



TECHNICAL GUIDANCE

For cooling water in engine room

EF-AUTO

Electromagnetic Flowmeter

OUTLINE

The electric connection part of detector has been miniaturized, so that the electromagnetic flowmeter, suitable for the flow measurement of cooling water in the engine room of automobile, may be able to be easily installed in the engine room, and also radiator hose has been made to be connected directly.

FEATURES

- The hose fitting is detachable, and it can be made according to the diameter of required hose fitting, and the measurement for different hoses in inside diameter is easily made just by exchanging the fitting.
- The reduced tube has been adopted because of no projection at flow path, very small pressure loss, and no influence by the piping, up- and downstream.
- The part of electric connection of detector has been made smaller, using the exclusive cable with connector, and it is possible to make wiring by one-touch.

PRINCIPLE

There is a pair of the wetted contact electrode in the nonmagnetic measuring tube, and the excitation coil is arranged at the upper and lower sides of flow path, so that it can intersect with this electrode axis perpendicularly. When the excitation current is impressed on the excitation coil, a magnetic field is produced. At this time, if the cooling water flows into flow path, the voltage in proportion to flow velocity is generated between the electrodes by Faraday's law of electromagnetic induction. The flow rate can be calculated by this voltage and the sectional area of flow path.

SPECIFICATIONS

Detector / Converter	: EGS5000 (Detector) / EGC300W (Converter)
Diameter	: 6, 10, 15, 25, 40, & 50 mm
Fluid temperature	: -20 to 180 °C
Fluid pressure	: 0.0 to 1.0 MPa
Piping connection	: Hose fitting
Electric connection	: Electrode signal cable Exciting current cable Each 10 m in length as standard
Construction	: Equiv. to IP65
Material	
Housing	: Stainless steel casting, equivalent to SCS13 for 6 to 15 mm in diameter : Stainless steel, equivalent to SUS304 for 25 to 50 mm in diameter
Hose Fitting	: SUS304 and Aluminum alloy *1
Wiring connection part	: Aluminum alloy *1
Seal	: FKM
*1 Outer surface of aluminum alloy is painted.	
Analog output	: 4 to 20 mA DC, Load resistance 1kΩ or less



Power source	: 100 to 230 V AC (85 to 250 V AC Free) *2 48 to 63 Hz
	*2 The attached power cable has a rating of 125V.
Power consumption	: 22 VA approx.
Detector installation posture	: Either horizontal or vertical. However, the electrode axis must be horizontal.
Converter	: Wall installation type
Other specifications	: Conforming to EGS5000F Detector and EGC300W Converter

Accessories:

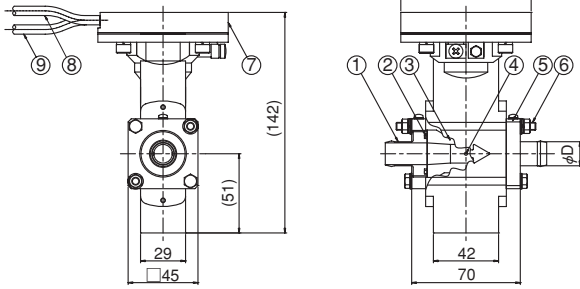
Hose fitting	: 2 pcs./set
O-ring	: 2 pcs./ set
Hose band	: 2 pcs./ set
Power cable	: 5 m/pc.
Analog output cable	: 10 m (standard)/pc.
Metal fixture for installing converter on 2 inch pipe	: 1set

FLOW RANGE

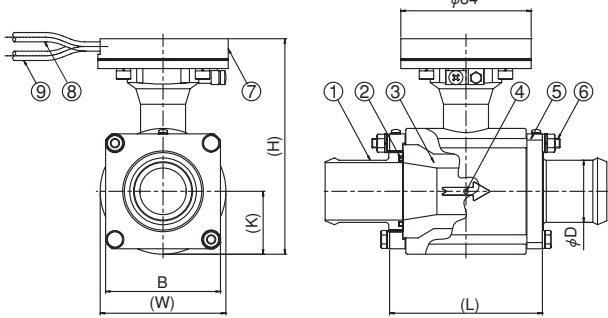
Connection size (mm)	Flow range (L/min)	
	Min. range	Max. range
6	0 to 1	0 to 20
10	0 to 2	0 to 55
15	0 to 4	0 to 125
25	0 to 9	0 to 350
40	0 to 23	0 to 900
50	0 to 36	0 to 1400

OUTLINE OF DETECTOR

◆ Connection size: 6 mm to 15 mm



◆ Connection size: 25 mm to 50 mm



No.	Parts Name	Material	Quantity	Remarks
1	Hose fitting	SUS304	2	
2	O-ring	FKM	2	
3	Measuring tube	Al ₂ O ₃ or ZrO ₂	1	*1
4	Wetted electrode	Platinum or Platinum cermet	2	*2
5	Adapter	A1050	2	
6	Fixing screw for adapter	SUS304	4	
7	Aluminum head	A1050	1	
8	Electrode signal cable	—————	1	Dia: Ø6 approx.
9	Excitation current cable	—————	1	Dia: Ø6 approx.

*1 : ZrO₂ for Connection size 6 mm to 25 mm

Al₂O₃ for 40 mm to 50 mm

*2 : Platinum cermet for 6 mm to 25 mm

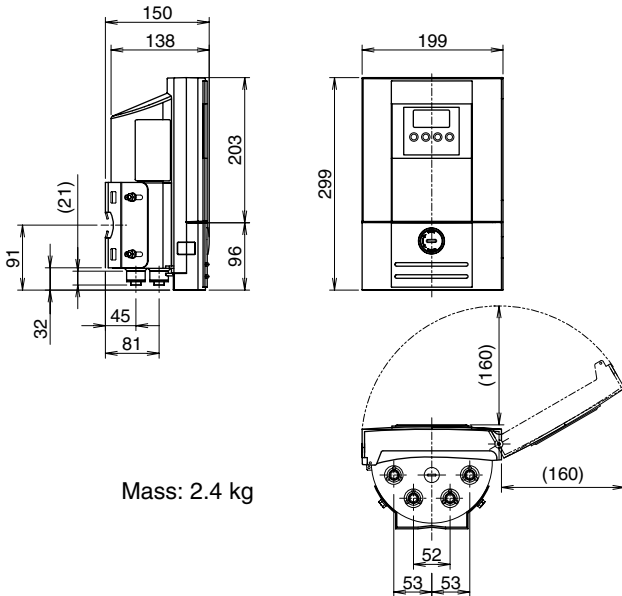
Platinum for 40 mm to 50 mm

Connection size	Dimension (mm)					Hose fitting ØD *
	H	W	B	K	L	
6 mm	—	—	—	—	—	Ø11
10 mm	—	—	—	—	—	Ø14
15 mm	—	—	—	—	—	Ø16
25 mm	124	Ø66	□62	33	70	Ø27
40 mm	139	Ø81	□74	41	99	Ø40
50 mm	155	Ø99	□90	49	122	Ø52

* : Possible to make hose fittings in nonstandard diameter. Advise us of inside diameter of required hose.

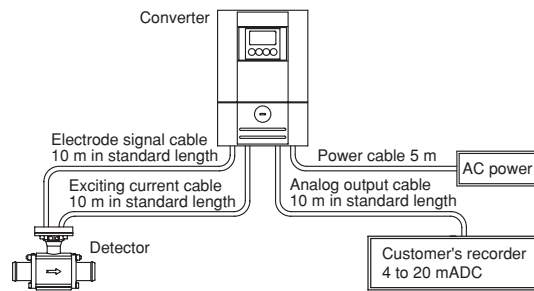
OUTLINE OF CONVERTER

◆ Converter



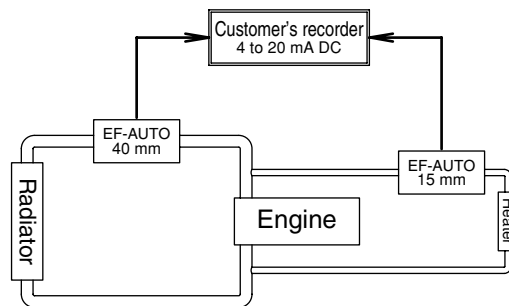
Mass: 2.4 kg

SYSTEM CONFIGURATION



Each cable is connected using a connector at the bottom of converter.

EXAMPLE:



* Specification is subject to change without notice.

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