

Ultrasonic Flowmeter

KAT-PLUS SERIES

The KAT-PLUS transit-time ultrasonic flowmeter brings a new dimension to non-intrusive flow measurement. Pipes diameters from as little as 6mm up to 3 metres, in an array of materials can be measured accurately. Digital sampling techniques, combined with state of the art micro controller technology and sophisticated statistical algorithms ensures that even under difficult operating conditions accurate measurements can be guaranteed.

The measurement of flow is based upon the principle that sound waves travelling in the direction of flow of the fluid require less time than when travelling in the opposite direction. The difference in transit times of the ultrasonic signals is an indication for the flow rate of the fluid.

Available in two formats, fixed installation and portable, the KAT-PLUS has the ability to meet high customer demands. The fixed installation can provide a wide array of outputs, whilst the portable unit with its 15 hour battery life and in-built data-logger enables the operator to collate data without the worry of power supplies.

Installation costs are significantly reduced with the KAT-PLUS. Sensors strapped to the outside of the pipe eliminate the need to break into the pipe or stop the process. The user friendly set-up programme requests diameter, thickness and material of the pipe and the fluid to be measured. The KAT-PLUS then calculates the ideal spacing for the sensors and when positioned correctly the flow rate of the fluid can be determined in minutes. Costs can be further reduced with the multi channel option, by allowing four sensors to be connected to one electronic unit.

The 30,000 point data logger, expandable up to 150,000 measuring points enables easy gathering of data in the field which in turn can be analysed on a

spreadsheet via the KAT-PLUS software package Movedata.

With numerous optional functions including wall thickness measurement, heat quantity measurement, graphics printing, relay outputs, analogue outputs, time programmable measuring mode, EEx certified sensors, the KAT-PLUS is as adaptable as required.

FEATURES

- EEx certified sensors
- Rugged construction
- Numerous optional functions
- Multi channel option
- 6mm to 3m pipe diameters
- 15 hour battery life



ACCESSORIES

- Sensor cable extension : Portable 2m, 5m, 10m, or 20m : Fixed 20m, 50m, 100m, special.
- Car power adaptor (portable only)
- Leather carrying case (portable only)
- External power supply 230VAC/12VDC (portable only)

- Stainless steel sensor positioning rail
- External ink jet printer, 192 DPI
- Data visualisation software (windows based)

SPECIFICATION

General	Portable	Fixed
Enclosure	Portable, aluminium, 270 x 100 x 180mm (without handle), 3.5 kg	Field mounted enclosure, aluminium 306x241x204mm
Degree of Protection	IP54 with sensors, (IP30 with optional printer)	IP65
Power Supply	Ni-cad re-chargeable battery, 4Ah or external power supply module 9 to 15 VDC	115 or 230 VAC, 24 or 48 VDC
Power Consumption	<2.5W in measurement mode	
Display	2x16 digit LCD matrix, backlit	
Ambient Temperature	0 to 50 C	
Pipe Wall Thickness Measurement	Optional	-
Heat Quantity Measurement	Optional	Optional
Integral Printer	Optional	-
Serial Interface	RS232 (9 pin D type connector) online/offline	2 x RS232, 1 offline communications (9 pin D-type connector) 1 online communication. RS-485 multi-drop communication optional
Inputs/Outputs	Optional	
Measuring Point Multiplexer	Optional, maximum 4 channels	
Flow Transmitter		
Flow Velocity Range	0.01m/s to 20m/s	
Resolution	0.25mm/s	
Repeatability	0.1% of reading +/- 0.01m/s	
Accuracy	1% to 3% of reading +/- 0.02m/s depending upon application. The stated accuracy can only be achieved, if pipe and medium parameters are known and entered correctly, and an axi-symmetrical flow profile is fully developed, ie the recommendations for the distances between the sensors and flow disturbance source have been observed	
Gaseous and Solid Particles	<2% if volume	
Cutt-off Flow Rate	Programmable	
Signal Damping	0 to 100 seconds	
Data Storage & Transmission		
Storage Capacity	Approximately 30,000 (optional 70,000 to 150,000) measuring values (with 1 measuring data set) Maximum 100 measuring data sets Maximum 15 parameter sets	
Clamping-on Sensors		
Temperature Range	Pipe diameter range	
-30 to +130C	(50) 100mm to 3000mm M2N	(10) 25 to 400 (1000)mm Q3N
-30 to +250C	M2E	Q3E
-30 to +80C	-	-
Ex Certified EEx m II T4/T6, -20 to +120C	M4N-EX	Q4N-EX

Notes:

1. Figures in brackets indicates the absolute minimum and maximum pipe diameters that it is possible to mount the sensors. Figures outside of brackets indicate preferred range.
2. Portable units are supplied with 1 metre + pipe diameter steel flexible conduit cable as standard. Extension up to 20 metres is possible.
3. Fixed installation units are supplied with 10m PVC insulated cable as standard. Extension up to 100m is possible.

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.

Head Office: 2 Downgate Drive, Sheffield, S4 8BT, England
Tel: +44(0)114 244 2521 Fax: +44(0)114 243 4838



RM&C Roxspur
Measurement
& Control Ltd

1-4 Campbell Court, Bramley, Tadley, Hampshire, RG26 5EG, England
Tel: +44(0)1256 884901 Fax: +44(0)1256 882986
email: sales@roxspur.com www.roxspur.com



CERTIFICATE No. FM22355