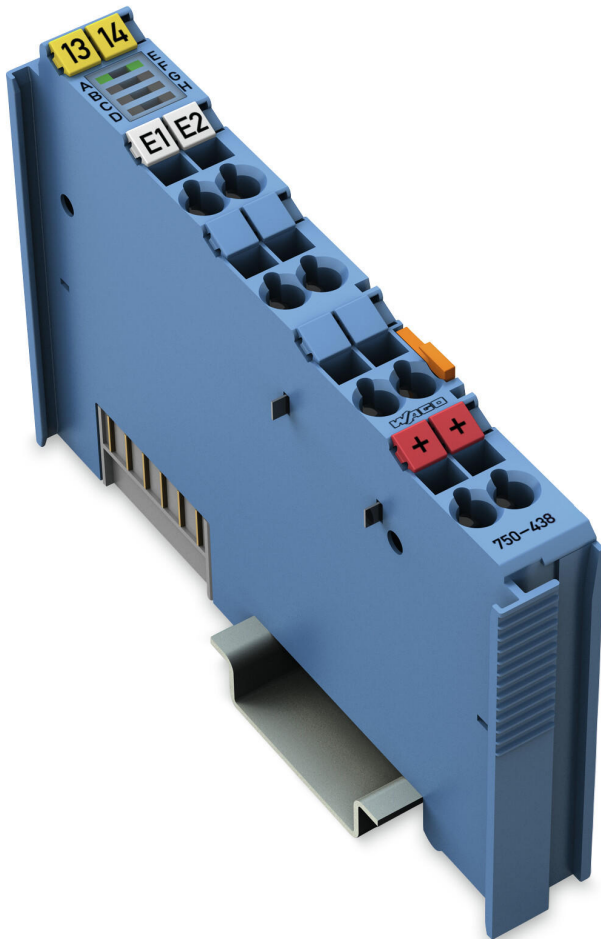


Data sheet | Item number: 750-438

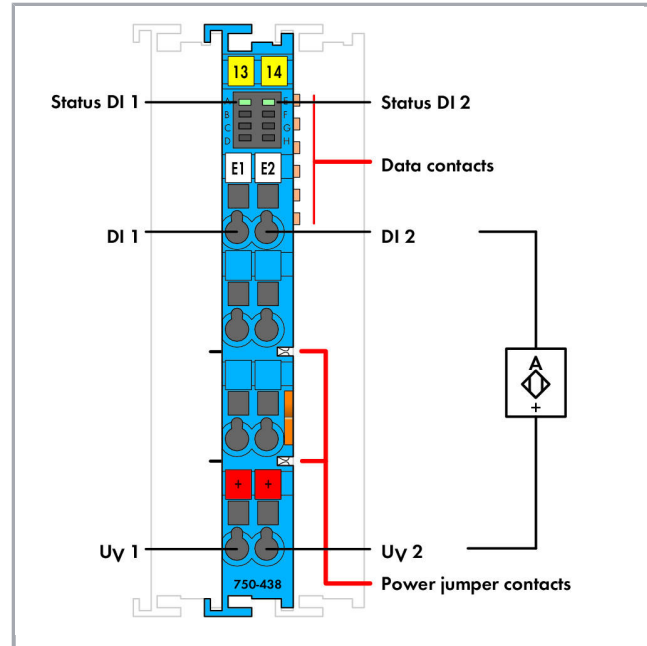
2-channel digital input; NAMUR; Intrinsically safe; -

www.wago.com/750-438



RoHS Compliant

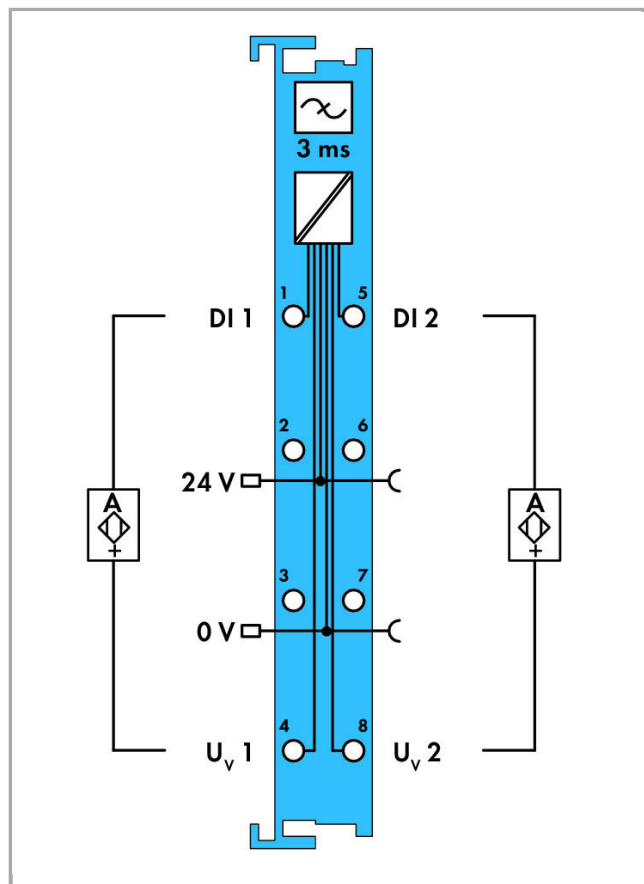
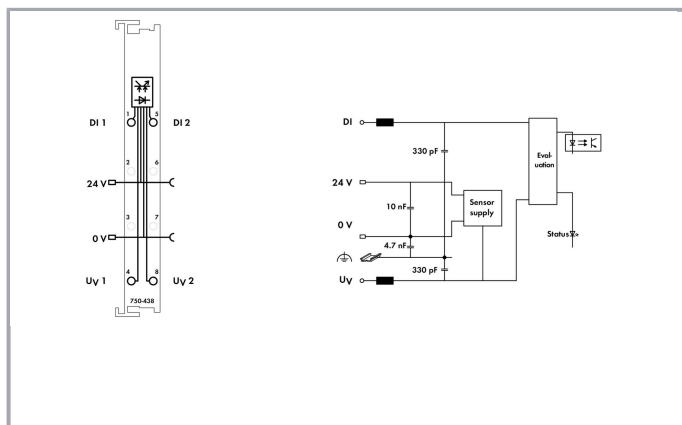
BOMcheck.net



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Item description

This digital input module records binary signals from sensors operating in Zone 0+1 hazardous areas.

NAMUR sensors, optocouplers, mechanical contacts or other actuating elements can also be connected via intrinsically safe devices.

The WAGO I/O System 750 must be installed either in Zone 2 or in a non-hazardous area. Each sensor is supplied with a short-circuit-protected voltage of 8.2 V.

Indicators:

- Green LED (signal on)

Field and system levels are electrically isolated.

Note:

The digital input module must only be operated with a 24 VDC Ex i power supply!

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

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



Data

Technical Data

Number of digital inputs	2
Total number of channels (module)	2
Signal type	NAMUR
Supply voltage (sensor)	DC 8,2 V; Short-circuit-protected; isolated channels
Sensor connection	2 x (2-wire)
Input characteristic	high-side switching
Input filter (digital)	3 ms
Open-circuit voltage	8.2 V
Short-circuit current	$\leq 8.2 \text{ mA}$
Signal current (0) NAMUR	1.2 mA
Signal current (1) NAMUR	2.1 mA
Switching hysteresis	0.2 mA
Contact resistance (max.)	1000Ω
Input pulse length	5 ms
Input pulse separation	3 ms
Power consumption $P_{\text{max.}}$	0.4 W
Input data width (internal) (max.)	2 Bit
Intrinsic safety Ex i	yes
Supply voltage (system)	DC 5 V; via data contacts
Power consumption (5 V system supply)	2.5 mA
Supply voltage (field)	DC 24 V; (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)
Power consumption, field supply (module with no external load)	16 mA
Power loss P_I	0.27 W
Isolation	300 VAC system/field
Number of incoming power jumper contacts	2
Number of outgoing power jumper contacts	2
Current carrying capacity (power jumper contacts)	1 A
Ex guideline	EN/IEC 60079-0, -7, -11, -26, -31
Safety-relevant data (circuit)	$U_O = 12 \text{ V}$; $I_O = 13.5 \text{ mA}$; $P_O = 40.5 \text{ mW}$; Linear characteristic curve
Reactances Ex ia IIC	$L_O = 190 \text{ mH}$; $C_O = 1.4 \mu\text{F}$
Reactances Ex ia IIB	$L_O = 600 \text{ mH}$; $C_O = 9 \mu\text{F}$
Reactances Ex ia IIA	$L_O = 1 \text{ H}$; $C_O = 36 \mu\text{F}$

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Reactances Ex ia I	$L_o = 1 \text{ H}; C_o = 38 \mu\text{F}$
Reactances (note)	Reactances without accounting for the concurrence of L and C
Marking	ATEX, IECEx, INMETRO, Underwriters Laboratories Inc.

Connection data

Connection technology: inputs/outputs	8 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 inch

Geometrical Data

Width	12 mm / 0.472 inch
Height	100 mm / 3.937 inch
Depth	67,8 mm / 2.669 inch
Depth from upper edge of DIN-rail	60,6 mm / 2.386 inch

Mechanical data

Mounting type	DIN-35 rail
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Material Data

Housing material	Polycarbonate, polyamide 6.6
Weight	44.1 g
Conformity marking	CE

Environmental Requirements

Surrounding air temperature (operation)	0 ... 55 °C
Surrounding air temperature (storage)	-40 ... 85 °C
Protection type	IP20
Pollution degree (5)	2 per IEC 61131-2
Operating altitude	0 ... 2000 m
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

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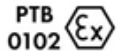
EMC immunity to interference	per EN 61000-6-2, marine applications
EMC emission of interference	per EN 61000-6-3, marine applications
Exposure to pollutants	Per IEC 60068-2-42 and IEC 60068-2-43
Permissible H ₂ S contaminant concentration at a relative humidity 75 %	10 ppm
Permissible SO ₂ contaminant concentration at a relative humidity 75 %	25 ppm

Commercial data

Product Group	15 (Remote I/O)
Packaging type	BOX
Country of origin	DE
GTIN	4045454725525
Customs tariff number	85389099990

Approvals / Certificates

Ex-Approvals

Logo	Approval	Additional Approval Text	Certificate name
	AEx UL International Germany GmbH	UL 60079	E480271
	ATEX TÜV Nord Cert GmbH	EN 60079-0	TUEV_12_ATEX_106032X
	INMETRO TÜV Rheinland do Brasil Ltda.	-	TÜV_14.1911_X
	TUEV Nord TUEV Nord Cert GmbH	IEC 60079, IEC 60079-0	IECEx TUN 12.0039X
	UL Underwriters Laboratories Inc. (HAZARDOUS LOCATIONS)	UL 121201	E198726 Sec.1

Country specific Approvals

Logo	Approval	Additional Approval Text	Certificate name
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KC
National Radio Research Agency

Article 58-2, Clause 3

MSIP-
REM-W43-
DIM750

Ship Approvals

Logo	Approval	Additional Approval Text	Certificate name
	ABS American Bureau of Shipping	-	19- HG1821926
	BV Bureau Veritas S.A.	-	30389/B0 BV
	DNV GL Det Norske Veritas, Germanischer Lloyd	-	TAA0000194
	KR Korean Register of Shipping	-	KR HMB05880- AC001
	LR Lloyds Register	-	02/20026 (E6)
	NK Nippon Kaiji Kyokai	-	TA17255M
	PRS Polski Rejestr Statków	-	TE/2236 /880590/19
	RINA RINA Germany GmbH	-	ELE066419XG

UL-Approvals

Certificate

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Logo	Approval	Additional Approval Text	name
	UL UL International Netherlands B.V. (ORDINARY LOCATIONS)	UL 508	E175199 Sec.1

Counterpart

Compatible products

Marking accessories

	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.: 2009-145/000-005 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.: 2009-145/000-006 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.: 2009-145/000-007 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.: 2009-145/000-012 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 Miniature WSB Quick marking system; plain; Marker width 5 mm; 10 strips with 10 markers per card	www.wago.com/248-501

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**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.: 248-501/000-005**

Mini-WSB marking card; as card; not stretchable; plain; snap-on type; red

www.wago.com/248-501/000-005**Item no.: 248-501/000-006**

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.: 248-501/000-012**

Mini-WSB marking card; as card; not stretchable; plain; snap-on type; orange

www.wago.com/248-501/000-012**Item no.: 248-501/000-017**

Mini-WSB marking card; as card; not stretchable; plain; snap-on type; light green

www.wago.com/248-501/000-017**Item no.: 248-501/000-023**

Mini-WSB marking card; as card; not stretchable; plain; snap-on type; green

www.wago.com/248-501/000-023**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.: 750-103**

Group marker carrier; transparent

www.wago.com/750-103**Item no.: 750-107**

Group marker carrier; transparent

www.wago.com/750-107**Supply module****Item no.: 750-606**

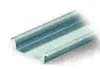
Power Supply; 24 VDC; Diagnostics; Intrinsically safe; light gray

www.wago.com/750-606**Item no.: 750-625/000-001**

Power Supply; 24 VDC; Intrinsically safe; light gray

www.wago.com/750-625/000-001**Carrier rail****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

www.wago.com/210-112**Item no.: 210-113**

Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; unslotted; according to EN 60715

www.wago.com/210-113

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**Item no.: 210-114**

Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; unslotted; similar to EN 60715

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

www.wago.com/210-115**Item no.: 210-118**

Steel carrier rail; 35 x 15 mm; 2.3 mm thick; 2 m long; unslotted; according to EN 60715

www.wago.com/210-118**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**Item no.: 210-197**

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

www.wago.com/210-197**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

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

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

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

www.wago.com/210-508**shield connection****Item no.: 790-108**

Shield clamping saddle; 11 mm wide; diameter of compatible conductor; 3 ... 8 mm

www.wago.com/790-108**Item no.: 790-116**

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.: 790-140**

Shield clamping saddle; diameter of compatible conductor

www.wago.com/790-140**Item no.: 790-208**

Shield clamping saddle; 12.4 mm wide; 3 ... 8 mm

www.wago.com/790-208**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

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Downloads

Documentation

Data sheet

750-438, 2DI NAMUR Ex i, data sheet		pdf 221.3 kB	Download
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Manual

2-Channel, NAMUR Ex i Proximity switch acc. to DIN EN 50227	V 1.4.0	pdf 2.0 MB	Download
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Bid Text

750-438 GAEB X81 - Datei	Feb 19, 2019	xml 6.2 kB	Download
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750-438 doc - Datei	Oct 6, 2017	doc 31.7 kB	Download
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System Description

750/753 Series I/O-System – General Product Information		pdf 1.7 MB	Download
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Use in Hazardous Environments Term definition, marking and installation regulations	V 1.0.0	pdf 1.0 MB	Download
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Design Notes Basic conditions and recommendations for higher operational safety	V 2.0.0	pdf 1.5 MB	Download
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Ex i Overview		pdf 616.0 kB	Download
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Overview on WAGO-I/O-SYSTEM 750 approvals		pdf 780.2 kB	Download
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CAD/CAE-Data

CAD data

2D/3D Models 750-438		URL	Download
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CAE data

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WSCAD Universe 750-438

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Device Files

Device Driver

WAGO USB Service Kabel Treiber / Serie 750 und 857

6.5.3.0

Sep 10, 2014

zip

4.8 MB

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Installation Notes

Product family

750/753 Series – I/O System

[Show all products from the family](#)

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