JUMO GmbH & Co. KG
Delivery address: Mackenrodtstraße 14
36039 Fulda, Germany
Postal address: 36035 Fulda, Germany
Phone: +49 661 6003-0
Fax: +49 661 6003-607
Email: mail@jumo.net
Internet: www.jumo.net

JUMO Instrument Co. Ltd.
JUMO House
Temple Bank, Riverway
Harlow, Essex, CM20 2DY, UK
Phone: +44 1279 63 55 33
Fax: +44 1279 62 50 29
Email: sales@jumo.co.uk
Internet: www.jumo.co.uk

JUMO Process Control, Inc.
6724 Joy Road
East Syracuse, NY 13057, USA
Phone: +1 315 437 5866
Fax: +1 315 437 5860
Email: info.us@jumo.net
Internet: www.jumousa.com

JUMO miroVIEW

Smart digital indicator with limit value monitoring function

Brief description

The smart digital indicator is used for the electronic display of various process variables. The process variables are acquired by the device via RTD temperature probe, thermocouple, current 0(4) to 20 mA or voltage 0 to 10 V. Further functionalities are limit value monitoring, min/max value storage, hold function and tare function. The device is available with 2 relays or with 1 relay and 1 digital output (DC 0/14 V).

The device is characterized by simple, clearly structured operation supported by texts in English, German, French, and Spanish. Process values, texts, and parameters are shown in two 18-segment LCD displays. Additional display elements inform about the switch positions of the outputs, timer status, and temperature unit.

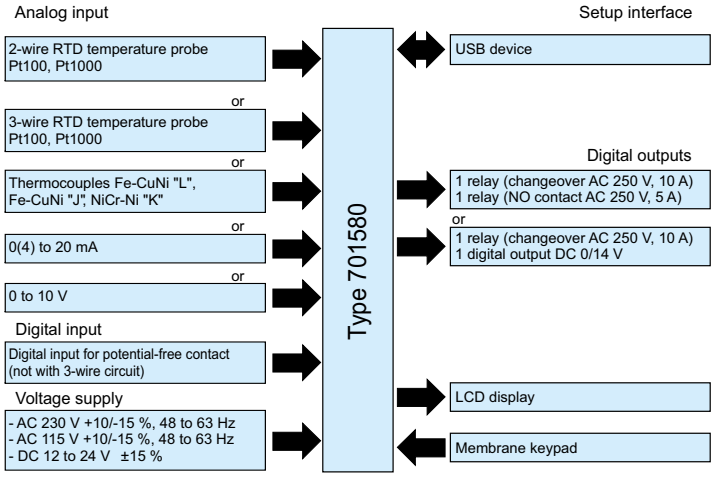
Terminal blocks with PUSH IN technology enable fast electrical installation.

Operation, parameterization, and configuration are carried out via a membrane keyboard with four keys. The setup program on a PC allows the device to be configured without any problems. No separate voltage supply is required when configuring via the USB interface (USB-powered).



miroVIEW Type 701580

Block diagram



Special features

- Integrated timer function
- Service and operating hours counter
- Fast wiring through PUSH IN technology
- High-quality display and intuitive operation
- Configuration on the device or with the setup program (accessories) via USB interface (USB-powered
- Operator guidance with text support in 4 languages
- Limit value monitoring function

Approvals and approval marks (see technical data)

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Description

Indicator functions

In addition to the classic display of the measured value, the device has additional functions such as min/max value display, a hold function for freezing the measured value and a tare function for weighing applications. Some functions can be configured via the membrane keypad on the front.

Inputs and outputs

RTD temperature probe, thermocouple, current, voltage can be selected as analog input. A combination of 1 changeover contact and 1 normally open contact or 1 relay output in combination with a digital input is available as relay outputs. The digital input is provided to connect a potential-free contact.

USB device interface

The device is equipped with a USB device interface (micro-B socket on the rear side). This is intended for connecting to a PC and for configuring the device via the setup program. Thereby the device is powered via the USB interface. As a result, no mains supply is required during the configuration.

Electrical connection

The electrical connection saves time by using practical spring-cage terminals (Push-In technology).

Limit value monitoring functions

The device is equipped with three limit value monitoring functions, each with two configurable alarm functions. Any analog signal from a selector is selected as the value to be monitored. An absolute value serves as the limit value. Special functions such as switch-on/switch-off delay, pulse function, alarm suppression in the switch-on phase or in case of a parameter change, alarm latch, and lock with acknowledgment are available. With the limit value monitoring function, extensive alarm and limit value functions can be implemented.

Timer

After the timer is started, a signal is output for the duration of the timer running time; this signal is invertible. It is also possible to start the timer after the lead time has elapsed or after reaching a tolerance limit. A timer end signal can be output after the timer has elapsed (limit by time or acknowledgement).

Service counter

The service counter is used either to count the switching frequency of a binary signal or to determine its switch-on duration. When the set limit value is reached, a binary signal is activated that needs to be acknowledged.

In addition, an operating hours counter is available that determines the device's operation time.

Setup program

The setup program, which is available as an accessory, provides the user with an easy and comfortable way to configure the device using a PC. This allows data records to be created, edited and transferred to the device, as well as read out from there. A recording function for start-up is available.

Customer-specific Linearization

Sensor signals with special characteristic line properties can also be used through customer-specific linearization. Programming is carried out in the setup program on the basis of a value table with up to 40 value pairs or through a formula (4th order polynomial).

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Technical data

Analog input

Thermocouples

Designation	Type	Standard	ITS	Measuring range	Accuracy[a]
Fe-CuNi	"L"	DIN 43710 (1985-12)	IPTS-68	-200 to +900 °C	≤ 0.4 %
Fe-CuNi	"J"	DIN EN 60584-1:2013 IEC 60584-1:2013	ITS-90	-210 to +1200 °C	≤ 0.4 % from -100 °C
NiCr-Ni	"K"	DIN EN 60584-1:2013 IEC 60584-1:2013	ITS-90	-270 to +1300 °C	≤ 0.4 % from -80 °C

[a] Accuracy refers to the measuring range.

Ambient temperature influence	≤ 300 ppm/K
Cold junction	Internal or external (constant)
Cold junction temperature	0 °C (permanently set)
Input filter	Digital filter, 2nd order; filter constant can be set from 0 to 100.0 s

RTD temperature probe

Designation	Standard	ITS	Connection type	Measuring range	Accuracy[a]	Measuring current
Pt100	DIN EN 60751:2008 IEC 60751:2008	ITS-90	Two/three-wire	-200 to +600 °C	≤ 0.25 %	500 µA
Pt1000	DIN EN 60751:2009 IEC 60751:2008	ITS-90	Two/three-wire	-200 to +600 °C	≤ 0.25 %	100 µA
Customer-specific				150 to 3000 Ω	≤ 0.25 %	< 500 µA

[a] Accuracy refers to the measuring range.

Ambient temperature influence	≤ 300 ppm/K
Sensor line resistance	Max. 30 Ω per line
Input filter	Digital filter, 2nd order; filter constant can be set from 0 to 100.0 s

Voltage, current (standard signals)

Designation	Measuring range	Accuracy[a]	Input resistance or compliance voltage
Voltage	0 to 10 V	≤ 0.15 %	> 100 kΩ
Current	4 to 20 mA	≤ 0.125 %	< 2.5 V
	0 to 20 mA	≤ 0.125 %	< 2.5 V

[a] Accuracy refers to the maximum measuring range. Small measuring spans lead to reduced linearization accuracy.

Ambient temperature influence	≤ 100 ppm/K
Deviation below/above the measuring range	According to NAMUR recommendation NE 43 (only current input 4 to 20 mA)
Input filter	Digital filter, 2nd order; filter constant can be set from 0 to 100.0 s

Measuring circuit monitoring

The device behavior in the event of a malfunction is configurable.

Measuring probe	Measuring range underflow	Measuring range overflow	Short-circuit (probe/line)	Break (probe/line)	Reverse polarity
RTD temperature probe	++	++	++	++	---
Thermocouple	++	++	---	++	(+)[a]
Current 0 to 20 mA	---	++	---	---	---

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Measuring probe	Measuring range underflow	Measuring range overflow	Short-circuit (probe/line)	Break (probe/line)	Reverse polarity
Current 4 to 20 mA	++	++	++	++	++
Voltage 0 to 10 V	---	++	---	---	++
++ = is detected		--- = is not detected		(+) = is detected in certain conditions	

[a] Dependent on the set characteristic line

Digital input

Input for potential-free contact	
Function	Contact closed: input is active (R_{ON} < 1 kΩ) Contact open: input is inactive (R_{OFF} > 100 kΩ)

Digital outputs

1 relay (changeover contact)		Order code 23
Switching capacity	Max. 10 A at DC 30 V or AC 250 V, resistive load	
Contact life	100,000 switching operations at rated load	
1 relay (normally open contact)		
Switching capacity	Max. 5 A at DC 30 V or AC 250 V, resistive load	
Contact life	100,000 switching operations at rated load	
1 relay (normally open contact)		Order code 26
Switching capacity	Max. 10 A at DC 30 V or AC 250 V, resistive load	
Contact life	100,000 switching operations at rated load	
1 digital output DC 0/14 V		
Output signal	DC 0/14 V ±15 %	
Current	Max. 20 mA (at nominal voltage 14 V)	

Interface

USB device	
Connector type	Micro-B (socket)
Standard	Low-Speed, Full-Speed
Max. cable length	5 m

Display

18-segment LCD displays		
	Upper display:	Lower display:
Digit height	13 mm	4 mm
Color	white	Green
Places, including decimal places	4	7
Decimal places	0, 1, or automatic (configurable)	

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Electrical data

Voltage supply according to the ordered version	02	AC 230 V -15/+10 %, 48 to 63 Hz		
	05	AC 115 V -15/+10 %, 48 to 63 Hz		
	30	DC 12 to 24 V, -15/+15 % SELV		
Electrical safety		acc. to DIN EN 61010, part 1 Overvoltage category II to 300 V mains voltage, Pollution degree 2		
Power consumption		Type AC 230 V:	Type AC 115 V:	Type DC 12 to 24 V:
Type 701580		Max. 3.3 W	Max. 3.6 W	Max. 1.7 W
Accuracy of timer		1 %		
Sampling rate		250 ms		
Electrical connection		On the back via spring-cage terminals (PUSH IN technology)		
Conductor cross section, mechanical				
Wire or stranded wire (without ferrule)		Min. 0.2 mm^2, max. 1.5 mm^2		
Stranded wire with ferrule		Without plastic collar: min. 0.2 mm^2, max. 1.5 mm^2 With plastic collar: min. 0.2 mm^2, max. 0.75 mm^2		
Stripping length		8 mm		
Conductor cross section, electric				
5 A load current		Min. 0.75 mm^2		
10 A load current		Min. 1.0 mm^2		
16 A load current		Min. 1.5 mm^2		

Environmental influences

Ambient temperature range	
Storage	-30 to +70 °C
Operation	-10 to +55 °C
Site altitude	Max. 2000 m above sea level
Climatic environmental influences	According to DIN EN 60721-3 with extended temperature range
Resistance to climatic conditions	≤ 90 % rel. humidity without condensation
Storage	According to class 1K2
Operation	According to class 3K3
Mechanical environmental influences	According to DIN EN 60721-3
Storage	According to class 1M2
Transport	According to class 2M2
Operation	According to class 3M3
Electromagnetic compatibility (EMC)	Product family standard DIN EN 61326-1
Interference emission	Class B[a]
Interference immunity	Industrial requirement

[a] The product is suitable for industrial use as well as for households and small businesses

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Case

Case type	Plastic case for panel mounting according to IEC 61554 (indoor use), cobalt blue RAL 5013
Case front	Membrane keyboard, upper slope cobalt blue RAL 5013, lower slope silver grey RAL 7001
Panel thickness	1 to 10 mm
Case mounting	In panel using the supplied mounting frame or both mounting elements
Operating position	Any[a]
Protection type	According to DIN EN 60529, IP65 on the front, IP20 on the back
Weight Type 701580	 Max. 154 g

[a] The maximum admissible ambient temperature only applies for the installation with the display in a vertical position.

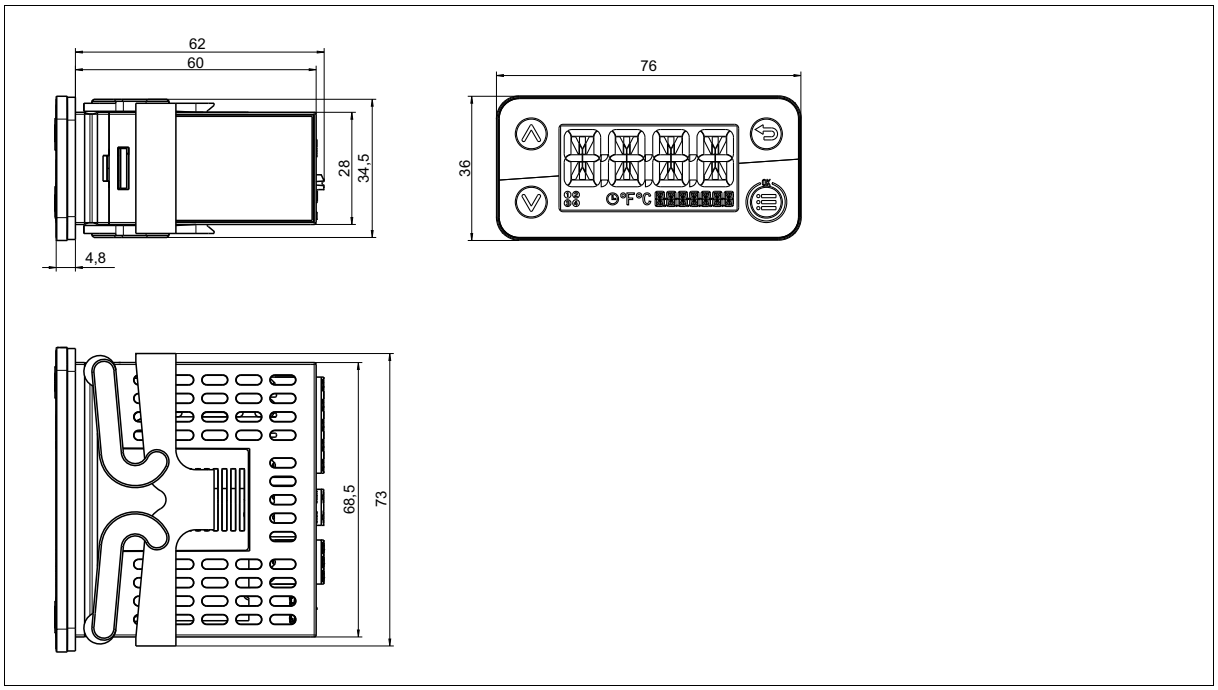
Approvals and approval marks

Approval mark	Test facility	Certificates/Certification numbers	Inspection basis	Valid for
c UL us	Underwriters Laboratories	E201387	UL 61010-1 (3rd Ed.), CAN/CSA-22.2 No. 61010-1 (3rd Ed.)	All types

The device is approved if the relevant approval mark is pictured on the device.

Dimensions

Type 701580



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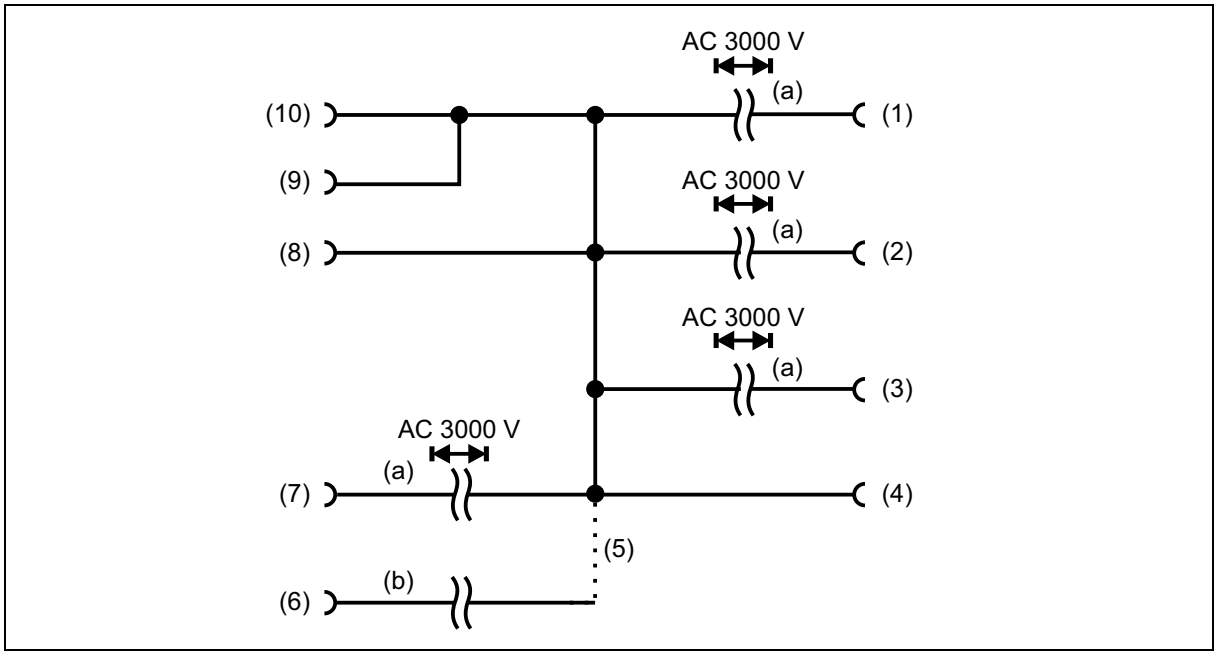
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Panel cut-outs

Panel cut-outs according to DIN IEC 61554

Type	Panel cut-out (width x height)	Mounting depth without seal	Minimum spacing of panel cut-outs (for close mounting)	
		With terminal blocks	Horizontal	Vertical
701580	69 +1 mm × 28.5 +1 mm	62 mm	15 mm	30 mm

Galvanic isolation



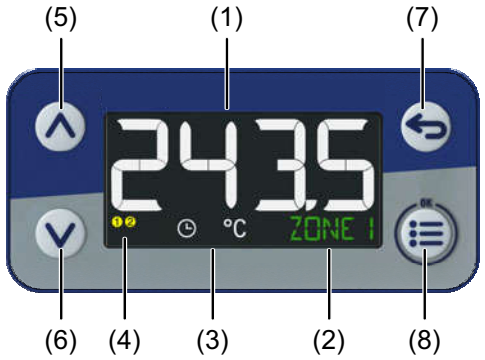
a	The voltage specifications correspond to the test voltages (alternating voltage, rms values) according to DIN EN 61010-1 (VDE 0411-1):2020-03	b	Functional galvanic isolation for connecting SELV or PELV electrical circuits
1	Type 701580 (order code 23): 2 relay outputs (changeover contact, normally open contact) The two relay outputs are not allowed to be operated on different mains voltage circuits. It is also not admissible to mix how the relay outputs are operated – using a SELV electrical circuit and a mains supply circuit.	2	Type 701580: Not available.
3	Type 701580 (order code 26): 1 relay output (normally open contact)	4	Type 701580 (order code 26): 1 digital output DC 0/14 V
5	or	6	Voltage supply DC 12 V to 24 V
7	Voltage supply 230 V, 48 to 63 Hz 115 V, 48 to 63 Hz	8	USB interface
9	Digital input	10	Analog input

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Display and control elements



1	**Display 1** - 18-segment LCD display (e.g. analog input), 4-digit, white; also for displaying menu items, parameters and text	2	**Display 2** - 18-segment LCD display (e.g. text), 7-digit green; displaying of menu items, parameters, text and values; here individually configured measuring point designation (ZONE 1)
3	Timer (illuminated = on, flashing = started), Temperature Unit	4	Switch position of the digital outputs (yellow = active)
5	Up (in the menu: increase value, select previous menu item or parameter)	6	Down (in the menu: reduce value, select next menu item or parameter)
7	Back (in menu: back to previous menu level, exit editing mode without change; in basic status: configurable function)	8	Menu/OK (call up main menu, switch to submenu/level, switch to editing mode, exit editing mode with change)

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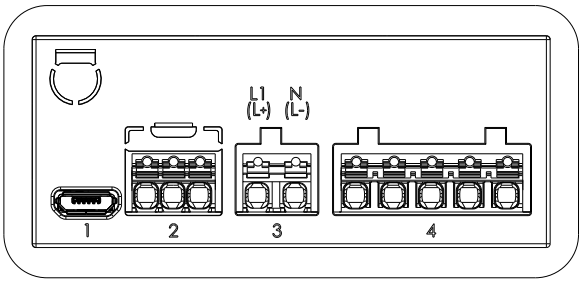
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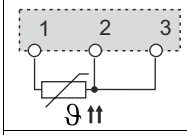
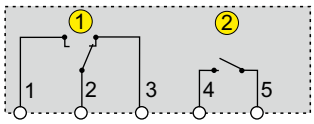
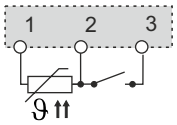
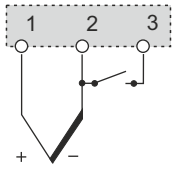
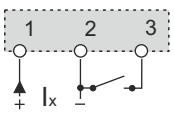
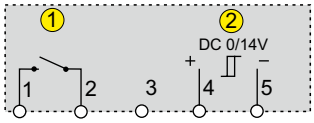
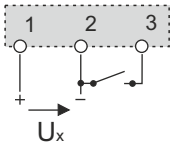
Connection diagram

The connection diagram in the data sheet provides information on product selection.

For the electrical connection, only use the installation instructions or the operating manual.

Type 701580



Terminal strip 2: Analog input, digital input	**Terminal strip 3: L1(L+), N(L-)**	**Terminal strip 4: Digital outputs**
RTD temperature probe in three-wire circuit (no digital input) 	Voltage supply (see nameplate) AC 230 V, 48 to 63 Hz or AC 115 V, 48 to 63 Hz or DC 12 to 24 V	1 relay changeover contact, 1 relay normally open contact Digital output 1 (changeover contact) and digital output 2 (normally open contact):  The two relays are not allowed to be operated on different mains voltage circuits. It is also not admissible to mix how the relays are operated – using a SELV electrical circuit and a mains supply circuit.
RTD temperature probe in two-wire circuit and Digital input 		
Thermocouple and digital input 		
Current 0(4) to 20 mA and digital input 		1 relay normally open contact, 1 digital output DC 0/14 V Digital output 1 (normally open contact) and digital output 2 (DC 0/14 V): 
Voltage 0 to 10 V and digital input 		

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Order details

	(1)	Basic type
701580		**Type 701580** with max. 2 relays, format (76 x 36 x 62) mm
	(2)	**Version**
0		Standard version
1		Customized hardware
2		Customized software
3		Customized hardware and software
	(3)	**Input (measurement input groups)**[a]
01		1 RTD temperature probe Pt100, Pt1000 in two-wire circuit, 1 digital input
02		1 RTD temperature probe Pt100, Pt1000 in three-wire circuit
04		1 thermocouple and 1 digital input
05		0(4) to 20 mA and 1 digital input
	(4)	**Output**
23		1 relay (changeover contact AC 250 V, 10 A) and 1 relay (normally open contact AC 250 V, 5 A), resistive load
26		1 relay (normally open contact AC 250 V, 10 A) resistive load and 1 digital output DC 0/14 V[b]
	(5)	**Voltage supply**
02		AC 230 V, +10/-15 %, 48 to 63 Hz
05		AC 115 V, +10/-15 %, 48 to 63 Hz[c]
30		DC 12 to 24 V +15/-15 %
	(6)	**Extra codes**
000		None

[a] It is not possible to switch from one measurement input group to another

[b] Minimum order quantity 50 pieces

[c] Minimum order quantity 50 pieces

	(1)		(2)		(3)		(4)		(5)		(6)
Order code		/		-		-		-		/	
Order example	701580	/	0	-	01	-	23	-	02	/	000

Scope of delivery

1 device in the ordered version
1 quick start guide
1 mounting frame

Accessories

Description	Part no.
Setup program	00777355
USB cable, A connector to Micro-B connector, length 3 m	00616250