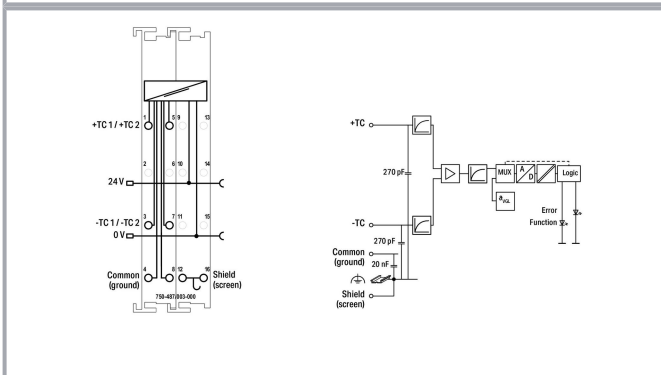
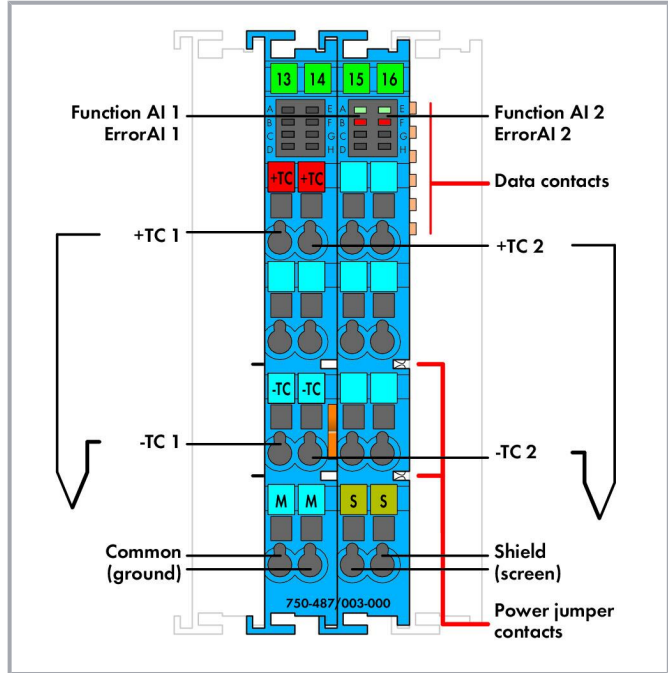


2-channel analog input; Thermocouple; Intrinsically safe

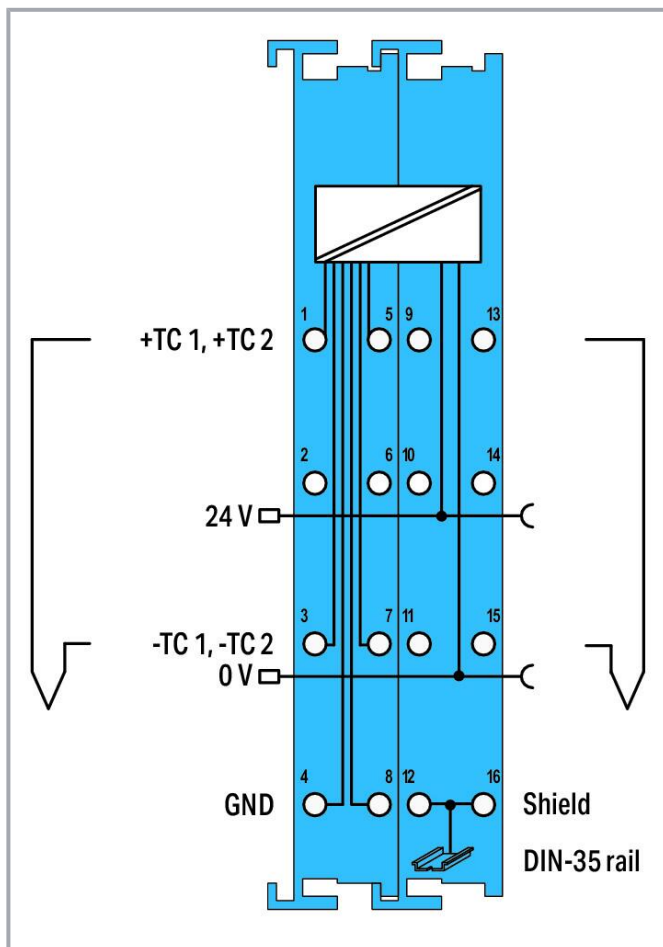
www.wago.com/750-487/003-000



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

WAGO GmbH & Co. KG
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 32423 Minden
 Phone: +49571 887-0 | Fax: +49571 887-169
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This item has been discontinued and is no longer available as of 31.12.2021.

Item description

This analog input module directly connects two thermocouples operating in hazardous environments of Zones 0 and 1.

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

Internal electrical isolation allows operation of grounded sensors. The module automatically linearizes the entire temperature range. Cold junction compensation mitigates the clamping unit offset voltage over the 0–55°C operating range.

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

Field and system levels are electrically isolated.

The module's operating mode is parameterized via the WAGO-I/O-CHECK software.

Indicators:

—

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

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	2
Total number of channels (module)	2
Signal type	Thermocouple Low voltages
Signal type (configurable)	yes
Sensor connection	2 x (2-wire)
Power consumption P_{max}	0.3 W (max.)
Data width	2 x 16-bit data; 2 x 8-bit control/status (optional)
Internal resistance	1000 k Ω
Resolution (over entire range)	0.1 °C or 0.01 mV for voltage measurement
Conversion time (typ.)	320 ms
Conversion time	≤ 320 ms (both channels)
Measurement error (25 °C)	< ±6 K (voltage input < ±2 K; cold junction compensation < ±4 K)
Temperature coefficient	< ± 0.2 K / K of the largest output area (type K)
Intrinsic safety Ex i	yes
Sensor types	Thermocouple K; Configurable: J, B, E, L, N, R, S, T, U, C; Voltage sensor: ±30 mV, ±60 mV, ±120 mV
Temperature range	Type-dependent from -100 to +1,800 °C
Measurement range	Thermocouples: Type B: +600 ... +1,800 °C; Type E: -100 ... +1,000 °C; Type J: -100 ... +1,200 °C; Type K: -100 ... +1,370 °C* *(default setting); Type L: -100 ... +900 °C; Type N: -100 ... +1,300 °C; Type R: 0 ... +1,700 °C; Type S: -50 ... +1,700 °C; Type T: -100 ... +400 °C; Type U: -25 ... +600 °C; Voltage sensors: MB1: ±30 mV; MB2: ±60 mV; MB3: ±120 mV
Cold junction compensation	internal; at each pair of terminal blocks
Configuration options	WAGO-I/O-CHECK

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CODESYS Library <i>e!COCKPIT</i>	
Supply voltage (system)	5 VDC; via data contacts
Current consumption (5 V system supply)	13.5 mA
Supply voltage (field)	24 VDC; (Ex i power supply: $U_o = \text{max. } 27.3 \text{ V}$); via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption, field supply (module with no external load)	8.5 mA
Power loss P_l	0.3 W (max.)
Isolation	300 VAC system/field
Indicators	LED (A, E) green: Function AI 1, AI 2; LED (B, F) red: Error AI 1, AI 2
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)	$U_o = 14.4 \text{ V}$; $I_o = 29.1 \text{ mA}$; $P_o = 52.4 \text{ mW}$; Linear characteristic curve
Reactances Ex ia IIC	$L_o = 52 \text{ mH}$; $C_o = 650 \text{ nF}$
Reactances Ex ia IIB	$L_o = 100 \text{ mH}$; $C_o = 4.0 \mu\text{F}$
Reactances Ex ia IIA	$L_o = 300 \text{ mH}$; $C_o = 15.8 \mu\text{F}$
Reactances Ex ia I	$L_o = 400 \text{ mH}$; $C_o = 17.9 \mu\text{F}$
Reactances (note)	Reactances without accounting for the concurrence of capacitance (C_o) and inductance (L_o)

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

Physical data

Width	24 mm / 0.945 inches
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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	2.063 MJ
Weight	90.5 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
Permissible H ₂ S contaminant concentration at a relative humidity 75 %	10 ppm
Permissible SO ₂ contaminant concentration at a relative humidity 75 %	25 ppm

Commercial data

Product Group	15 (I/O System)
eCl@ss 10.0	27-24-26-01
eCl@ss 9.0	27-24-26-01
ETIM 8.0	EC001596

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ETIM 7.0	EC001596
PU (SPU)	1 pcs
Packaging type	box
Country of origin	DE
GTIN	4045454961893
Customs tariff number	85389099990
End of Sale	2021-12-31
End of Production	2022-02-01
End of Delivery	2022-03-01
End of Service and Repair	2023-12-31

Environmental Product Compliance

CAS-No.	11120-22-2 1303-86-2 1317-36-8 7439-92-1
REACH Candidate List Substance	Diboron trioxide Lead Lead monoxide Lead silicate
RoHS Exemption	6(c) 7(a) 7(c)-I 7(c)-II
SCIP notification number (Bulgaria)	653f4453-099b-424a-bfa1-1c96483e7cec
SCIP notification number (Czech Republic)	e7505689-c728-4ae4-9d13-7f86edb9e571

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] IIIC, [Ex iaMa] I)
	EAC Brjansker Zertifizierungsstelle	TP TC 020/2011	EAC RU C-DE.AM02. B.00087/19
	KC National Radio Research Agency	Article 58-2, Clause 3	MSIP-REM-W43- AIM750
	UL	UL 508	E175199 Sec.1

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









Underwriters Laboratories Inc. (ORDINARY LOCATIONS)

Declarations of conformity and manufacturer's declarations

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

Approvals for marine applications

Logo	Approval	Additional Approval Text	Certificate name
	ABS American Bureau of Shipping	-	22-2219060
	BV Bureau Veritas S.A.	-	30389/B1 BV
	DNV DNV GL SE	DNV-CG-0339, Aug. 2021	TAA0000194
	LR Lloyds Register EMEA	-	LR22180952TA
	PRS Polski Rejestr Statków	-	TE/2236/880590 /19
	RINA RINA Germany GmbH	-	ELE343521XG001

Approvals for hazardous areas

Logo	Approval	Additional Approval Text	Certificate name
	AEx UL International Germany GmbH	UL 60079	E480271

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AEx



	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
	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

Supply module








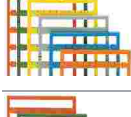
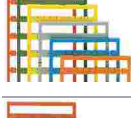
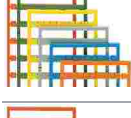


Supply module		
	Item no.: 750-625/000-001 Power Supply; 24 VDC; Intrinsically safe	www.wago.com/750-625/000-001
	Item no.: 750-606 Power Supply; 24 VDC; Diagnostics; Intrinsically safe	www.wago.com/750-606

Marking accessories

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

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



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

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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

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

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

	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

Downloads

Documentation

Data sheet

750-487/003-000, 2AI TC Ex i, data sheet	pdf	Download
	250.1 kB	

Manual

System Manual WAGO I/O System 750/753	V 3.3.0	pdf	Download
Decentralized Automation Technology	2023 May 4	8.8 MB	

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Product Manual 2-channel, Ex i thermocouples 2-channel analog input module for thermocouples Ex i	V 1.2.0	pdf 2.8 MB	Download
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Bid Text

750-487/003-000 X81 - Datei	2019 Feb 19	xml 7.4 kB	Download
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750-487/003-000 doc - Datei	2017 Oct 6	doc 34.8 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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Application Notes

Application Note CoDeSys 2.3

Application Note Library ModuleAccess_01 These instructions describe the use of the ModuleAccess_01.lib library using 4 examples.	05.01.2016 2016 Jan 29	zip 1.0 MB	Download
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Libraries

Library

ModuleAccess_01.lib

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



The ModuleAccess_01 library provides both module configuration and access to its process data within a CoDeSys project without the use of WAGO I/O Check.	1.8.7 2020 Jan 27	zip 2.2 MB	Download
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CAD/CAE-Data

CAD data

2D/3D Models 750-487/003-000	URL	Download
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CAE data

EPLAN Data Portal 750-487/003-000	URL	Download
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WSCAD Universe 750-487/003-000	URL	Download
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WSCAD Universe 750-487/003-000	URL	Download
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ZUKEN Portal 750-487/003-000	URL	Download
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EPLAN Data Portal 750-487/003-000	URL	Download
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Device Files

Device Driver

WAGO USB Service Kabel Treiber / Serie 750 und 857	6.5.3.0 2014 Sep 10	zip 4.8 MB	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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