

## PRODUCT DATA SHEET

DS1225

### VAMPIRE – ELECTRONIC FLOWMETER

#### Type GMTX

A metal tube variable area flowmeter for liquid, gas or steam measurement, with microprocessor enhanced performance and LCD panel display of flow rate and total.

For line sizes from 15-100mm, the **VAMPIRE** (Variable Area Micro Processor 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.

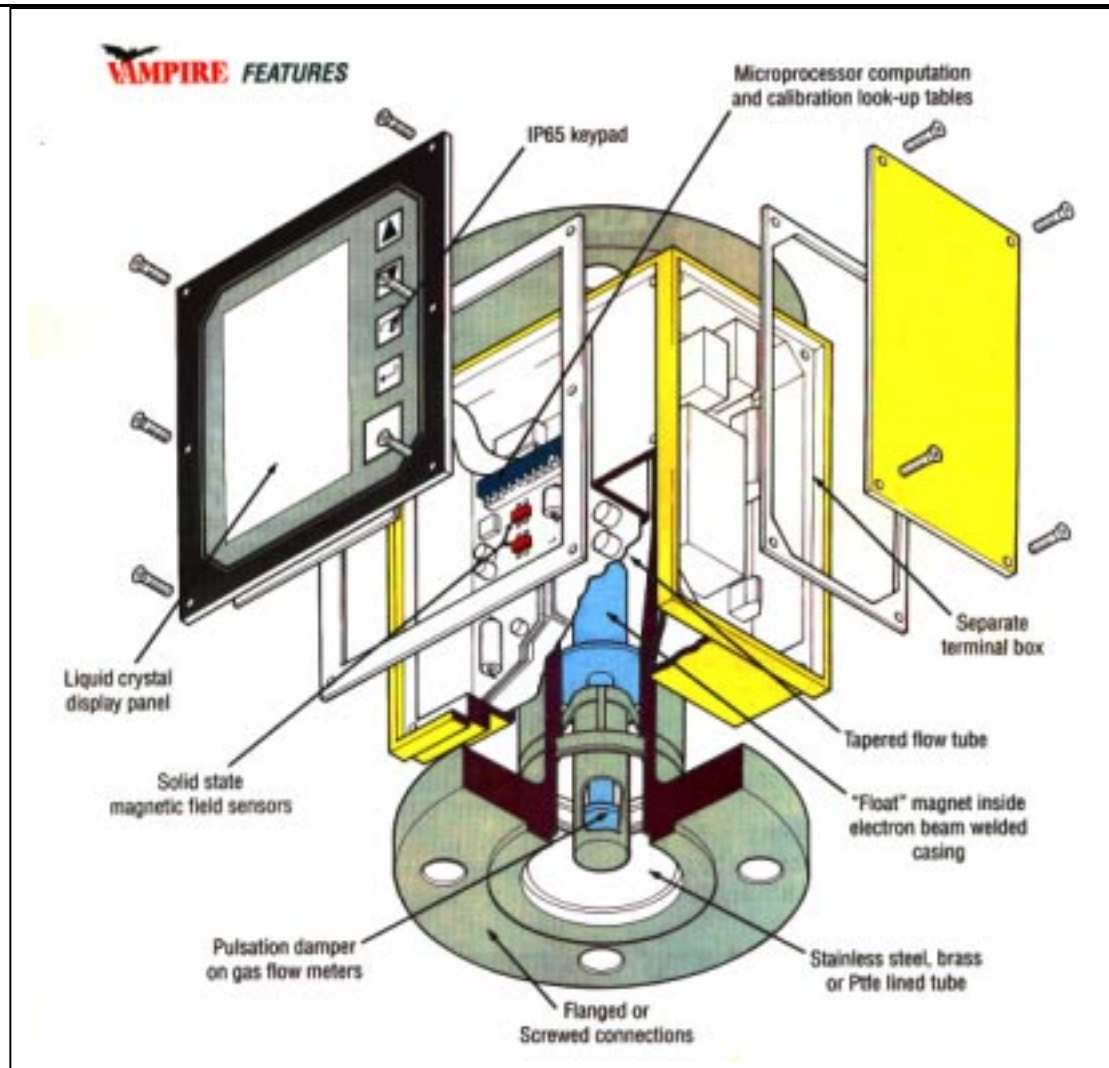
The Platon GMT range of metal tube VA flowmeters are robust and cost effective measurement devices, particularly applicable where dangerous or toxic fluids require the increased operational security and integrity of a fully welded construction. Useful for high pressure (100 bar) or high temperature (200°C) applications, the **VAMPIRE** electronic transmitter offers a 10:1 flow range.

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
- VAmeter reliability

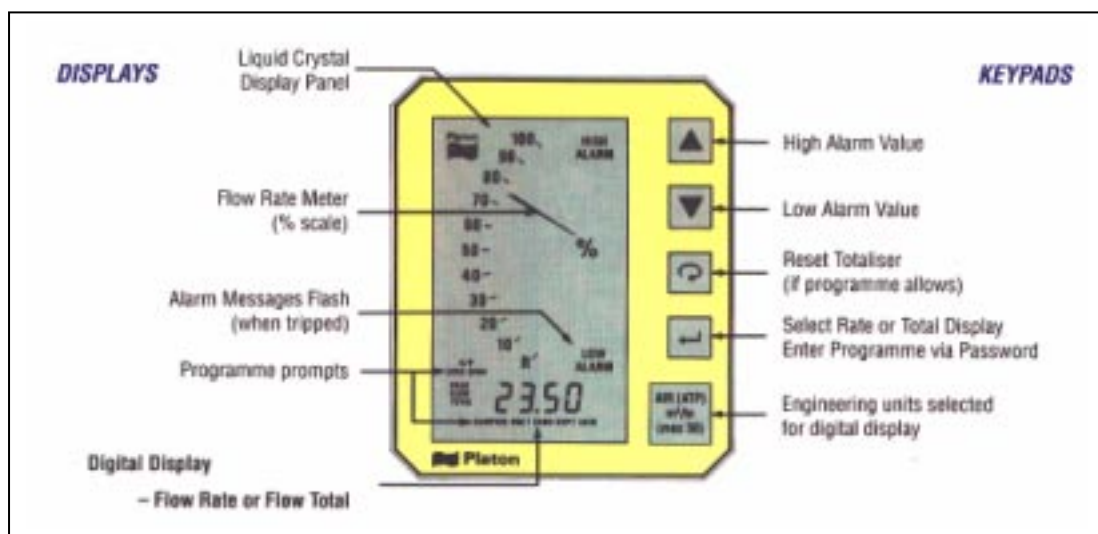


**OPERATING PRINCIPLE**

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 microprocessor 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, plus zero, span and time constant adjustments.



## SPECIFICATION

Flow tube:	Brass or Stainless steel, screwed or flanged connections. See Data Sheet DS1220.	Model GMTXA:	AC powered 85-265 Volts 50-60Hz
Size:	15mm to 100mm. See Flow Range Table.	Model GMTXD:	Loop powered 24Volt DC Nominal, 12V min. Intrinsically safe transmitter.
Flow:	Vertically upwards.	Display:	LCD meter, 0-100% scale 90mm long. Digital display, 4_digits 10mm high. Selectable for Rate or Total.
Rangeability:	10:1 minimum.	Calibration:	±1% FSD
Pressure max:	Up to 100bar standard	Analogue output:	GMTXA: 4-20mA into 600Ω max. GMTXD: 4-20mA 2 wire transmitter.
Temperature:	Fluid max. 300°C. Ambient max. 40°C min. -20°C typically.	Resolution:	0.5%
Housing:	Polyester coated aluminium. Weatherproof to IP65	Alarm output:	GMTXA: 2 x 8ASPCO relay. GMTXD: 2 x open collector transistors.
Glands:	4 off suitable for 2-5mm cable.	Totaliser:	Display 1-19,999. Pulse output selectable instead of flow alarm output. 50msec pulse length. Max pulse rate 2/sec (GMTXD).
Earth Stud:	External M6 stud fitted.	Approval:	Model GMTXD is approved intrinsically safe to CENELEC EExia IIC T4.
Damping:	Gas meters have integral flow pulsation damper.	Zener Barriers:	28 Volt 300Ω for 20mA line. 10 Volt 50Ω for alarm signals.
Response time:	Display update rate 2 per second. Step response time constant adjustable 3-100 seconds.		

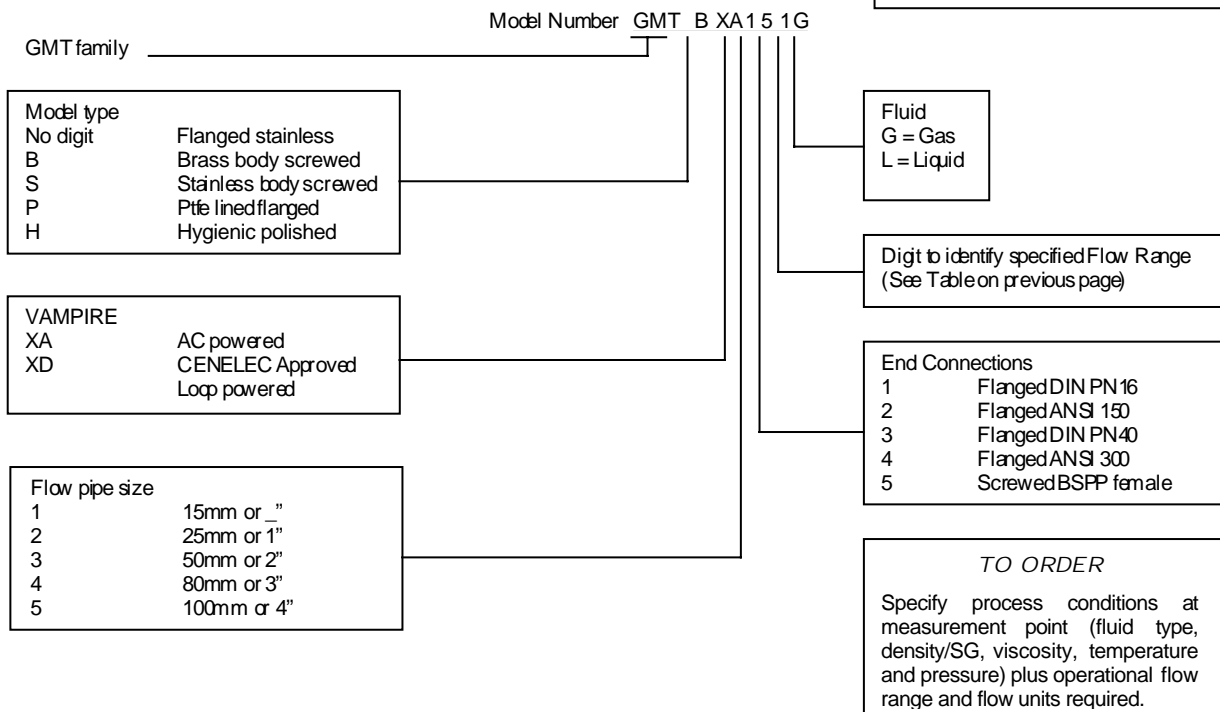
## FLOW RANGES

Model	Flow Digit	Water (L/Hr)	Air (m <sup>3</sup> /Hr)	Max ΔP (mBar)	Model	Flow Digit	Water (m <sup>3</sup> /Hr)	Air (m <sup>3</sup> /Hr)	Max ΔP (mBar)
<b>GMTX 1</b> (15mm/1" Ø 250 long)	1	160	5	15	<b>GMTX 3</b> (50mm/2" Ø 250 long)	1	6	180	30
	2	250	7.5	30		2	10	300	40
	3	400	12	20		3	16	600	80
	4	600	18	35		4	25	1000	190
<b>GMTX 2</b> (25mm/1" Ø 250 long)	1	1000	30	15	<b>GMTX 4</b> (80mm/3" Ø 300 long)	1	25	-	140
	2	1600	50	30		2	40	-	220
	3	2500	75	35		3	60	-	525
	4	4000	120	80	<b>GMTX 5</b> (100mm/4" Ø 400 long)	1	100	-	440
	5	6000	200	160					
	6	10,000	360	400					

## 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 DS1220). Stainless steel flanged units are available for line sizes 15-100mm. DIN PN16 or ANSI 150 flanges are stocked, other flanges can be supplied, or flow tubes produced in alternative materials. For the highest corrosion resistance a PTFE lined meter can be supplied, with a ceramic float.

For simple and cost effective installations, meters, with screwed connections are available in brass or stainless steel, the latter being suitable for pressures up to 100 Bar. Sizes  $\frac{1}{2}$ , 1" and 2" are held in stock with BSP threads. Special models are available for arduous duties, for example all brass designs or degreased units for oxygen service. Hygienic polished stainless steel units, designed to be crevice free for food and pharmaceutical applications, are produced with end fittings according to customer requirements.



## INSTALLATION

1. All VA meters are designed for installation vertically, with flow upwards.
2. The upstream and downstream pipe bores should suit the nominal size of the instrument.
3. Ensure that no ferromagnetic material is situated within 100mm of the indicator.
4. Model GMTXA has output relays de-energised for alarm conditions.
5. Model GMTXD transistor outputs are "off" for alarm conditions. The negative line is common to the transistor outputs and the loop supply.
6. 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 300Ω shunt diode safety barrier. If required, the alarm outputs should be connected via approved 10 Volt 50Ω safety barriers.
7. It is recommended that the VAMPIRE LCD display is protected from both extremes of freezing and direct sunlight.

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