

Vibration monitoring field equipment

2.5 mm range eddy probe system
(optional 4.0 mm range as special order)

Key features

- Multiple probe options available with both metric and imperial dimensions
- Standard measurement range 2.5 mm
- standard sensitivity 7.87 V/mm
- Selectable system lengths (5 m, 7 m, and 9 m)
- DIN rail or plate mounted driver
- Armoured and unarmoured double-screened snap lock cables
- Compliant with API 670 standard
- ATEX and IECEx options available as special order



Measurement principle

The eddy current measurement system utilizes eddy current principle, being able to measure the distance to the target material as well as dynamic vibration. Measurement is non-contact and reference target material is ANSI 4140.

Eddy probes are widely used with journal bearings machines in shaft vibration, shaft position and casing expansion measurements.

System description

The eddy probe system consists of calibrated eddy probe, possible extension cable and universal driver.

System total cable length can be 5, 7 or 9 meters. Selected cable length is indicated with a LED on the driver. Gap voltage measurement is possible from a connector on top of the driver for an easy sensor adjustment.

Standard measurement range is 2.5 mm. Standard sensitivity is 7.87 V/mm.

Cables are available as armoured and unarmoured versions.

Technical specifications

System performance

Measurement range	
standard	2.5 mm
half sensitivity	4.0 mm
Linearity	±1%, -1.0 V to -19.0 V ±2%, 0 °C to +150°C @ -10 V
Std sensitivity	7.87 V/mm (200 mV/mil) ±1%
Half sensitivity	3.94 V/mm (100 mV/mil) ±1%
Resolution	< 0.001 mm
Interchangeability	Maximum interchangeability error replacing either probe, extension cable or driver in calibrated system is ±5 %.
Frequency response	DC to 10 kHz
Reference target material	ANSI 4140

Probe

Probe diameter	8.0 mm
Probe tip material	PPS 40% glass filled
Probe body material	Stainless steel
Cable type	Triaxial 75 Ω coaxial FEP outer jacket 3.2 mm outer diameter
Armoured option	Convuluted stainless Steel 6.4 mm outer diameter
Probe resistance	3.1 Ω ±0.2 Ω
Operating temperature	-40 °C – +180 °C
Storage temperature	-40 °C – +180 °C
Minimum target diameter	16 mm
Magnetic field effect	<1 % at 110 mT
Connector	Female miniature coaxial

Driver

Linear voltage range, standard	-1.0 V to -19.0 V for 0.254 mm (10 mil) to 2.54 mm (100 mil)
Linear voltage range, half sensitivity	-1.0 V to -16.0 V for 0.254 mm (10 mil) to 4.064 mm (160 mil)
System length selection	Internal switch 5 m, 7 m or 9 m
System length indication	LED lamp
Power supply	-16.0 VDC to -28.0 VDC Output is limited to 1.2 V below power supply when power supply is < -21.5 V
Power supply sensitivity	< 0.3 mV _{out} / V _{supply}
Power consumption	3 mA typical, 7 mA max.
Output impedance	75 Ω
Monitor output impedance	10 kΩ
Sensor connector type	Self locking miniature male coaxial
Monitor connector type	3.5 mm audio jack
Mounting	DIN rail or plate with screw
Mass	250 g
Dimensions (W x H x L)	25.0 mm x 57.54 mm x 110.7 mm
Operating temperature	-40 °C – +90 °C
Storage temperature	-40 °C – +90 °C

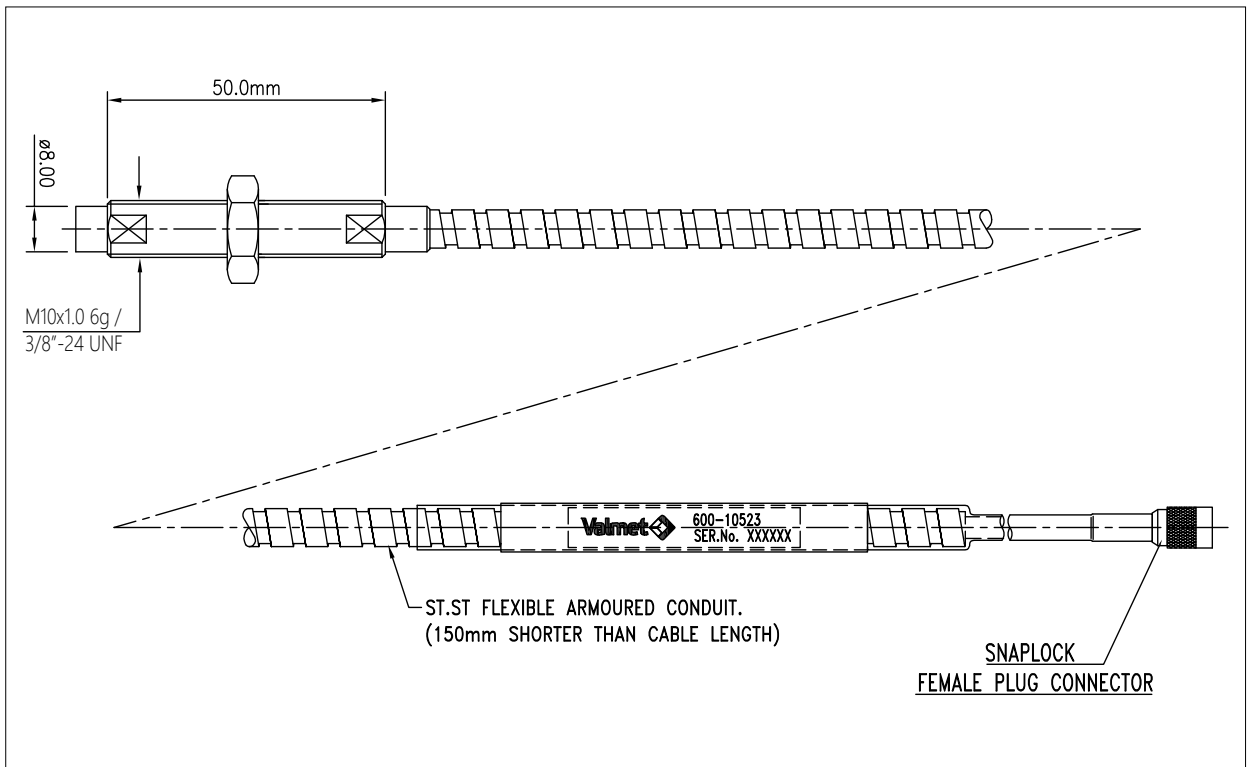
Item code	2.5 mm range eddy probes, metric
600-10830	Eddy probe: 0.5 m unarmoured cable, reverse mount, M10x1 body
600-10455	Eddy probe: 1 m unarmoured cable, straight mount, M10x1 50 mm body
600-10523	Eddy probe: 1 m armoured cable, straight mount, M10x1 50 mm body
600-10546	Eddy probe: 1 m unarmoured cable, reverse mount, M10x1
600-10456	Eddy probe: 5 m unarmoured cable, straight mount, M10x1 50 mm body
600-10457	Eddy probe: 7 m unarmoured cable, straight mount, M10x1 50 mm body
600-10557	Eddy probe: 7 m unarmoured cable, straight mount, M10x1 30 mm body
600-10824	Eddy probe: 9 m unarmoured cable, straight mount, M10x1 30 mm body
600-10458	Eddy probe: 9 m unarmoured cable, straight mount, M10x1 50 mm body

Item code	2.5 mm range eddy probes, imperial
600-10602	Eddy probe: 1 m armoured cable, straight mount, 3/8" UNF 1.2" body, 0.2" unthreaded length
600-10603	Eddy probe: 1 m armoured cable, straight mount, 3/8" UNF 5.6" body, 0.4" unthreaded length
600-10601	Eddy probe: 1 m unarmoured cable, reverse mount, 3/8" UNF body
600-10601EX	Eddy probe: 1 m unarmoured cable, reverse mount, 3/8" UNF, 2.5 mm range, EX/IECEX
600-10613	Eddy probe: 7 m armoured cable, straight mount, 3/8" UNF 7.0" body
600-10614	Eddy probe: 7 m armoured cable, straight mount, 3/8" UNF 5.0" body
600-10823	Eddy probe: 7 m unarmoured cable, reverse mount, 3/8" UNF body

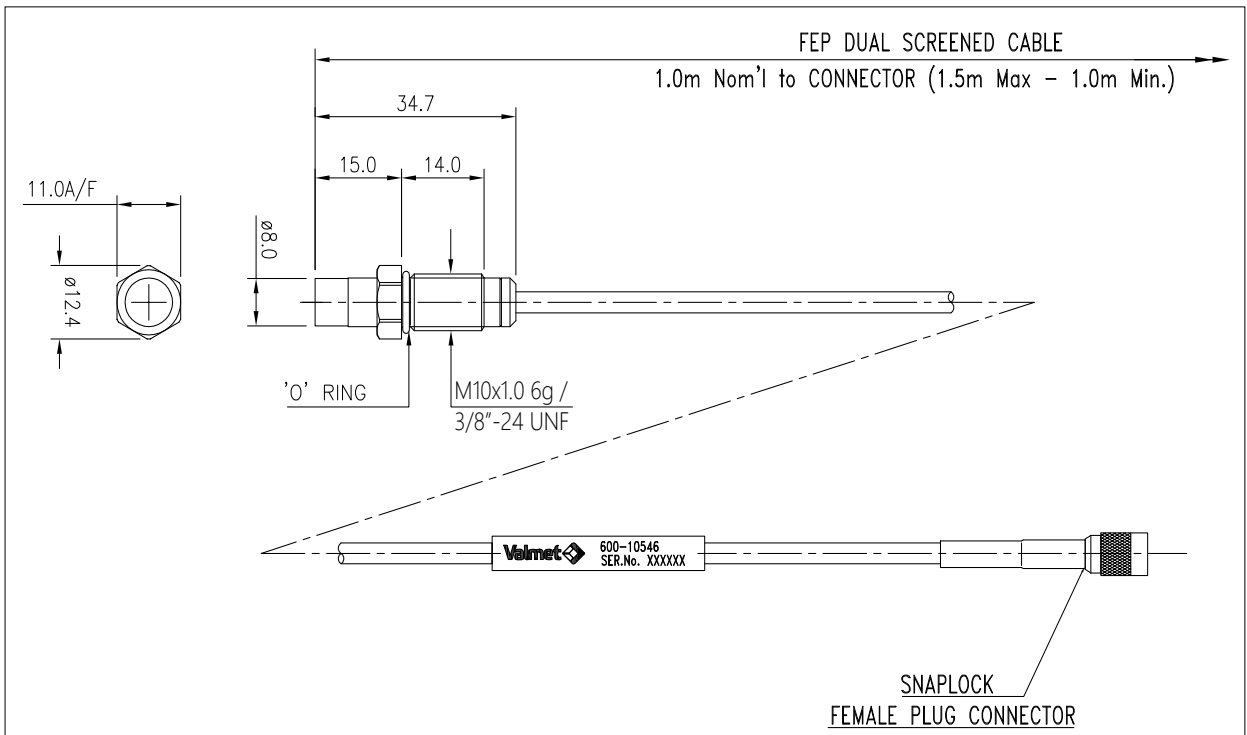
Item code	4.0 mm range eddy probes
600-10522	Eddy probe: 1 m unarmoured cable, straight mount, M10x1 50 mm body
600-10604	Eddy probe: 1 m armoured cable, reverse mount, 3/8" UNF body

Item code	Drivers
600-10459	Driver: for 2.5 mm range
600-10459EX	Eddy probe driver, 2.5 mm range, ATEX/IECEX
600-10605	Driver: for 4.0 mm range

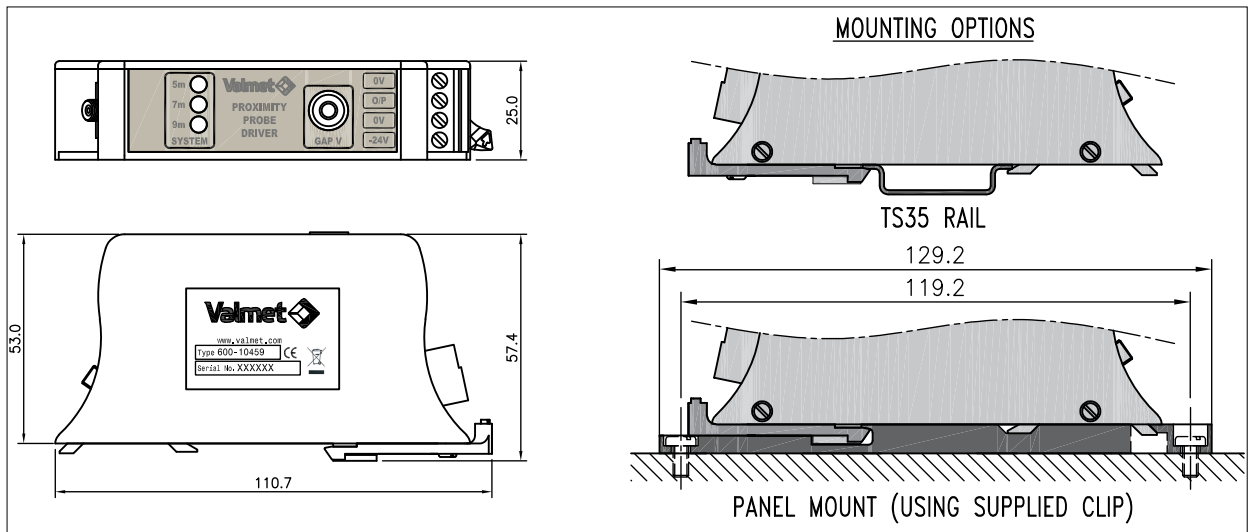
Item code	Universal extension cables
600-10460	Extension cable: unarmoured, 4 m
600-10460EX	Eddy probe extension cable 4 m, unarmoured, ATEX/IECEX
600-10524	Extension cable: armoured, 4 m
600-10461	Extension cable: unarmoured, 6 m
600-10462	Extension cable: unarmoured, 8 m
600-10547	Extension cable: armoured, 8 m
600-10829	Extension cable: unarmoured, 8.5 m



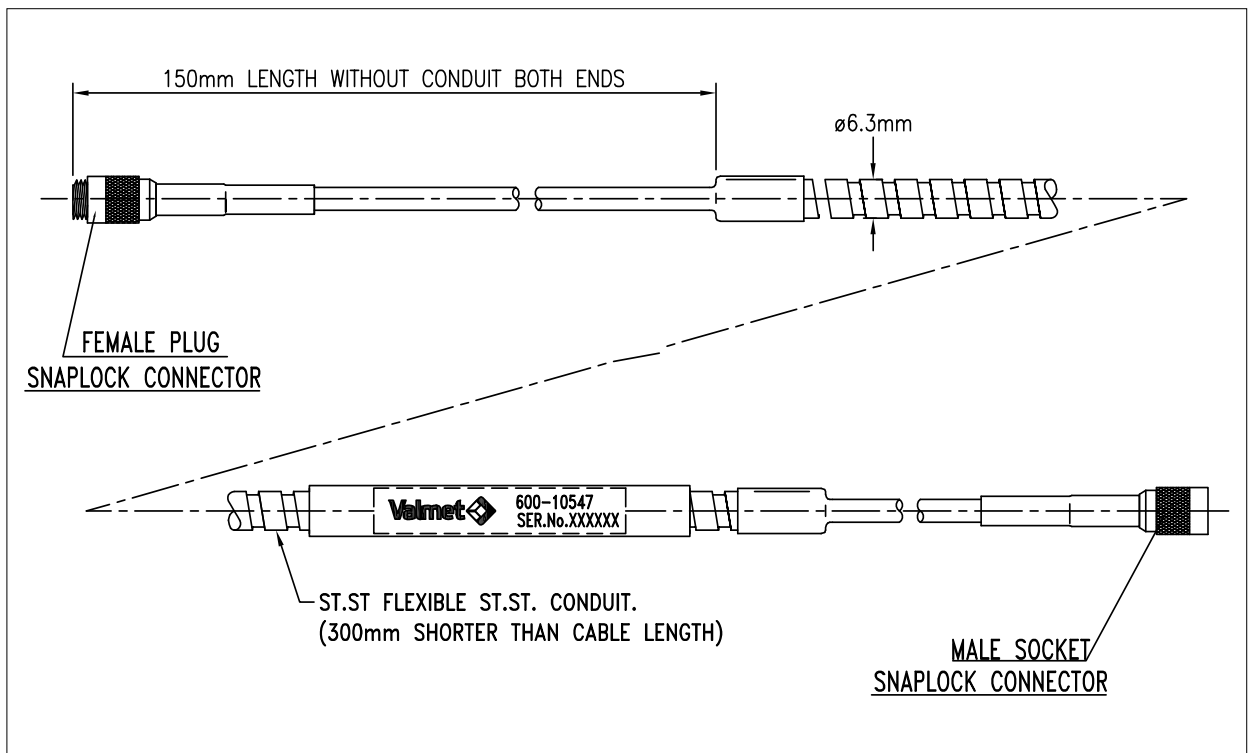
Example picture: Eddy probe straight mount, 50 mm body length, no unthreaded, armoured



Example picture: Eddy probe reverse mount



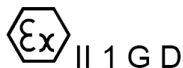
Driver



Armoured extension cable

Hazardous Area Approvals – ATEX / IECEx:

Drivers/transmitters:

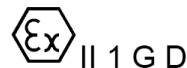


Ex ia IIC T4 Ga

Ex ia IIIC T135°C Da

-40°C ≤ Ta ≤ +80°C

Probe*:



Ex ia IIC T4/T2 Ga

Ex ia IIIC T135°C/ T300°C Da

-40°C ≤ Ta ≤ +80°C/+180°C

For more information, contact your local Valmet office. www.valmet.com

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