

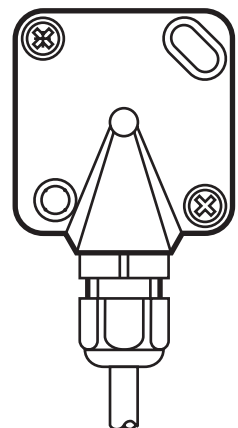


Installation instructions
Inclination sensor

ecomat100[®]

UK

**EC2019
EC2045**



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1 Safety instructions

This description is part of the sensors.

It contains texts and drawings concerning the correct handling of the sensors and must be read before installation or use.

Observe the information of the description. Non-observance of the notes, operation which is not in accordance with use as prescribed below, wrong installation or handling can result in serious harm concerning the safety of persons and plant.

The instructions are for authorised persons according to the EMC and low voltage directives. The controllers must be installed and commissioned by a skilled electrician (service technician, etc.).

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If the sensors are not supplied by the mobile on-board system (12/24 V battery operation) it must be ensured that the external voltage is generated and supplied according to the criteria for safety extra-low voltage (SELV).

If the sensors are operated with an AC/DC power converter, it must be ensured that this AC/DC power converter complies with the requirements of the standard 61000-6-2 and limits the test interference to a value of ± 0.05 kV.

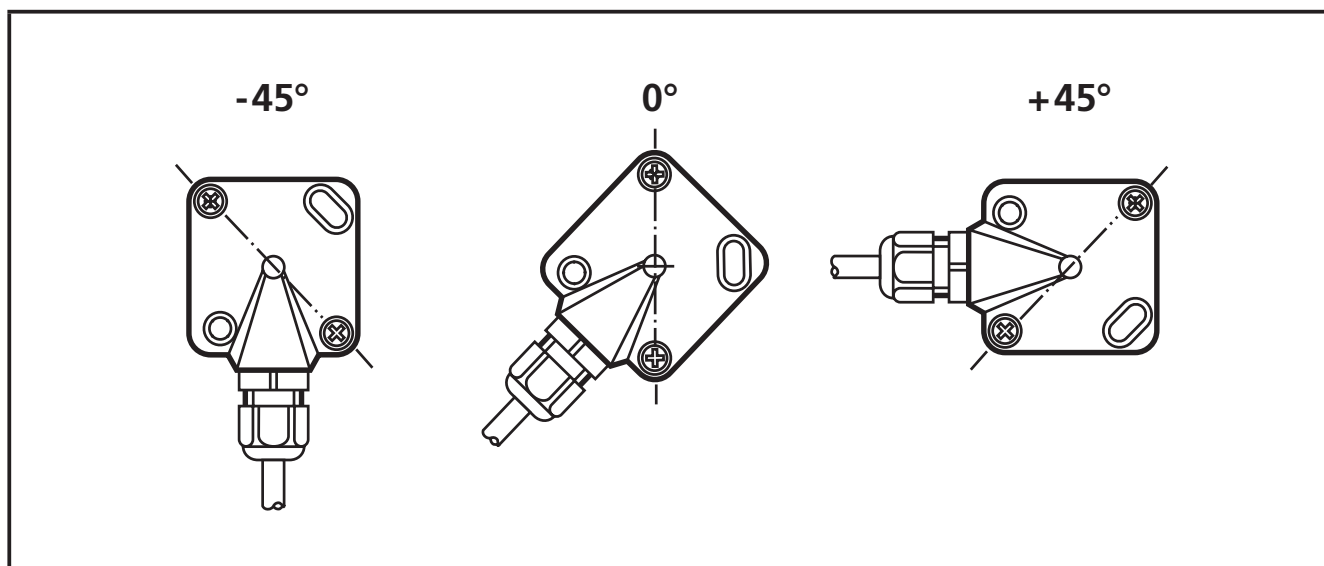
The wiring of all signals in connection with the SELV circuit of the unit must also comply with the SELV criteria (safe extra-low voltage, safe electrical separation from other electric circuits).

If the supplied SELV voltage has an external connection to ground the responsibility lies with the user and the respective national regulations for installation must be complied with. All statements in these operating instructions refer to the sensors the SELV voltage of which is not grounded.

Only the signals indicated in the technical data or on the type label may be supplied to the connection terminals or wires.

In case of malfunctions or uncertainties please contact the manufacturer. Tampering with the sensor can lead to considerable risks for the safety of persons and plant. It is not permitted and leads to the exclusion of any liability and warranty claims.

2 Mounting



Fastening: M5 cylinder screw (to DIN 912)

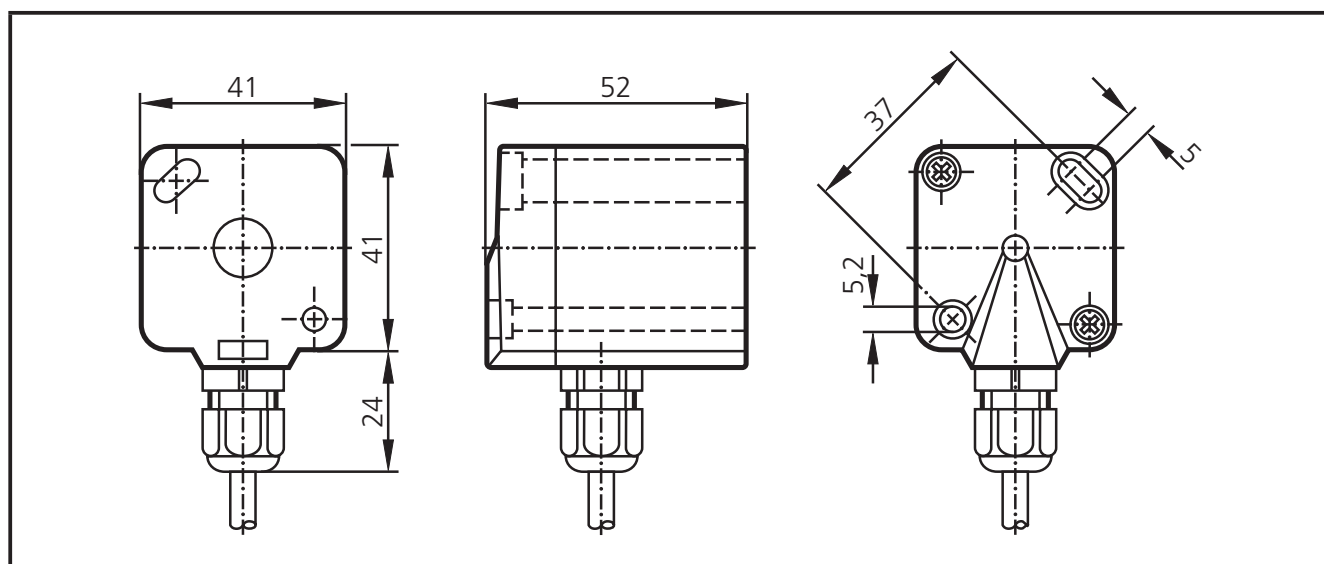
Tightening torque: 1,8 Nm

3 Electrical connection

Description	Core colours	EC2019	EC2045
Operating voltage	black (BK)	15...30 V DC	8...30 V DC
Ground	brown (BN)	GND	GND
Analog output	blue (BU)	0...10 V DC	0.5...4.5 V DC

To protect the whole system the supply voltage must be protected with max. 0.5 A.
The signal cable length is max. 30 m.

4 Dimensions



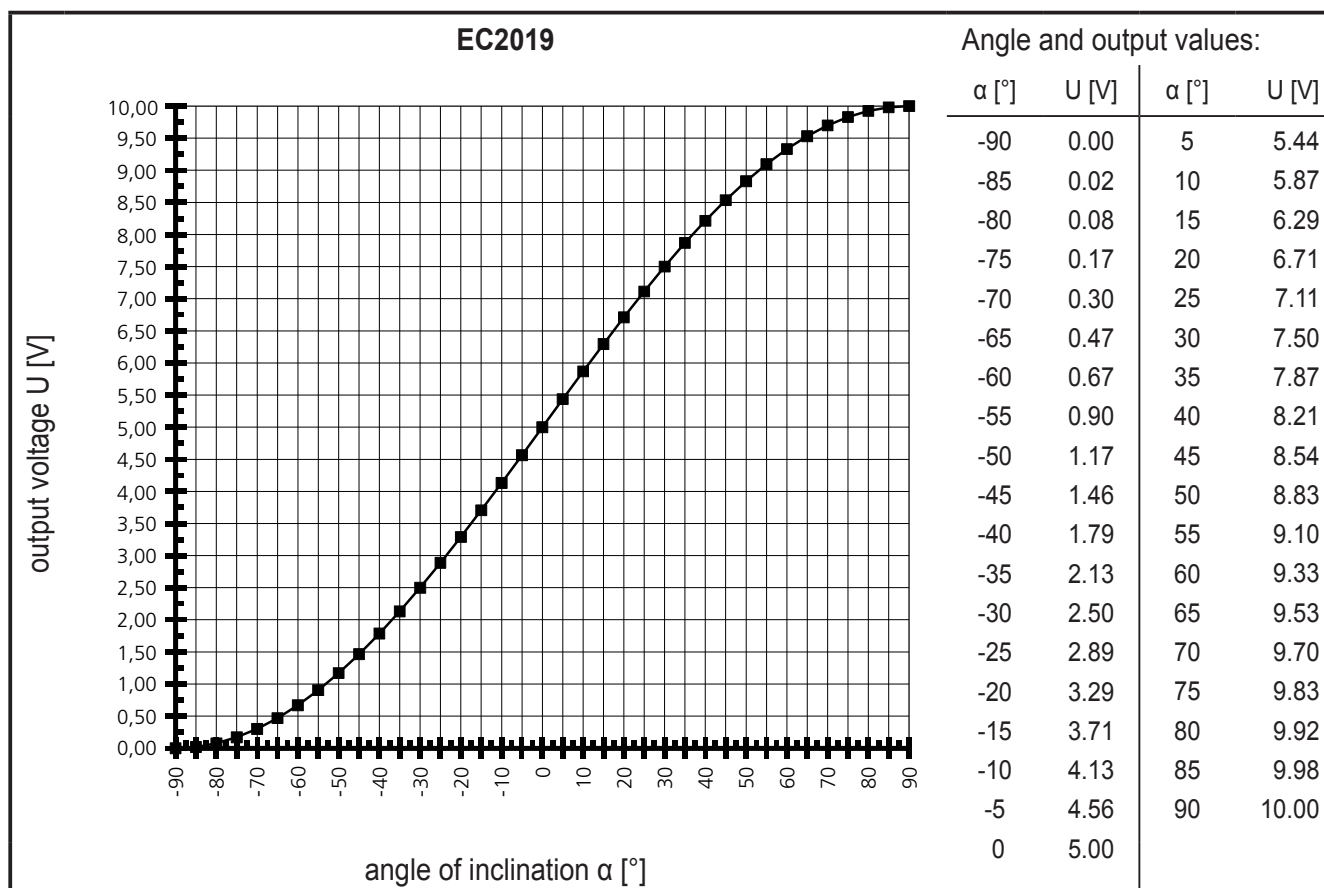
5 Technical Data

Order no.	EC2019	EC2045
Operating voltage	15...30 V DC	8...30 V DC
Current consumption max.	< 35 mA	< 35 mA
Analog output	0...10 V DC	0.5...4.5 V DC
Output function	$U_a = 5 \text{ V} + \sin(\alpha) \times 5 \text{ V}$	$U_a = 2.5 \text{ V} + \sin(\alpha) \times 2 \text{ V}$
Load impedance	> 50 k Ω to signal ground at the output	
Short-circuit protection	to UB and to ground	
Reverse polarity / overload protection	• / •	
Angular range (α)	$\pm 90^\circ$	
Zero error	$< \pm 7^\circ$ (the zero error can be reduced by $\pm 4^\circ$ by adjustment of the unit)	
Operating temperaturer	$-30...+85^\circ\text{C}$	
Protection	IP 67, II	
Housing material	plastic (Nyrol, PPE)	
Connection	UR cable, 3.5 m / 3 x 0.5 mm ²	

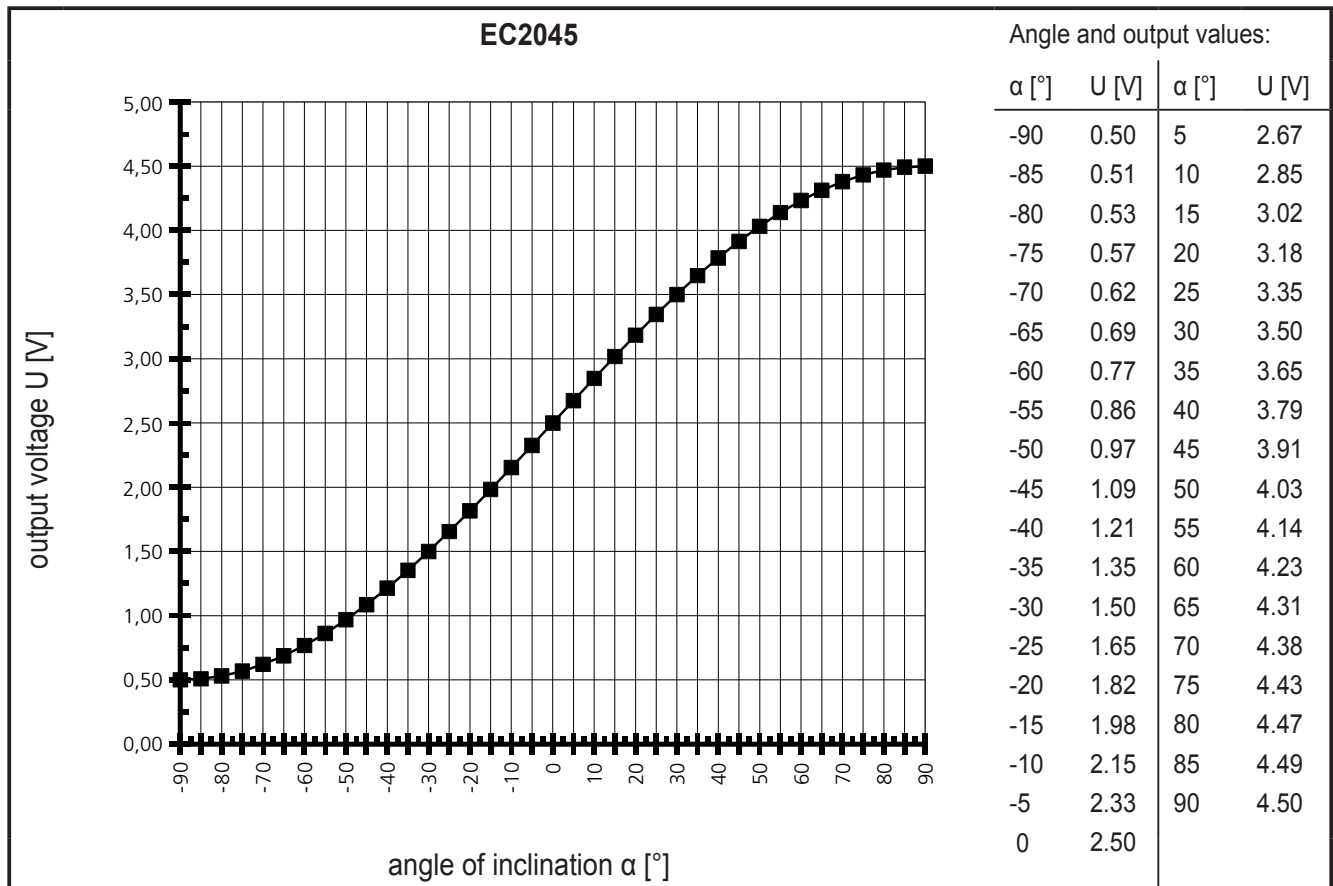
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6 Characteristics of the output function

6.1 EC2019



6.2 EC2045



7 Maintenance, repair and disposal

As the inclination sensor does not contain any components which must be maintained by the user, the housing must not be opened. The sensor may only be maintained by the manufacturer. The disposal must be carried out according to the corresponding national environmental regulations.

8 Declaration of conformity

The EC Declaration of Conformity and approvals can be found at:
www.ifm.com → Data sheet search → Order no. → Approvals