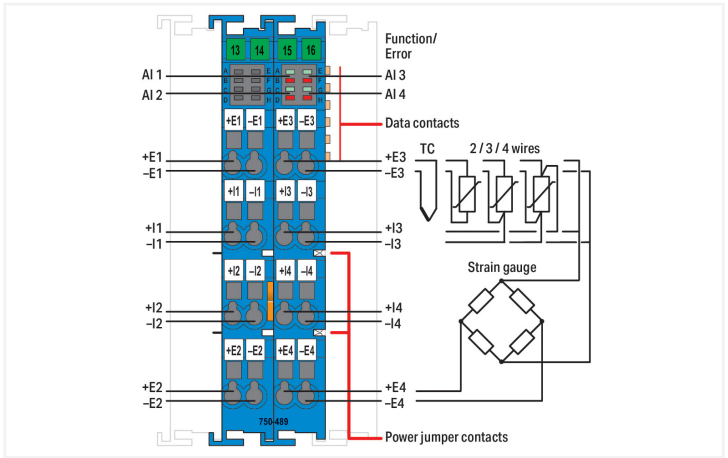
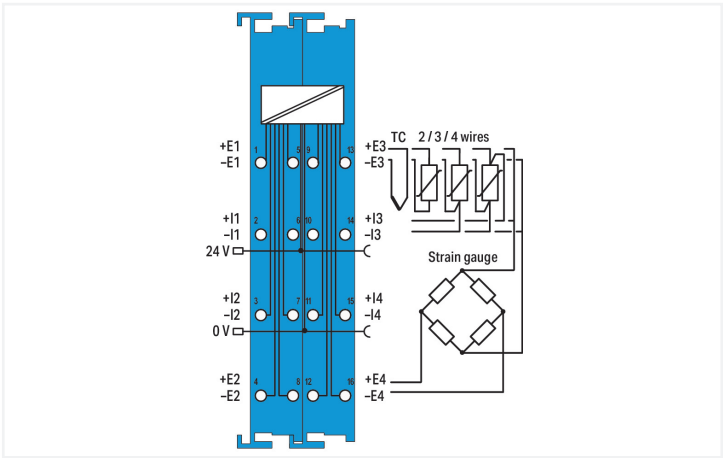
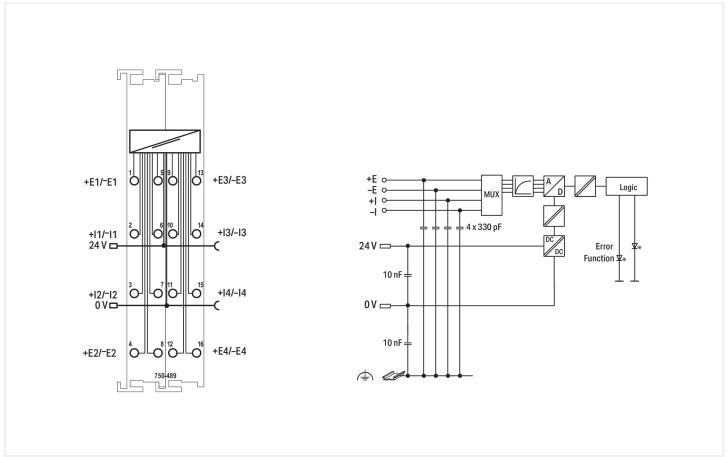




This analog input module directly connects resistance thermometers, thermocouples, millivolt sensors, resistors, resistor bridges (strain gauges), potentiometers and PTC thermistors operating in the hazardous environments of Zones 0 and 1. Cold junction compensation for the respective channel is incorporated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

Notes	
Note	The analog input module must only be operated via 24 VDC Ex ii! General information (e.g., installation regulations) on explosion protection is available in the WAGO I/O System 750 manuals!



Technical data	
Order Text	4-Channel Analog Input; RTD/TC
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
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
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 ≤ TA ≤ 55 °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
Cold junction compensation	integrated
Intrinsic safety Ex i	Yes
Data width	4 x 16-bit data; 4 x 8-bit control/status (optional)
Configuration options	WAGO-I/O-CHECK CODESYS Library e! COCKPIT
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 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 _I	1.6 W
Isolation	Per EN/IEC 60079-11: 300 VAC system/supply; per EN/UL 61010-2-201: 1200 VDC system/supply/channel
Number of incoming power jumper contacts	2
Number of outgoing power jumper contacts	2
Indicators	LED (A, C, E, G) green: Function AI 1 ... AI 4; LED (B, D, F, H) red: Error AI 1 ... AI 4

Explosion protection	
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
Ex standard	EN IEC 60079-0, -7, -11
Safety-relevant data (circuit)	U _o = 4 V; I _o = 13.46 mA; P _o = 13.46 mW; linear characteristic curve
Reactances Ex ia IIC	L _o = 0.19 H; C _o = 100 µF
Reactances Ex ia IIB	L _o = 0.78 H; C _o = 1000 µF
Reactances Ex ia IIA	L _o = 1.57 H; C _o = 1000 µF
Reactances Ex ia I	L _o = 2.57 H; C _o = 1000 µF
Reactances (note)	Reactances, if the internal inductance L _i or capacitance C _i (without cable) of the connected device is ≤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 mm² / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm² / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 inches

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
Customs tariff number	8538909990



Environmental Product Compliance	
CAS-No.	1303-86-2 1317-36-8 7439-92-1
REACH Candidate List Substance	Diboron trioxide Lead Lead monoxide
RoHS Compliance Status	Compliant,With Exemption
RoHS Exemption	6(c) 7(a) 7(c)-I 7(c)-II
SCIP notification number (Austria)	2e967755-29fa-4c20-883b-b9085830cedb
SCIP notification number (Belgium)	2b743fd2-d462-4b6d-b4a1-7992ed6bca5f
SCIP notification number (Bulgaria)	cd3136c4-5842-493a-a6c7-aaccbae35441
SCIP notification number (Czech Republic)	06e947da-9a5e-4f16-86d6-d6c3a2a72497
SCIP notification number (Denmark)	7f96b952-ca60-43e7-b2df-fb463a8cb615
SCIP notification number (Finland)	2d55b01b-e34c-4619-a37c-47e3d79f3158
SCIP notification number (France)	a325a1e0-ba65-4396-a8ab-1b4499385f8f
SCIP notification number (Germany)	85e3688e-39a6-447b-aa87-ad08b282a833
SCIP notification number (Hungary)	5df6d0ea-10d7-4caf-85f2-5569529bf243
SCIP notification number (Italy)	2616f35b-5661-4756-8961-a4f345a9e642
SCIP notification number (Netherlands)	f4f4df14-9da6-4e9c-b012-e425bf3a5b61
SCIP notification number (Poland)	97af6679-bfe0-4362-bcc4-b2ff7c57ccfb
SCIP notification number (Romania)	5d2755b8-7838-4e0c-9775-0a99aa0c54a9
SCIP notification number (Sweden)	f00e1d03-d337-4ba2-94ea-69972672f649

Approvals / Certificates		
General approvals		Declarations of conformity and manufacturer's declarations
   		
Approval	Standard	Certificate Name
EAC Brjansker Zertifizierungs- stelle	TP TC 020/2011	EAC RU C-DE.AM02. B.00087/19
EAC Brjansker Zertifizierungs- stelle	TP TC 012/2011	EAC RU C-DE.AD07. B.03957-21 (2Exe[iaGa] IICT4 GCX, [Ex iaDa]IIIC X, [ExiaMa]IX)
KC National Radio Research Agency	Article 58-2, Clause 3	MSIP-REM-W43-AIM750
UL Underwriters Laboratories Inc. (ORDINARY LOCATI- ONS)	-	E175199

Approvals for marine applications		
 		
Approval	Standard	Certificate Name
DNV DNV GL SE	DNV-CG-0339,Aug.2021	TAA0000194
KR Korean Register of Ship- ping	-	KR HMB05880-AC001

Approvals for hazardous areas		
   		
Approval	Standard	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 ia- Da] IIIC, [Ex iaMa] I)



Approvals for hazardous areas		
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 ia- Da] IIIC, [Ex iaMa] I)
UL Underwriters Laboratories Inc. (HAZARDOUS LOCA- TIONS)	UL 121201	E198726 Sec.1

Downloads

Environmental Product Compliance

Compliance Search	
Environmental Product Compliance 750-489	↓

Documentation

Manual			
Product Manual 4AI RTD/TC/Strain Gauge Ex i	V 1.2.0 13.09.2021	pdf 6462.26 KB	↓
System Manual WAGO I/O System 750/753	V 3.3.3 29.08.2023	pdf 8512.61 KB	↓

System Description		
750/753 Series I/O- System – General Pro- duct Information	pdf 953.35 KB	↓
Overview on WAGO-I/ O-SYSTEM 750 appro- vals	pdf 770.48 KB	↓
Ex i Overview	pdf 442.07 KB	↓

Bid Text		
750-489	xml 8.95 KB	↓
750-489	docx 17.19 KB	↓

Instruction Leaflet			
CCC Ex (Additional in- formation)	26.04.2023	pdf 143.96 KB	↓

CAD/CAE-Data

CAD data	
2D/3D Models 750-489	↓

CAE data	
EPLAN Data Portal 750-489	↓
ZUKEN Portal 750-489	↓



Runtime Software

Firmware			
0750-0489, 4-Kanal-Analogeingang; Widerstandssensoren/Thermoelemente/Widerstandsbrücken	V 04 07.06.2022	zip 186.58 KB	

1 Compatible Products

1.1 Optional Accessories

1.1.1 DIN-rail

1.1.1.1 Mounting accessories

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	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	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	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
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	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	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	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
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	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	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	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

1.1.2 Marking

1.1.2.1 Group marker carrier

Item No.: 750-107 Group marker carrier

1.1.2.2 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	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	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	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
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	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	Item No.: 2009-145 Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; white	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
Item No.: 248-501/000-006 Mini-WSB marking card; as card; not stretchable; plain; snap-on type; blue	Item No.: 248-501/000-007 Mini-WSB marking card; as card; not stretchable; plain; snap-on type; gray	Item No.: 248-501/000-023 Mini-WSB marking card; as card; not stretchable; plain; snap-on type; green	Item No.: 248-501/000-017 Mini-WSB marking card; as card; not stretchable; plain; snap-on type; light green

1.1.2.2 Marker



Item No.: 248-501/000-012
Mini-WSB marking card; as card; not stretchable; plain; snap-on type; orange



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



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



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



Item No.: 248-501/000-002
Mini-WSB marking card; as card; not stretchable; plain; snap-on type; yellow

1.1.2.3 Marker carrier



Item No.: 750-103
Group marker carrier

1.1.3 Shield termination

1.1.3.1 Shield clamping saddles



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



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



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



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



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



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



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

1.1.4 Supply module

1.1.4.1 Supply module



Item No.: 750-606
Power Supply; 24 VDC; Diagnostics; Intrinsically safe



Item No.: 750-625/000-001
Power Supply; 24 VDC; Intrinsically safe