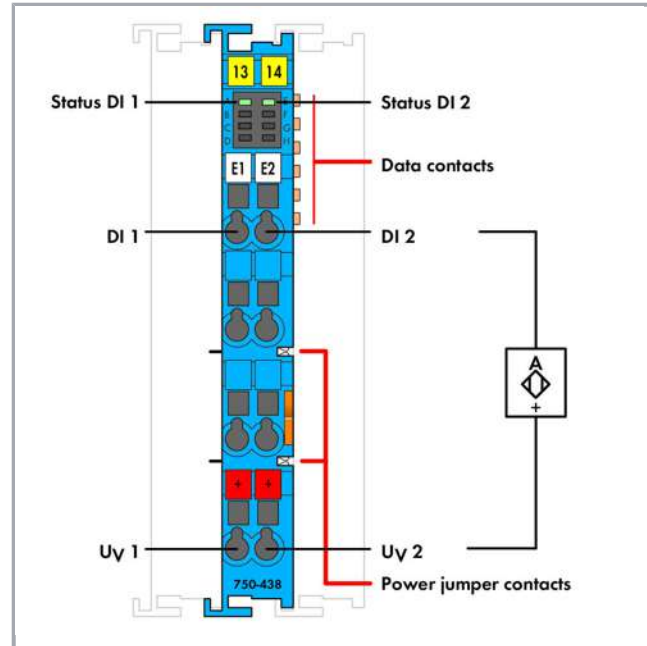


Data sheet | Item number: 750-438

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

[www.wago.com/750-438](http://www.wago.com/750-438)



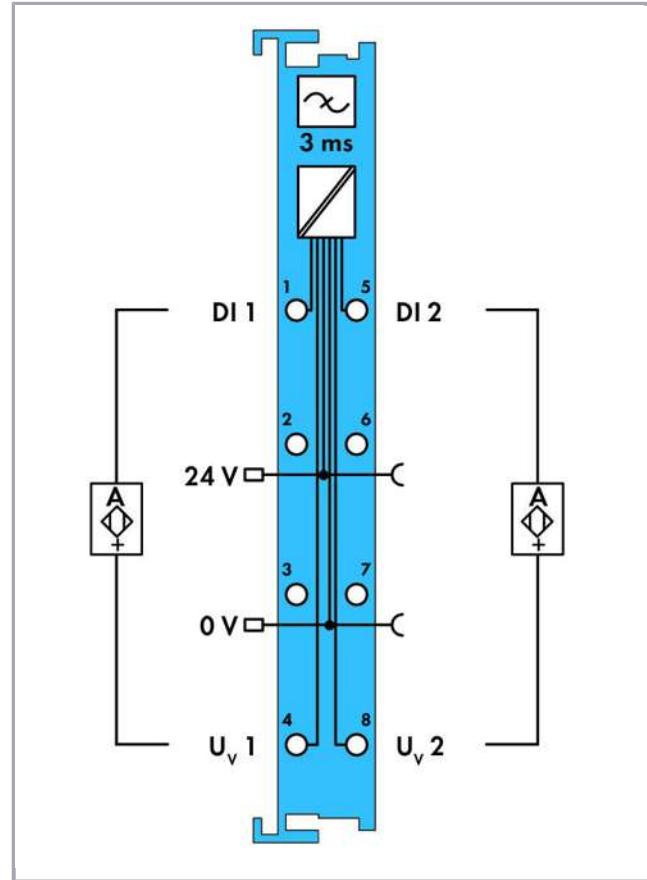
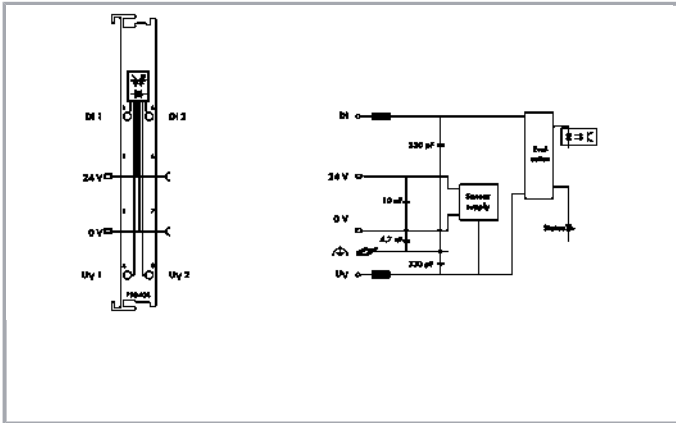
RoHS  Compliant



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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
Type of signal	NAMUR
Sensor supply voltage	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	≤ 8.2 mA
Signal current (0) NAMUR	1.2 mA
Signal current (1) NAMUR	2.1 mA
Switching hysteresis	0.2 mA
Contact resistance max.	1000 Ω
Input pulse duration	5 ms
Input pulse separation	3 ms
Power consumption $P_{max}$	0.4 W
Max input data width (internal)	2 Bit
Intrinsic safety Ex i	yes
System supply voltage	DC 5 V; via data contacts
Current consumption, system supply (5 V)	2.5 mA
Field supply voltage	DC 24 V; (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)	16 mA
Power loss $P_V$	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 of the power jumper contacts	1 A
Ex guideline	EN/IEC 60079-0, -7, -11, -26, -31
Electric circuit, safety-relevant data	$U_O = 12 V$ ; $I_O = 13.5 mA$ ; $P_O = 40.5 mW$ ; Linear characteristic curve
Reactances Ex ia IIC	$L_O = 190 mH$ ; $C_O = 1.4 \mu F$
Reactances Ex ia IIB	$L_O = 600 mH$ ; $C_O = 9 \mu F$

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Ex ia IIA reactances	$L_o = 1 \text{ H}; C_o = 36 \mu\text{F}$
Reactances Ex ia I	$L_o = 1 \text{ H}; C_o = 38 \mu\text{F}$
Reactances	Reactances without accounting for the concurrence of L and C
Marking	ATEX, IECEx, INMETRO, Underwriters Laboratories Inc.

### Connection data

Connection technology: In-/Outputs	8 x CAGE CLAMP®
Connection type (1)	Inputs/Outputs
Solid conductor	0,08 ... 2,5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0,08 ... 2,5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 inch

### Geometrical Data

Width	12 mm / 0.472 inch
Height	67,8 mm / 2.669 inch
Height from upper-edge of DIN-35 rail	60,6 mm / 2.386 inch
Depth	100 mm / 3.937 inch

### Mechanical data

Type of mounting	DIN-35 rail
------------------	-------------

### Material Data

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

### Environmental Requirements

Surrounding air (operating) temperature	0 ... 55 °C
Surrounding air (storage) temperature	-40 ... 85 °C
Protection class	IP20
Degree of pollution (5)	2 per IEC 61131-2
Operating altitude	0 ... 2000 m
Mounting position	horizontal (standing/lying); vertical
Relative air humidity (no condensation)	95 %
Vibration resistance	4g per IEC 60068-2-6

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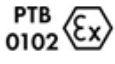


Shock resistance	15g per IEC 60068-2-27
EMC immunity to interference	per EN 61000-6-2, marine applications
EMC emission of interference	per EN 61000-6-3, marine applications
Exposure to pollutants	Per IEC 60068-2-42 and IEC 60068-2-43
Permissible H <sub>2</sub> S contaminant concentration at a relative humidity 75 %	10 ppm
Permissible SO <sub>2</sub> 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 No.	85389099990

### Approvals / Certificates

#### Ex-Approvals

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

Certificate









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Logo	Approval	Additional Approval Text	name
	<b>KC</b> National Radio Research Agency	Article 58-2, Clause 3	MSIP- REM-W43- DIM750

## Ship Approvals


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

## UL-Approvals

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

## Counterpart

## Compatible products

### Carrier rail

	<b>Item no.: 210-112</b> Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; slotted; according to EN 60715; "Hole width 25 mm	<a href="http://www.wago.com/210-112">www.wago.com/210-112</a>
	<b>Item no.: 210-113</b> Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; unslotted; according to EN 60715	<a href="http://www.wago.com/210-113">www.wago.com/210-113</a>
	<b>Item no.: 210-114</b> Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; unslotted; similar to EN 60715	<a href="http://www.wago.com/210-114">www.wago.com/210-114</a>
	<b>Item no.: 210-115</b> Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; slotted; according to EN 60715; "Hole width 18 mm	<a href="http://www.wago.com/210-115">www.wago.com/210-115</a>
	<b>Item no.: 210-118</b> Steel carrier rail; 35 x 15 mm; 2.3 mm thick; 2 m long; unslotted; according to EN 60715	<a href="http://www.wago.com/210-118">www.wago.com/210-118</a>
	<b>Item no.: 210-196</b> Aluminum carrier rail; 35 x 8.2 mm; 1.6 mm thick; 2 m long; unslotted; similar to EN 60715; silver-colored	<a href="http://www.wago.com/210-196">www.wago.com/210-196</a>
	<b>Item no.: 210-197</b> Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; slotted; similar to EN 60715	<a href="http://www.wago.com/210-197">www.wago.com/210-197</a>
	<b>Item no.: 210-198</b> Copper carrier rail; 35 x 15 mm; 2.3 mm thick; 2 m long; unslotted; according to EN 60715; copper-colored	<a href="http://www.wago.com/210-198">www.wago.com/210-198</a>
	<b>Item no.: 210-504</b> Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; slotted; galvanized; according to EN 60715	<a href="http://www.wago.com/210-504">www.wago.com/210-504</a>
	<b>Item no.: 210-505</b> Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; unslotted; galvanized; according to EN 60715	<a href="http://www.wago.com/210-505">www.wago.com/210-505</a>
	<b>Item no.: 210-506</b> Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; unslotted; galvanized; similar to EN 60715	<a href="http://www.wago.com/210-506">www.wago.com/210-506</a>

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**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](http://www.wago.com/210-508)**Supply module****Item no.: 750-606**

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

[www.wago.com/750-606](http://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](http://www.wago.com/750-625/000-001)**shield connection****Item no.: 790-108**

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

[www.wago.com/790-108](http://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](http://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](http://www.wago.com/790-124)**Item no.: 790-140**

Shield clamping saddle; diameter of compatible conductor

[www.wago.com/790-140](http://www.wago.com/790-140)**Item no.: 790-208**

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

[www.wago.com/790-208](http://www.wago.com/790-208)**Item no.: 790-216**

Shield clamping saddle; 21.8 mm wide; 6 ... 16 mm

[www.wago.com/790-216](http://www.wago.com/790-216)**Item no.: 790-220**

Shield clamping saddle; 30 mm wide; 6 ... 20 mm

[www.wago.com/790-220](http://www.wago.com/790-220)**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](http://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; white /000-002

[www.wago.com/2009-145](http://www.wago.com/2009-145)**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](http://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](http://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; white /000-007

[www.wago.com/2009-145](http://www.wago.com/2009-145)  
/000-007

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	<b>Item no.: 2009-145/000-012</b> Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; orange	<a href="http://www.wago.com/2009-145/000-012">www.wago.com/2009-145/000-012</a>
	<b>Item no.: 2009-145/000-023</b> Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; green	<a href="http://www.wago.com/2009-145/000-023">www.wago.com/2009-145/000-023</a>
	<b>Item no.: 2009-145/000-024</b> Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; violet	<a href="http://www.wago.com/2009-145/000-024">www.wago.com/2009-145/000-024</a>
	<b>Item no.: 248-501</b> Miniature WSB Quick marking system; plain; Marker width 5 mm; 10 strips with 10 markers per card	<a href="http://www.wago.com/248-501">www.wago.com/248-501</a>
	<b>Item no.: 248-501/000-002</b> Mini-WSB marking card; as card; not stretchable; plain; snap-on type; yellow	<a href="http://www.wago.com/248-501/000-002">www.wago.com/248-501/000-002</a>
	<b>Item no.: 248-501/000-005</b> Mini-WSB marking card; as card; not stretchable; plain; snap-on type; red	<a href="http://www.wago.com/248-501/000-005">www.wago.com/248-501/000-005</a>
	<b>Item no.: 248-501/000-006</b> Mini-WSB marking card; as card; not stretchable; plain; snap-on type; blue	<a href="http://www.wago.com/248-501/000-006">www.wago.com/248-501/000-006</a>
	<b>Item no.: 248-501/000-007</b> Mini-WSB marking card; as card; not stretchable; plain; snap-on type; gray	<a href="http://www.wago.com/248-501/000-007">www.wago.com/248-501/000-007</a>
	<b>Item no.: 248-501/000-012</b> Mini-WSB marking card; as card; not stretchable; plain; snap-on type; orange	<a href="http://www.wago.com/248-501/000-012">www.wago.com/248-501/000-012</a>
	<b>Item no.: 248-501/000-017</b> Mini-WSB marking card; as card; not stretchable; plain; snap-on type; light green	<a href="http://www.wago.com/248-501/000-017">www.wago.com/248-501/000-017</a>
	<b>Item no.: 248-501/000-023</b> Mini-WSB marking card; as card; not stretchable; plain; snap-on type; green	<a href="http://www.wago.com/248-501/000-023">www.wago.com/248-501/000-023</a>
	<b>Item no.: 248-501/000-024</b> Mini-WSB marking card; as card; not stretchable; plain; snap-on type; violet	<a href="http://www.wago.com/248-501/000-024">www.wago.com/248-501/000-024</a>
	<b>Item no.: 750-103</b> Group marker carrier; transparent	<a href="http://www.wago.com/750-103">www.wago.com/750-103</a>
	<b>Item no.: 750-107</b> Group marker carrier; transparent	<a href="http://www.wago.com/750-107">www.wago.com/750-107</a>

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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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#### Additional Information

Disposal; Electrical and electronic equipment, Packaging	V 1.0.0	pdf 265.8 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

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2D/3D Models 750-438	URL	Download
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<b>CAE data</b>		
EPLAN Data Portal 750-438	URL	Download
<hr/>		
WSCAD Universe 750-438	URL	Download
<hr/>		

## Device Files

### Device Driver

WAGO USB Service Kabel Treiber / Serie 750 und 857	6.5.3.0 Sep 10, 2014	zip 4.8 MB	Download
<hr/>			

## Installation Notes

## Product family

**750/753 Series – I/O System**  
[Show all products from the family](#)

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