **ALARM** sounds momentarily upon completion of batch cycle, and continuously if PULSE FAIL or LIMIT LEDs are activated or if overflow runs 26 litres over selected batch quantity.

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* To operate, push each of the toggle switches ON-OFF, START-STOP and TEST-RESET to the desired function.
* Switch the power ON to unit. Select required batch quantity using rotary number dial selector switches.
* RESET unit. The LED displays zero and all LED indicators and alarm turns off. The unit is ready for batching.
* START unit; voltage contact drive activates. CONTACT DRIVE LED illuminates indicating pump or solenoid are energized, followed by FLOW LED illuminating, indicating pulsing and operation of flowmeter. The digits begin counting upward towards the selected batch quantity.
* Upon digits reaching the selected batch quantity the alarm sounds (short beep) indicating completion of batch; CONTACT DRIVE and FLOW LEDs turn off. LED display digits and selected batch quantity should correspond. If LED digits overshoot target, use PREACT (inflight,freefall) overflow deduct dials (located at rear of controller unit) to scale back the difference.
* To interrupt unit before completion of batch, push STOP toggle; digit counting will stop, drive contact off. Push START toggle to resume batch.
* TEST toggle is used to test digit counting, switch contacts, alarm conditions or generate output pulses for computer interfacing. TEST does not activate pump or solenoid.
    Warning: if CONTACT or FLOW LED indicators are on, but controller is not counting, discontinue use and call for service.

CALIBRATION

1) The Batch Controller is initially set up for the connected flowmeter using the Controller's Calibration rotary selector knobs (at rear of unit) marked UNITS, TENS and HUNDREDS to match flowmeter's output pulse value. **Note reverse sequence of dials: e.g. U=0, T=0, H=3, is a value of 300.**

On-site calibration adjustment and test:

2) Must adjust what is shown on the Batch Controller display (red LEDs) to match a known amount dispensed, using the Calibration knobs. So, set Controller to 190L, and batch into a 200 litre (44 gallon) drum.

3) If the amount collected is **more** than is shown on the LED display, then **decrease** the set calibration value by the same % difference
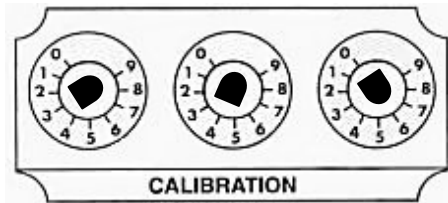
    e.g. if collected 200L when 190L on LEDs, this is 10L more or 5% over (10/190x100%). So, decrease the calibration value by 5% i.e. if calibration set to 300, new value is 300-5% = 300-15 = 285 (Set Calibration U=5, T=8, H=2).

4) If the amount collected is **less** than is shown on the LED display, then **increase** the set calibration value by the same % difference.

    e.g. if collected 180L when 190L on LEDs, this is 10L less or 5% under (10/190x100%). So, increase the calibration value by 5% i.e. if calibration set to 300, new value is 300+5% = 300+15 = 315 (Set Calibration U=5, T=1, H=3).

CALIBRATION

Example pulse flowmeter calibration settings
Note: x17 pulse input multiplier is used to enhance calibration resolution if flowmeter has <58 pulses/Litre.

Flowmeter	Size Ø	H T U	Signal input multiplier
RPFS	25mm	0 7 5	x1
PMS25	25mm	1 0 0	x 1
RPFS	32mm	7 8 2	x17
RPFS	40mm	5 1 0	x17
RPFS	50mm	3 4 0	x17
RPFS	80mm	1 2 4	x17
RPFS	100mm	0 7 8	x17

5) **PREACT:** Calibrating inflight overflow is via two rotary select knobs marked "TENS" and "UNITS" of LITRES, located at the rear of controller. Simply set knobs to same overflow reading as indicated by the LED display.
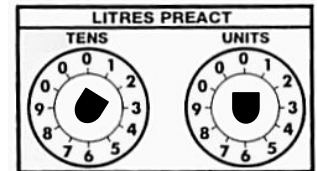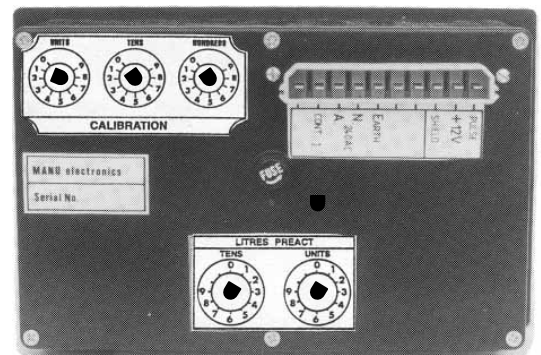
Example: You select 190 Litres, batch the quantity, 200 Litres is shown on display, and 200 Litres is collected in drum. A valve may take extra time to close, so what is selected on dials usually overshoots on display. So, set 10 Litres on PREACT to deduct the 10 Litres overshoot (PREACT T=1, U=0 is a value of 10 Litres). Next batch, the selector Dials, LED reading and amount collected in drum are all 190 Litres.

LITRES PREACT   TENS   UNITS

Power supply	220-260vac (optional 24,110 vac or 12-24 VDC)
Output to flowmeter	12 VDC upto 100mA
Relay outputs	Standard Max. 240 vac, 1 A. (Other outputs as per spec. option ordered)
Frequency input	5 KHz: x1 input, 340 Hz: x17 input. (min.10hz)
Display	4 digits, 7 segment LED (14mm H)
Connection	10 pin Weidmuller mating plug & socket
Fuse	1 Amp (5 x 20mm case)
Batch selection	Visual rotary select knob switches
Batch commands	Push toggle switches
Mounting	Panel mount
Weather Rating	Indoor only IP51 (for outdoor use HB2510 box)
Instrument housing	ABS hi-impact case mould
External dimensions	206 L, 130 H, 90 D mm
Panel cutout	190 L, 122 H mm
Weight	1 kg

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

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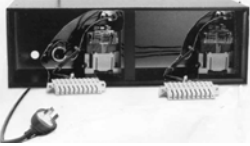www.manuelectronics.com.au

ME995-7   Batch Controller, 240 vac supply and output, with 12 VDC power to flowmeter (standard).

Options:

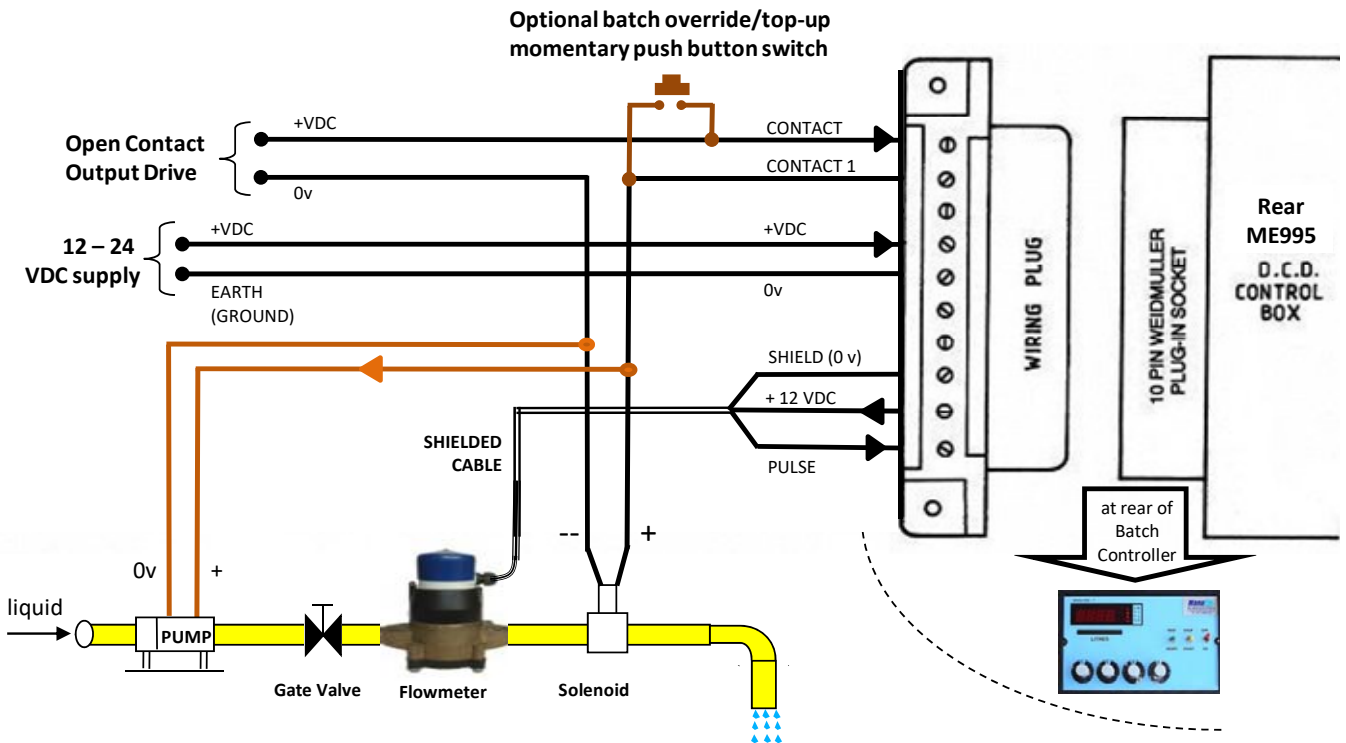| Code	Description	Code	Description
-DC-OC	12-24 VDC power supply input/output drive, with Open Contact output drive (5 A) which is via external voltages	**-5P**	5-pin computer interface plug (start, stop, reset, pulse,+12V) for use with ME5IC interface card for **Jonel, COMMANDbatch etc PLCs.**
-24VAC	24 vac powered and output.	**-MC**	4-pin PLC/Computer Command (Start/Stop/Reset) interface plug.
-110	110 vac powered and output.	**-MC2**	• 2-pin plug for scaled 4N33 open collector pulse output (1 pulse/ 1 Litre). • Includes 4-pin external command (Start/Stop/Reset) interface plug.
-OC	Open Contact pump/valve output, for use with any driving voltage (maximum 5A current).	**-MC2-C**	**Compubatch interface**: 2-pin plug with OPTO 4N33 pulse output. Includes 4-pin external command (Start/Stop/Reset) plug.
-A0	Contact output: alarm/batch-complete voltage relay or logic state	**-SSRBC**	External command: Start/Stop/Reset, for connection to HB2500-SSR housing box, or for remote control facility.
		-S12	switch: two product changeover output drive. Allows 2 flowmeter-inputs/pump-drives.

e.g. "ME995-7" is the standard Batch Controller, 240vac powered, without any of the options,
whereas "ME995-7-MC2" is an ME995-7 Batch Controller with a scaled open collector pulse output,
and a Start/Stop/Reset computer interface.

HOUSING ENCLOSURES

SHB	Single enclosure. Powder coated metal.	
SHB1	Single enclosure. Powder coated metal. Wired with 240vac contactor (for 1 hp pump), plug-in 240 vac pump outlet and plug.	*SHB* *SHB1*
SHB1-T	as for SHB1 above, but with terminal wiring entry connection instead of 240vac pump outlet	
DHB	Dual enclosure. Powder coated metal.	
DHB2	Dual enclosure. Powder coated metal. Wired with 2x 240vac contactors, 2x pump outlets, and 2x plugs for Batch Controllers.	*DHB* *DHB2*
DHB2-T	as for DHB2, but with terminal wiring entry connections (instead of mains lead and pump outlets).	
HB2510 **-SSR**	IP65 waterproof single enclosure. External commands: Start/Stop/Reset. IP65 rated (option fitted to HB2510).	*HB2510-SSR IP65 enclosure shown with ME3000 Batch Controller*

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ME995 WIRING DIAGRAM

Optional batch override/top-up momentary push button switch

VAC SUPPLY
ACTIVE
N. LINE
EARTH (GROUND)

CONTACTOR
ACTIVE
NEUTRAL
EARTH (GROUND)

EXTERNAL CONTACTOR FOR HIGHER CURRENT

A$_L$
A
CONTACTOR

SHIELD
PULSE

TWIN SHIELDED CABLE

WIRING PLUG

10 PIN WEIDMULLER PLUG-IN SOCKET

REAR ME995 D.C.D. CONTROL BOX

at rear of Batch Controller

A
B
N

optional 240vac **Solenoid** to prevent Venturi effect when injecting into water lines.

optional 3-Way Valve (calibration point)

outlet line above level of Storage Tank (most common)

ADMIX STORAGE TANK
tank Valve
Filter
Non-Return Valve
E N A
PUMP

Gate Valve restricts flow

Magnetic Flowmeter

Non-Return Valve

Standard AC Wiring for Pump and optional Solenoin

Optional batch override/top-up momentary push button switch

Open Contact Output Drive
+VDC
0v

12 – 24 VDC supply
+VDC
EARTH (GROUND)

CONTACT
CONTACT 1
+VDC
0v

SHIELD (0 v)
+ 12 VDC
PULSE

SHIELDED CABLE

WIRING PLUG

10 PIN WEIDMULLER PLUG-IN SOCKET

Rear ME995 D.C.D. CONTROL BOX

at rear of Batch Controller

liquid
0v   +
PUMP
Gate Valve
Flowmeter
--   +
Solenoid

Wiring for DC-powered Batch Controller with DC Open Contact Output Drive to Pump and/or Solenoid
NOTE: if current draw of solenoid is > 0.5 Amps, or if using a pump, then install a contactor

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