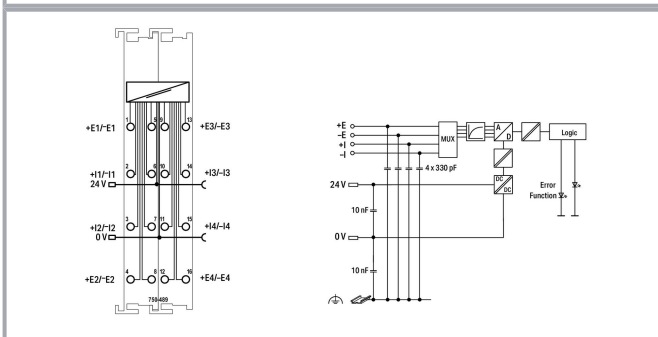
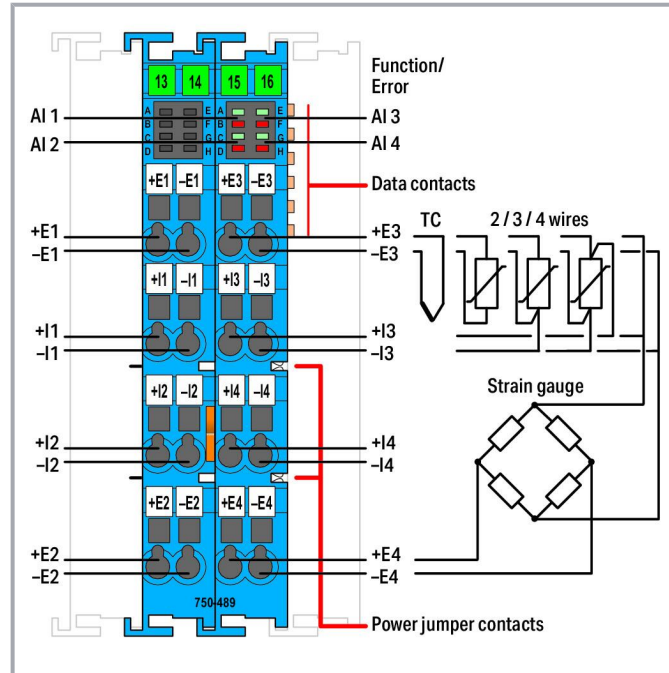


Data sheet | Item number: 750-489

4-channel analog input; RTD/TC/Strain Gauge; 16 bits; Diagnostics;
Intrinsically safe

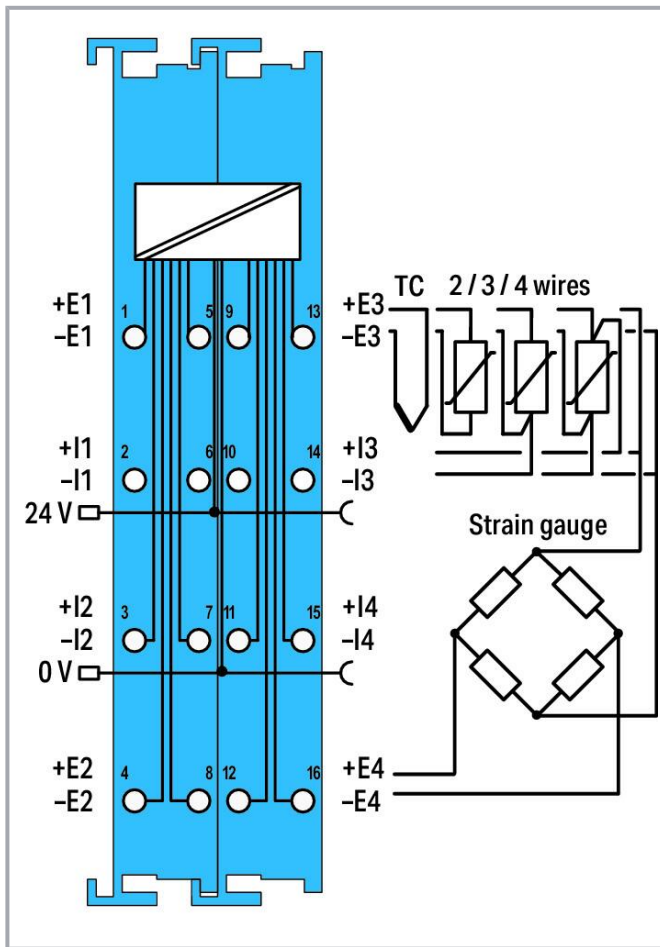
www.wago.com/750-489



Subject to changes. Please also observe the further product documentation!

WAGO GmbH & Co. KG
Hansastr. 27
32423 Minden
Phone: +49571 887-0 | Fax: +49571 887-169
Email: info.de@wago.com | Web: www.wago.com

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Item description

This analog input module directly connects resistance thermometers, thermocouples, millivolt sensors, resistors, resistor bridges (strain gauges), potentiometers and PTC thermistors operating in the hazardous environments of Zones 0 and 1. Cold junction compensation for the respective channel is incorporated into the module.

The WAGO I/O System 750 must be installed either in Zone 2 or in a non-hazardous area.

The 24 V supply is derived from the module's power jumper contacts.

The shield directly connects to the DIN-rail.

The parameters are set via the GSD file, *e!COCKPIT* or *WAGO-I/O-CHECK*.

Indicators:

- Green LED (availability ON/OFF)
- Red LED (underflow, overflow, measurement range overflow/underflow)

Field and system levels are electrically isolated.

A functional galvanic isolation is provided between the channels.

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Data

Notes

Note

The analog input module must only be operated via 24 VDC Ex i!

General information (e.g., installation regulations) on explosion protection is available in the WAGO I/O System 750 manuals!

Technical data

Number of analog inputs	4
Total number of channels (module)	4
Signal type	Potentiometer positions Thermocouple Resistive temperature device Resistors mV encoder
Signal type (configurable)	yes
Sensor connection	4 x (2-wire); RTD/R: 3-wire; 4-wire
Data width	4 x 16-bit data; 4 x 8-bit control/status (optional)
Resolution (over entire range)	0.1 K of full scale value; 0.01 K of full scale value (restricted to -50 °C ... +150 °C)
Conversion time	≥10 ms/2 wires (per channel)*; ≥20 ms/3 wires, 4 wires (per channel)*; *for RTD/R; TC/U conversion time depends on module setting
Measurement error (25 °C)	In delivery state: ±0.2 % of the upper-range value (value achieved during calibration in operating environment $0 \leq T_A \leq 55 \text{ °C}$); After user calibration: ±0.05 % of the upper-range value (only valid in the thermally stable operating state)
Temperature coefficient	±0.001 %/K of the upper-range value
Intrinsic safety Ex i	yes
Measurement range	Resistive temperature devices: Pt100, Pt200, Pt500, Pt1000, Ni100, Ni120, Ni200, Ni500, Ni1000, Ni1000-TK5000; Resistors: 250 Ω, 500 Ω, 1 kΩ, 2 kΩ, 4 kΩ, PTC; Potentiometer setting: 0 ... 100 %; Thermocouples: Type B (+250 ... +1,820 °C); Type C (0 ... +2,315 °C); Type E (-200 ... +1,000 °C); Type J (-210 ... +1,200 °C); Type K (-200 ... +1,372 °C); Type N (-200 ... +1,300 °C); Type R, S (-50 ... +1,768 °C); Type T (-200 ... +400 °C); mV sensors: ±30 mV; ±60 mV; ±120 mV; ±250 mV; ±500 mV; ±1,000 mV; ±2,000 mV; Thermistor: PTC; Resistor bridges (strain gauges): U_{ref} : 2.4 V; U_d : ±15 mV, ±30 mV, ±60 mV

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Cold junction compensation	integrated
Configuration options	WAGO-I/O-CHECK CODESYS Library <i>e!COCKPIT</i>
Supply voltage (system)	5 VDC; via data contacts
Current consumption (5 V system supply)	60 mA
Supply voltage (field)	24 VDC; (Ex i power supply: $U_O = \max. 27.3 \text{ V}$); via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption, field supply (module with no external load)	120 mA
Power loss P_1	1.6 W
Isolation	Per EN/IEC 60079-11: 300 VAC system/supply; per EN/UL 61010-2-201: 1200 VDC system/supply/channel
Indicators	LED (A, C, E, G) green: Function AI 1 ... AI 4; LED (B, D, F, H) red: Error AI 1 ... AI 4
Number of incoming power jumper contacts	2
Number of outgoing power jumper contacts	2
Marking	ATEX/IECEx: II 3 (1) G Ex ec [ia Ga] IIC T4 Gc; II (1) D [Ex ia Da] IIIC; I (M1) [Ex ia Ma] I

Explosion protection

Ex standard	EN IEC 60079-0, -7, -11
Safety-relevant data (circuit)	$U_O = 4 \text{ V}$; $I_O = 13.46 \text{ mA}$; $P_O = 13.46 \text{ mW}$; linear characteristic curve
Reactances Ex ia IIC	$L_O = 0.19 \text{ H}$; $C_O = 100 \mu\text{F}$
Reactances Ex ia IIB	$L_O = 0.78 \text{ H}$; $C_O = 1000 \mu\text{F}$
Reactances Ex ia IIA	$L_O = 1.57 \text{ H}$; $C_O = 1000 \mu\text{F}$
Reactances Ex ia I	$L_O = 2.57 \text{ H}$; $C_O = 1000 \mu\text{F}$
Reactances (note)	Reactances, if the internal inductance L_i or capacitance C_i (without cable) of the connected device is $\leq 1 \%$ of the specified values.

Connection data

Connection technology: inputs/outputs	16 x CAGE CLAMP®
Connection type 1	Inputs/Outputs
Solid conductor	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 inches

Subject to changes. Please also observe the further product documentation!



Physical data

Width	24 mm / 0.945 inches
Height	100 mm / 3.937 inches
Depth	67.8 mm / 2.669 inches
Depth from upper-edge of DIN-rail	60.6 mm / 2.386 inches

Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

Material Data

Housing material	Polycarbonate; polyamide 6.6
Fire load	2.036 MJ
Weight	99.3 g
Conformity marking	CE

Environmental requirements

Ambient temperature (operation)	0 ... +55 °C
Ambient temperature (storage)	-25 ... +85 °C
Protection type	IP20
Pollution degree	2 per IEC 61131-2
Operating altitude	0 ... 2000 m / 0 ... 6562 ft
Mounting position	horizontal (standing/lying); vertical
Relative humidity (without condensation)	95 %
Vibration resistance	4g per IEC 60068-2-6
Shock resistance	15g per IEC 60068-2-27
EMC immunity to interference	per EN 61000-6-2, marine applications
EMC emission of interference	per EN 61000-6-3, marine applications
Exposure to pollutants	Per IEC 60068-2-42 and IEC 60068-2-43

Commercial data

ETIM 8.0	EC001596
ETIM 7.0	EC001596
PU (SPU)	1 pcs
Packaging type	box
Country of origin	DE

Subject to changes. Please also observe the further product documentation!







GTIN	4055143948029
Customs tariff number	85389099990

Environmental Product Compliance

RoHS Compliance Status	Compliant, No Exemption
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Approvals / Certificates

General approvals

Logo	Approval	Additional Approval Text	Certificate name
	CCC CNEX	CNCA-C23-01	2020312310000211 (Ex ec[iaGa] IIC T4 Gc, [Ex iaDa] IIC, [Ex iaMa] I)
	EAC Brjansker Zertifizierungsstelle	TP TC 020/2011	EAC RU C-DE.AM02. B.00087/19
	EAC Brjansker Zertifizierungsstelle	TP TC 012/2011	EAC RU C-DE.AD07. B.03957-21 (2Exe [iaGa] IIC T4 GCX, [Ex iaDa] IIC X, [ExiaMa] IX)
	KC National Radio Research Agency	Article 58-2, Clause 3	MSIP-REM-W43- AIM750
	UL Underwriters Laboratories Inc. (ORDINARY LOCATIONS)	UL 61010-2-201	E175199
	UL Underwriters Laboratories Inc. (ORDINARY LOCATIONS)	-	E175199

Declarations of conformity and manufacturer's declarations

Logo	Approval	Additional Approval Text	Certificate name
	EU-Ex-Declaration of Conformity WAGO GmbH & Co. KG	-	-

Approvals for marine applications

Logo	Approval	Additional Approval Text	Certificate name
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Subject to changes. Please also observe the further product documentation!



DNV
DNV GL SE

DNV-CG-0339, Aug. 2021

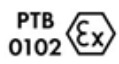





TAA0000194



KR
Korean Register of Shipping

KR
HMB05880-
AC001

Approvals for hazardous areas

Logo	Approval	Additional Approval Text	Certificate name
	ATEX TUEV Nord Cert GmbH	EN 60079-0	TUEV_12_ATEX_106032X (Ex ec[iaGa] IIC T4 Gc, [Ex iaDa] IIIC, [Ex iaMa] I)
	CCC CNEX	CNCA-C23-01	2020312310000211 (Ex ec[iaGa] IIC T4 Gc, [Ex iaDa] IIIC, [Ex iaMa] I)
	INMETRO TÜV Rheinland do Brasil Ltda.	-	TÜV_14.1911_X
	KTL Korea Testing Laboratory	KOSHA Article 34, IEC60079-0	21-KA4BO-0605X
	TUEV Nord TUEV Nord Cert GmbH	IEC 60079	IECEX TUN 12.0039X (Ex ec[iaGa] IIC T4 Gc, [Ex iaDa] IIIC, [Ex iaMa] I)
	UL Underwriters Laboratories Inc. (HAZARDOUS LOCATIONS)	UL 121201	E198726 Sec.1

Optional accessories

Carrier rail

Mounting accessories



Item no.: 210-197

Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; slotted; similar to EN 60715; silver-colored

www.wago.com/210-197

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Hansastr. 27

32423 Minden

Phone: +49571 887-0 | Fax: +49571 887-169



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	Item no.: 210-198 Copper carrier rail; 35 x 15 mm; 2.3 mm thick; 2 m long; unslotted; according to EN 60715; copper-colored	www.wago.com/210-198
	Item no.: 210-504 Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; slotted; galvanized; according to EN 60715; silver-colored	www.wago.com/210-504
	Item no.: 210-505 Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; unslotted; galvanized; according to EN 60715; silver-colored	www.wago.com/210-505
	Item no.: 210-506 Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; unslotted; galvanized; similar to EN 60715; silver-colored	www.wago.com/210-506
	Item no.: 210-508 Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; slotted; galvanized; similar to EN 60715; silver-colored	www.wago.com/210-508
	Item no.: 210-113 Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; unslotted; according to EN 60715; silver-colored	www.wago.com/210-113
	Item no.: 210-118 Steel carrier rail; 35 x 15 mm; 2.3 mm thick; 2 m long; unslotted; according to EN 60715; silver-colored	www.wago.com/210-118
	Item no.: 210-112 Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; slotted; according to EN 60715; "Hole width 25 mm; silver-colored	www.wago.com/210-112
	Item no.: 210-114 Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; unslotted; similar to EN 60715; silver-colored	www.wago.com/210-114
	Item no.: 210-115 Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; slotted; according to EN 60715; "Hole width 18 mm; silver-colored	www.wago.com/210-115
	Item no.: 210-196 Aluminum carrier rail; 35 x 8.2 mm; 1.6 mm thick; 2 m long; unslotted; similar to EN 60715; silver-colored	www.wago.com/210-196

Supply module










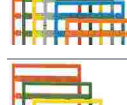
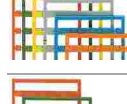
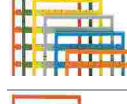
Supply module		
	Item no.: 750-625/000-001 Power Supply; 24 VDC; Intrinsically safe	www.wago.com/750-625/000-001
	Item no.: 750-606 Power Supply; 24 VDC; Diagnostics; Intrinsically safe	www.wago.com/750-606

Marking accessories

Marker carrier		
	Item no.: 750-103 Group marker carrier	www.wago.com/750-103

Subject to changes. Please also observe the further product documentation!

Marker

	Item no.: 2009-145/000-006 Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; blue	www.wago.com/2009-145/000-006
	Item no.: 2009-145 Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; white	www.wago.com/2009-145
	Item no.: 2009-145/000-002 Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; yellow	www.wago.com/2009-145/000-002
	Item no.: 2009-145/000-007 Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; gray	www.wago.com/2009-145/000-007
	Item no.: 2009-145/000-005 Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; red	www.wago.com/2009-145/000-005
	Item no.: 2009-145/000-012 Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; orange	www.wago.com/2009-145/000-012
	Item no.: 2009-145/000-023 Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; green	www.wago.com/2009-145/000-023
	Item no.: 2009-145/000-024 Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; violet	www.wago.com/2009-145/000-024
	Item no.: 248-501/000-006 Mini-WSB marking card; as card; not stretchable; plain; snap-on type; blue	www.wago.com/248-501/000-006
	Item no.: 248-501/000-007 Mini-WSB marking card; as card; not stretchable; plain; snap-on type; gray	www.wago.com/248-501/000-007
	Item no.: 248-501/000-002 Mini-WSB marking card; as card; not stretchable; plain; snap-on type; yellow	www.wago.com/248-501/000-002
	Item no.: 248-501/000-012 Mini-WSB marking card; as card; not stretchable; plain; snap-on type; orange	www.wago.com/248-501/000-012

Subject to changes. Please also observe the further product documentation!



Item no.: 248-501
Mini-WSB marking card; as card; not stretchable; plain; snap-on type; white

www.wago.com/248-501



Item no.: 248-501/000-017
Mini-WSB marking card; as card; not stretchable; plain; snap-on type; light green

www.wago.com/248-501/000-017



Item no.: 248-501/000-005
Mini-WSB marking card; as card; not stretchable; plain; snap-on type; red

www.wago.com/248-501/000-005



Item no.: 248-501/000-024
Mini-WSB marking card; as card; not stretchable; plain; snap-on type; violet

www.wago.com/248-501/000-024



Item no.: 248-501/000-023
Mini-WSB marking card; as card; not stretchable; plain; snap-on type; green

www.wago.com/248-501/000-023

Group marker carrier



Item no.: 750-107
Group marker carrier

www.wago.com/750-107

Shield termination

Shield clamping saddles



Item no.: 790-116
Shield clamping saddle; 19 mm wide; diameter of compatible conductor; 7 ... 16 mm

www.wago.com/790-116



Item no.: 790-124
Shield clamping saddle; 27 mm wide; diameter of compatible conductor; 6 ... 24 mm

www.wago.com/790-124



Item no.: 790-108
Shield clamping saddle; 11 mm wide; diameter of compatible conductor; 3 ... 8 mm

www.wago.com/790-108



Item no.: 790-140
Shield clamping saddle; diameter of compatible conductor

www.wago.com/790-140



Item no.: 790-216
Shield clamping saddle; 21.8 mm wide; 6 ... 16 mm

www.wago.com/790-216



Item no.: 790-220
Shield clamping saddle; 30 mm wide; 6 ... 20 mm

www.wago.com/790-220



Item no.: 790-208
Shield clamping saddle; 12.4 mm wide; 3 ... 8 mm

www.wago.com/790-208

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Downloads

Documentation

Data sheet

750-489, 4AI RTD/TC/Strain Gauge Ex i		pdf 206.8 kB	Download
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Manual

System Manual WAGO I/O System 750/753 Decentralized Automation Technology	V 3.3.0 2023 May 4	pdf 8.8 MB	Download
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Product Manual 4AI RTD/TC/Strain Gauge Ex i 4-Channel Analog Input; RTD/TC/Strain Gauge; Intrinsically safe	V 1.2.0 2021 Sep 13	pdf 6.6 MB	Download
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Bid Text

750-489 doc - Datei		docx 17.6 kB	Download
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750-489 X81 - Datei		xml 9.2 kB	Download
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Instruction Leaflet

CCC Ex (Additional information) WAGO-I/O-SYSTEM 750-*** Ex i	2023 Apr 26	pdf 147.4 kB	Download
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System Description

Overview on WAGO-I/O-SYSTEM 750 approvals		pdf 789.0 kB	Download
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Ex i Overview		pdf 452.7 kB	Download
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750/753 Series I/O-System – General Product Information		pdf 1.7 MB	Download
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Additional Information

Disposal and Recycling Electrical and electronic equipment, Batteries, Packaging	V 1.1.0 2022 Aug 18	pdf 2.2 MB	Download
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CAD/CAE-Data

CAD data

2D/3D Models 750-489	URL	Download
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CAE data

ZUKEN Portal 750-489	URL	Download
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EPLAN Data Portal 750-489	URL	Download
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Installation Notes

Product family

WAGO I/O System 750/753

[Show all products from the family](#)

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