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JUMO thermoCOR

Portable measuring system for AMS2750 and CQI-9

Brief description

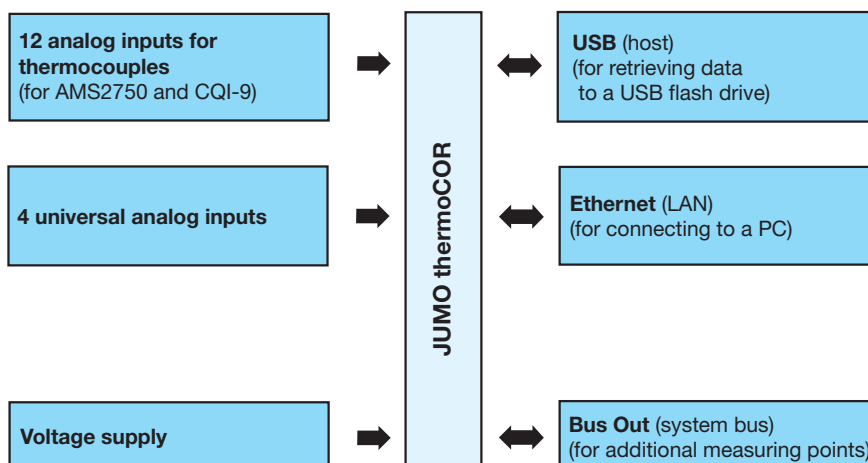
The JUMO thermoCOR is a high-precision documenting test device with 12 analog inputs for thermocouples. The use of a specifically-designed integrated cold junction allows the device to meet the accuracy requirements of AMS2750 and CQI-9. It also has four universal analog inputs for connecting additional sensors such as RTD temperature probes. The JUMO thermoCOR's main benefits are the wide range of application possibilities and ease of operation. This is achieved by a large color touchscreen. The technology, housed in a robust case, makes JUMO thermoCOR the ideal test device.

In addition, the JUMO thermoCOR communicates with the JUMO PCC/PCA3000 software, thus enabling paperless documentation of the calibration processes and integration with calibration management.



JUMO thermoCOR / Type 987050

Block diagram



Special features

- 12 thermocouple inputs (for AMS2750 and CQI-9)
- Four universal analog inputs
- Easy operation via touchscreen
- Customer-specific configuration possible
- USB host interface for data export
- Ethernet interface for connecting to a local network (direct connection to PC also possible)
- System bus connection for additional measuring points
- Tamper-proof recording using TÜV certified JUMO PCC/PCA3000 software

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Technical data

Analog inputs

Thermocouples (inputs 1 to 12 for AMS2750 and CQI-9)

Designation	Type	Standard	Measuring range	Measuring accuracy
Fe-CuNi	"J"	DIN EN 60584	-200 to +1200 °C	±0.6 K or ±0.1 % ^a , from 0 °C
NiCr-Ni	"K"	DIN EN 60584	-200 to +1372 °C	±0.6 K or ±0.1 % ^a , from 0 °C
NiCrSi-NiSi	"N"	DIN EN 60584	-100 to +1300 °C	±0.6 K or ±0.1 % ^a , from 0 °C
Pt10Rh-Pt	"S"	DIN EN 60584	-50 to +1768 °C	±0.6 K or ±0.1 % ^a , from 50 °C
Pt13Rh-Pt	"R"	DIN EN 60584	-50 to +1768 °C	±0.6 K or ±0.1 % ^a , from 100 °C
Pt30Rh-Pt6Rh	"B"	DIN EN 60584	0 to 1820 °C	±0.6 K or ±0.1 % ^a , from 500 °C

^a The percentages stated are relative to the temperature displayed. The larger of the two values applies.

Ambient temperature influence	300 ppm/K
1-year measurement uncertainty (15 to 35 °C)	±0.15 K

RTD temperature probe (inputs 13 to 16)

Designation	Standard	Measuring range	Connection type	Measuring accuracy ^a
Pt100	DIN EN 60751	-200 to +850 °C	3/4 wire	≤ 0.05 %

^a The accuracy values refer to the maximum measuring range. Smaller measuring spans reduce the linearization accuracy.

Ambient temperature influence	50 ppm/K
Sensor line resistance	Max. 30 Ω per line
Measuring current	Approx. 250 µA; not constant
Lead compensation	Not required

Standard signals (inputs 13 to 16)

Designation	Measuring range	Measuring accuracy ^a	Input resistance or burden voltage
Voltage	DC 0(2) to 10 V	≤ 0.05 %	> 500 kΩ
	DC 0 to 1 V	≤ 0.05 %	> 100 kΩ
Current	DC 0(4) to 20 mA	≤ 0.05 %	≤ 2 V

^a The accuracy values refer to the maximum measuring range. Smaller measuring ranges lead to reduced linearization accuracy.

Ambient temperature influence	100 ppm/K
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Measuring circuit monitoring

In the event of a malfunction, the digitalized outputs assume defined states.

Measuring probe	Measuring range underflow	Measuring range overflow	Short-circuit (probe/line)	Break (probe/line)
RTD temperature probe	++	++	++	++
Thermocouple	++	++	---	++
Current 0 to 20 mA	++	++	---	---
Current 4 to 20 mA	++	++	++	++
Voltage 0 to 1 V	++	++	---	---
Voltage 0 to 10 V	++	++	---	---
Voltage 2 to 10 V	++	++	++	++

++ = is detected

--- = is not detected

Interfaces

USB host	
Connection	USB (socket type A)
Usage	Exclusively for connecting a USB flash drive
max.current	100 mA
Ethernet	
Connection	LAN (RJ45 socket)
Usage	For connecting the measuring system to a local network (for data archiving on a PC using PCC/PCA3000 software); direct connection to PC also possible
Protocols	TCP/IP, DHCP
Transfer rate	10 Mbit/s, 100 Mbit/s
System bus	
Connection	Bus out (RJ45 socket)
Usage	For connecting a further measuring system (slave)
Connecting cable	Network cable (patch or crossover cable), at least CAT5 (S/FTP)
Cable length	Up to 100 m

Display

Type	Touchscreen TFT color screen
Size	21.3 cm (8.4")
Resolution	640 x 480 pixels
Number of colors	256
Frame rate	> 150 Hz
Brightness	Can be set
Screen saver (shut-down)	Configurable waiting period

Electrical data

Voltage supply	AC 100 to 240 V +10/-15 %, 48 to 63 Hz
Power consumption	39.4 W
Device fuse	Fine wire fuse 2 × 5 A / 230 V slow
Electrical safety	Acc. to EN 61010-1 Overvoltage category II, pollution degree 2
Protection rating	I

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Environmental influences

Ambient temperature range	
Storage	-20 to +60 °C
Operation	-10 to +45 °C
Resistance to climatic conditions	Relative humidity ≤ 90 % annual average without condensation (climate class 3K3 acc. to DIN EN 60721-3 with extended temperature and humidity range)
Site altitude	Max. 2000 m above sea level
Mechanical environmental influences	Classification acc. to DIN EN 60721-3-3, table 6, class 3M2
Electromagnetic compatibility (EMC)	According to DIN EN 61326-1
Interference emission	Class A – only for industrial use –
Interference immunity	Industrial requirements

Case

Case type	Case with removable lid (for indoor use)
Operating position	Any
Protection type	Acc. to DIN EN 60529, IP40
Dimensions	
Without trolley	Approx. 467 mm x 520 mm x 225 mm
With trolley (handle retracted)	Approx. 467 mm x 520 mm x 346 mm
Weight	20.5 kg

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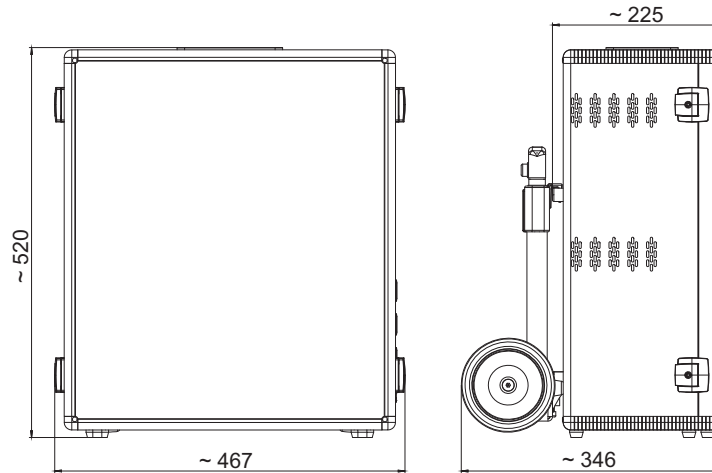
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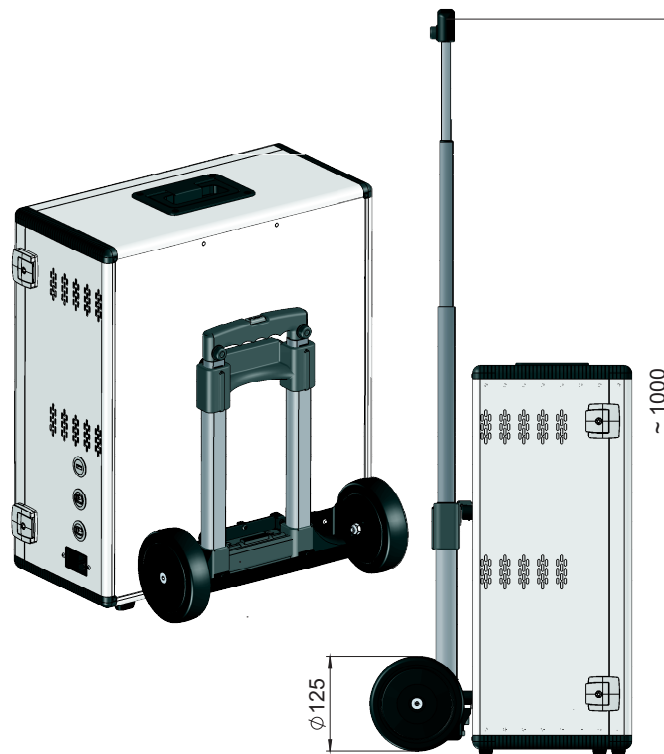


Dimensions

Case with removable trolley

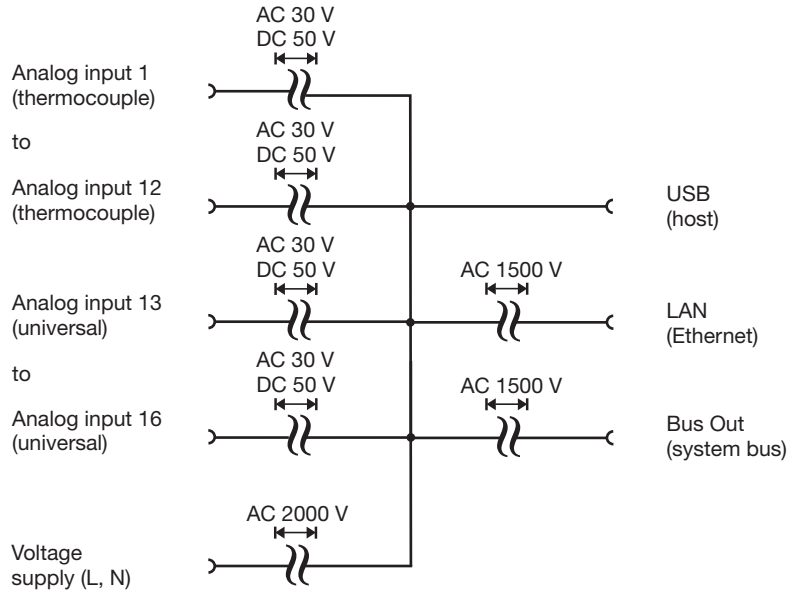


Trolley with handle extended

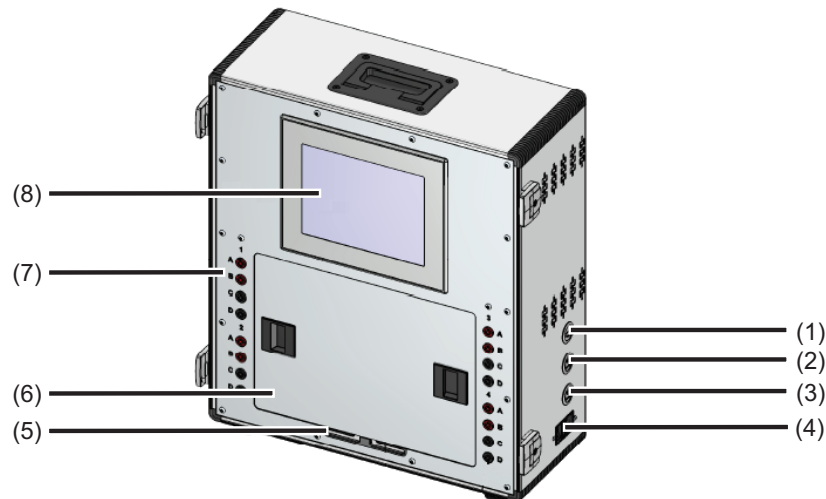




Galvanic isolation



Display, operating, and connection elements



- (1) LAN interface (Ethernet)
- (2) Bus Out (system bus)
- (3) USB host interface
- (4) Mains connector incl. switch and fuse
- (5) Cable passage for thermal cables
- (6) Connecting panel (thermocouple inputs 1 to 12)¹
- (7) Sockets for connecting further sensors (universal analog inputs 13 to 16)
- (8) Multifunction panel screen (TFT touchscreen)

¹ The cover must be closed during operation.

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Connection diagram

The connection diagram in the data sheet provides preliminary information about the connection options. For the electrical connection only use the operating manual. Knowledge of and correct technical compliance with the safety information and warnings contained in these documents are pre-conditions for the electrical connection, and startup as well as for safety during operation.

Analog inputs

Inputs 1 to 12

Only thermocouples can be connected to inputs 1 to 12.

Thermocouple	Symbol and terminal designation
Types: See technical data	

Inputs 13 to 16

RTD temperature probes (Pt100) and standard signals can be connected to inputs 13 to 16.

RTD temperature probe	Symbol and terminal designation	Standard signal	Symbol and terminal designation
Pt100, three-wire circuit		Voltage DC 0(2) to 10 V	
Pt100, four-wire circuit		Voltage DC 0 to 1 V	
		Current DC 0(4) to 20 mA	

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Order details

(1) Basic type	
987050	1 measuring system with 12 thermocouple inputs, 4 universal analog inputs, USB host interface, LAN interface, system bus interface
(2) Version	
8	Standard with default settings
9	Customer-specific configuration (specifications in plain text)
(3) National language	
1	German (default setting)
2	English (default setting)
(4) Voltage supply	
33	AC 100 to 240 V +10/-15 %, 48 to 63 Hz

Order code / -
 Order example 987050 / 8 1 - 33

Scope of delivery

1 measuring system in the ordered version
1 operating manual
1 DAkkS calibration certificate
1 mains connection cable, length 3 m
1 trolley

Accessories

Description	Part no.
PCA3000/PCC JUMO software package (for evaluation of the measuring values and for creating test reports)	00431884
USB 2.0 flash drive (2 GB) ^a	00505592
Introduction package 1 (renting possible between two weeks and three months, independent execution of all tests by the customer)	00695210
Introduction package 2 (renting for one month, one day support by a JUMO employee; plus travel expenses, overnight stay, and materials) ^b	00691237
Maintenance package for 12 months (recalibration, firmware update, functional tests, loan device for the duration of the maintenance, phone support)	00691238
Comprehensive carefree package: The tests and all related tasks up to the creation of the test reports are carried out by JUMO for the customer.	00695628

^a The USB flash drive indicated has been tested and is designed for industrial applications. No liability is assumed for other brands.

^b The package can only be ordered once per customer.