

Vampire - Electronic Indicator

TYPE GMTX

The GMTX electronic indicator with microprocessor enhanced performance and LCD panel display of flow rate and total, designed for use with a metal tube variable area flowmeter for liquid, gas or steam measurement,

Suitable for use with body options, the VAMPIRE (Variable Area Micro Proc-essor Indicator Readout Electronics) has a totally solid state measurement system, eliminating mechanical hysteresis errors. Microprocessor interpolation between flow data points, stored in factory calibrated look-up tables, gives an improvement to $\pm 1\%$ accuracy for this technique.

The loop powered 4-20mA transmitter is certified intrinsically safe to CENELEC standards, for use in a potentially hazardous area. Both loop powered and AC mains powered units have separate high and low flow alarm outputs.

FEATURES

- 4-20mA Transmitter
- Intrinsically safe approval
- Liquid or Gas Flow Calibration
- Built-in Flow Totaliser
- Operator adjustable High and Low Alarms
- 1% Accuracy
- VA meter reliability
- Program setting password protection

OPERATING PRINCIPLE

The VAMPIRE is a metal tube variable area flowmeter: as the flow up through the precision machined tapered tube increases, the float rises, reaching an equilibrium position. Electron beam welded within the float casing is a magnet. Two "Hall effect" magnetic field sensors measure both the vertical and horizontal components on this field. The angle of the magnetic field defines the position of the float in the tapered tube. This solid state measurement eliminates the problems of mechanical hysteresis associated with conventional magnetic pointers. Field angle is also independent of the absolute value of magnet strength, and sensor sensitivity.



The measurements are compared with a look-up table of field and flow data, stored in the VAMPIRE microprocessor memory on factory flow rig calibration. Flow rate is deduced accurately by interpolation between data points. The micro-processor converts the flow rate to correct Engineering units for the digital display on the LCD, adjusts the display meter pointer and 4-20mA output, sets the Alarm status and increments the totaliser as necessary.

Keypads on the VAMPIRE front panel are used to set flow alarm levels, zero the totaliser and select the digital display as rate or total. Via a password entry procedure, the site engineer can reset the display units or even rescale the flowmeter to allow for changes to process conditions. This programme also has selections to define what functions are accessible to the operator (without password), plus zero, span and time constant adjustments.

FLOW RANGES

Model	Flow Digit Digit	Water (L/hr)	Air (m ³ /hr)	Max ΔP (mBar)
GMTX 1 (15mm/1/2" Ø 250 Long)	1	160	5	15
	2	250	7.5	30
	3	400	12	20
	4	600	18	35

GMTX2 (25mm/1" Ø 250 Long)	1	1000	30	15
	2	1600	50	30
	3	2500	75	35
	4	4000	120	80
	5	6000	200	160
	6	10,000	360	400
GMTX3 (50mm/2" Ø 250 Long)	1	6	180	30
	2	10	300	40
	3	16	600	80
	4	25	1000	190
GMTX4 (80mm/3" Ø 300 Long)	1	25	-	140
	2	25	-	220
	3	60	-	525
GMTX5 (100mm/4" Ø 400 Long)	1	100	-	440

NB Ranges are quoted for Water at 20°C, Air at ATP (1.013 Bar and 20°C). Flow ranges for other fluids or process conditions on application. Units will be calibrated for customers specific conditions. Normally, scales offer 10:1 operating turndown. Pressure drops quoted are at maximum flow rates.

SPECIFICATION

Temperature	Ambient	GMTX: 50°C GMTA: 70°C
	Fluid	300°C
Housing	Polyester coated aluminium. Weatherproof to IP65	
Glands	4 off suitable for 2-5mm cable.	
Earth Stud	External M6 stud fitted.	
GMTXA	85-265V, 50-60Hz, 0-2A max - current consumption	
GMTXD	24Vdc loop powered (12V min, 30V max)	
Display	LCD 0-100% analogue scale 90mm long. Digital Display, 4/5 digits 10mm high. Selectable for Flow Rate or Total.	
Calibration	±1% FSD	
Analogue output	GMTXA	20mA into 600Ω max.
	GMTXD	4-20mA, 2 wire transmitter.
Resolution	0.5% on current output, 80mA	
Alarm output	GMTXA: 2 x 8A SPCO relays @ 230V ac max 100mA, max switched 30V, Internal Impedance 100Ω. GMTXD: 2 x open collector transistors.	
Totaliser	Display 1-19,999. Pulse output selectable instead of flow alarm output. 50msec pulse length. Max pulse rate 2/sec (GMTXD).	
Approvals	GMTXD is intrinsically safe approved to CENELEC EExia IIBT4. CRN (Contact Sales for details).	
Zener Barriers	28V, 300W for 20mA line. 10V, 50W for alarm signals.	

DISPLAY

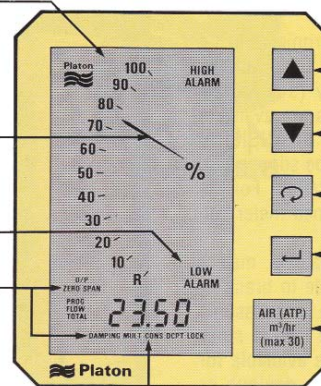
Liquid Crystal Display Panel

Flow Rate Meter (% Scale)

Alarm Messages Flash (when tripped)

Programme Prompts

Digital Display - Flow Rate or Flow Total



KEYPADS

High Alarm Value

Low Alarm Value

Reset Totaliser (if programme allows)

Select Rate or Total Display
Enter Programme via Password

Engineering Units Selected
for Digital Display

METAL TUBE FLOWMETER FAMILY

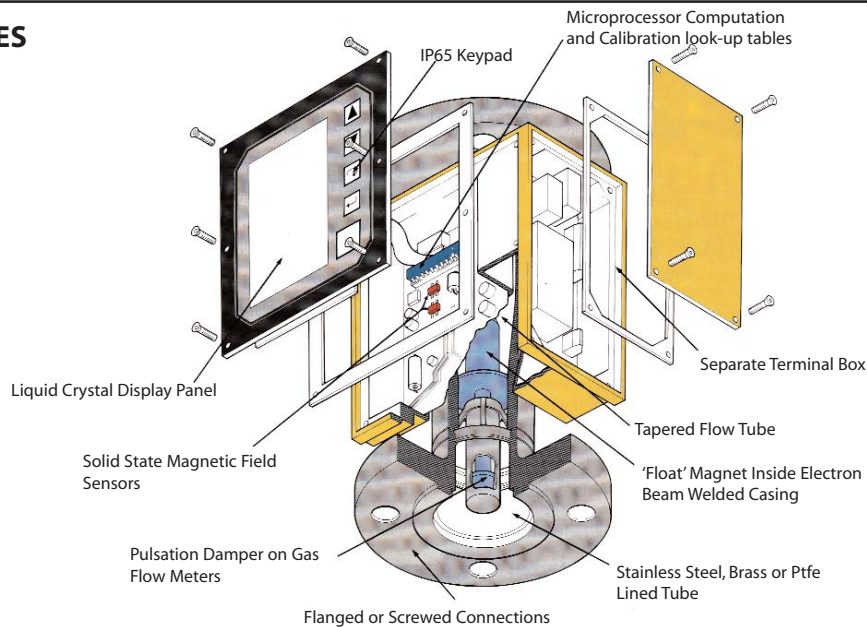
VAMPIRE flow measurement electronics can be supplied with any of the Platon metal tube variable area flowmeters in the GMT family (see leaflet DS1221 Screwed and DS1220 Flanged).



INSTALLATION

1. Ensure that no ferromagnetic material is situated within 100mm of the indicator.
2. Model GMTXA has output relays de-energised for alarm conditions.
3. Model GMTXD transistor outputs are "off" for alarm conditions. The negative line is common to the transistor outputs and the loop supply.
4. Intrinsically safe installations of Model GMTXD should be in accordance with BS5345 Part 4. The 4-20mA loop should be protected by an approved standard 28 Volt 300W shunt diode safety barrier. If required, the alarm outputs should be connected via approved 10 Volt 50W safety barriers.
5. It is recommended that the VAMPIRE LCD display is protected from both extremes of freezing and direct sunlight.

FEATURES



Every effort has been made during the preparation of this document to ensure the accuracy of statements and specifications. However, we do not accept liability for damage, injury, loss or expense caused by errors or omissions made. We reserve the right to withdraw or amend products or documentation without notice.

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