

WAGO I/O System 750/753

8-channel digital input; 24 VDC; 3 ms; 1-wire connection;
high-side switching

750-430(/xxx-xxx)



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Every conceivable measure has been taken to ensure the accuracy and completeness of this documentation. However, as errors can never be fully excluded, we always appreciate any information or suggestions for improving the documentation.

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Provisions

This document applies to the following products:

 **750-430** (8DI 24 VDC, 3.0 ms) 8-channel digital input; 24 VDC; 3 ms; 1-wire connection; high-side switching

Product detail page	 www.wago.com/750-430
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 **750-430/025-000** (8DI 24 VDC, 3.0 ms /T) 8-channel digital input; 24 VDC; 3 ms; extended temperature; 1-wire connection; high-side switching

Product detail page	 www.wago.com/750-430/025-000
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Note

Note applicable documents!

The complete operating instructions for the product consists of several documents. The product must only be installed and operated in accordance with the complete operating instructions. Knowledge of the entire operating instructions is required for proper use. You can find all documents and information on the detailed product page.

Applicable document

System Manual I/O System 750/753

- Provisions
- Safety
- Transport and Storage
- Assembly and Disassembly
- Conductor Termination
- Decommissioning

Overview

The I/O module acquires binary control signals from field devices (e.g., sensors, encoders, switches or proximity switches).

The I/O module has eight input channels and directly connects to 1-wire sensors.

Each input channel has a noise-rejection RC filter with a 3.0 ms time constant.

The I/O module inputs provide high-side switching. If the 24 V potential for field power is switched to an input connection, the signal status for the corresponding input channel is set to "high."

For each channel, a green status LED indicates the signal status.


The field level and the system level are electrically isolated from one another.

The I/O module can be operated on all head stations of the WAGO I/O System 750/753.

Properties

Note

Read system manual!

You can find cross-product information on the topic of System Features in the  **System Manual I/O System 750/753.**

3.1 View

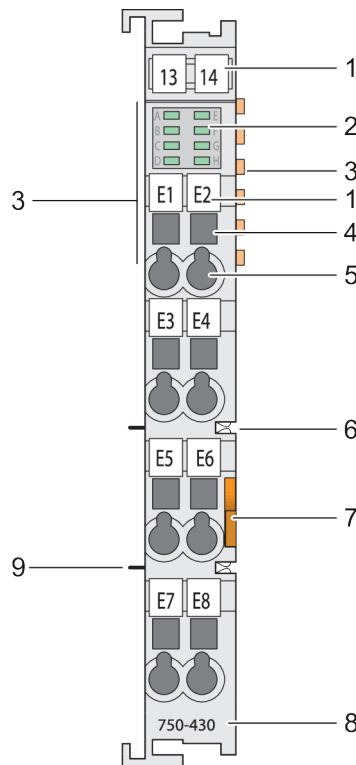













Figure 1: View

1	Marking possibility with Mini-WSB (optional)	---
2	Status LEDs	 Indicators [▶ 7]
3	Data contacts	 System Manual I/O System 750/753
4	Access to open the associated CAGE CLAMP® connection	 System Manual I/O System 750/753
5	CAGE CLAMP® connections	 Wiring Interface [▶ 8] and  System Manual I/O System 750/753
6	Power jumper contacts (spring)	 Power Jumper Contacts [▶ 9] and  System Manual I/O System 750/753
7	Release tab	 System Manual I/O System 750/753
8	Item number	 Scope of Applicability [▶ 4]
9	Power jumper contacts (blade)	 Power Jumper Contacts [▶ 9] and  System Manual I/O System 750/753

3.2 Indicators

For each channel, a green status LED indicates the signal status.

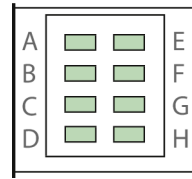


Figure 2: Indicators

Channel	Designation	LED	State	Function
1	DI 1 status	A	Off	DI 1 input: signal voltage (0)
			Green	DI 1 input: signal voltage (1)
2	DI 2 status	E	Off	DI 2 input: signal voltage (0)
			Green	DI 2 input: signal voltage (1)
3	DI 3 status	B	Off	DI 3 input: signal voltage (0)
			Green	DI 3 input: signal voltage (1)
4	DI 4 status	F	Off	DI 4 input: signal voltage (0)
			Green	DI 4 input: signal voltage (1)
5	DI 5 status	C	Off	DI 5 input: signal voltage (0)
			Green	DI 5 input: signal voltage (1)
6	DI 6 status	G	Off	DI 6 input: signal voltage (0)
			Green	DI 6 input: signal voltage (1)
7	DI 7 status	D	Off	DI 7 input: signal voltage (0)
			Green	DI 7 input: signal voltage (1)
8	DI 8 status	H	Off	DI 8 input: signal voltage (0)
			Green	DI 8 input: signal voltage (1)

3.3 Wiring Interface

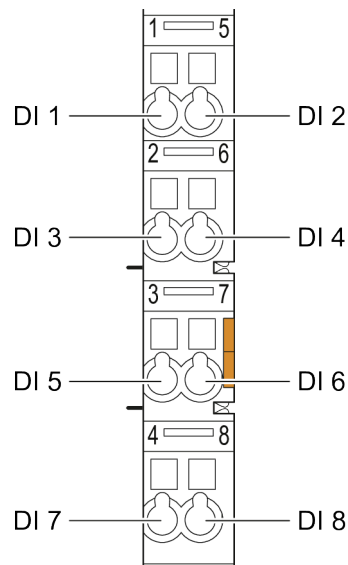


Figure 3: CAGE CLAMP® Connections

Channel	Designation	Connection	Function
1	DI 1	1	DI 1 input: signal voltage
2	DI 2	5	DI 2 input: signal voltage
3	DI 3	2	DI 3 input: signal voltage
4	DI 4	6	DI 4 input: signal voltage
5	DI 5	3	DI 5 input: signal voltage
6	DI 6	7	DI 6 input: signal voltage
7	DI 7	4	DI 7 input: signal voltage
8	DI 8	8	DI 8 input: signal voltage

3.4 Power Jumper Contacts

The potential for the field supply is fed in via the power jumper contacts and passed on via the spring contacts.

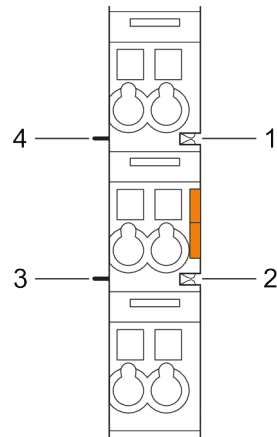


Figure 4: Power Jumper Contacts

No.	Type
1	Groove with spring contact
2	
3	Power jumper contact
4	

Arrangement in the Bus Node

For mechanical arrangement of the I/O module, the previous component must have at least 2 open grooves for accommodating the power jumper contacts.

For electrical compatibility requirements see Section [Circuit Diagram \[▶ 10\]](#).

3.5 Circuit Diagram

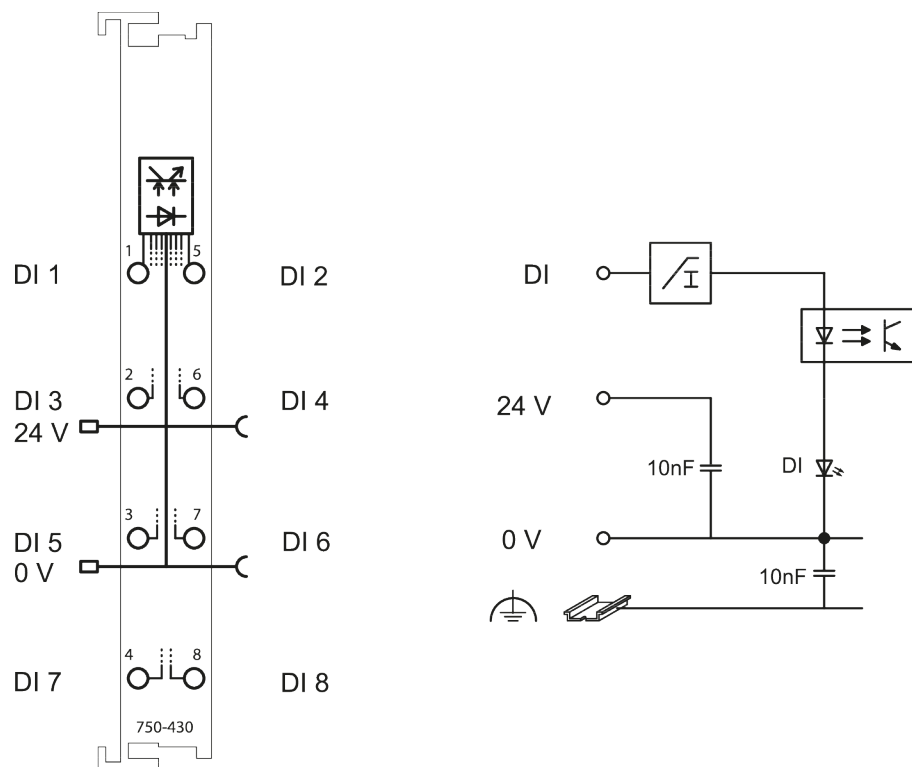


Figure 5: Circuit Diagram

For information on the system power supply, please see [System Manual I/O System 750/753](#)

Functions

4.1 Signal Processing

Each input channel has a noise-rejection RC filter with a 3.0 ms time constant.

The I/O module inputs provide high-side switching. If the 24 V potential for field power is switched to an input connection, the signal status for the corresponding input channel is set to “high.”

4.2 Process Image


Table 1: Process Image –Input

Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
DI 8	DI 7	DI 6	DI 5	DI 4	DI 3	DI 2	DI 1
DI 1	DI 1 signal status – digital input channel 1						
DI 2	DI 2 signal status – digital input channel 2						
DI 3	DI 3 signal status – digital input channel 3						
DI 4	DI 4 signal status – digital input channel 4						
DI 5	DI 5 signal status – digital input channel 5						
DI 6	DI 6 signal status – digital input channel 6						
DI 7	DI 7 signal status – digital input channel 7						
DI 8	DI 8 signal status – digital input channel 8						

Planning

Note


Read system manual!





You can find cross-product information on the topic of Planning in the  **System Manual I/O System 750/753.**

5.1 Compatibility

The I/O module can be operated on all head stations of the WAGO I/O System 750/753.

5.2 Requirements for Wiring and Accessories

If applicable, use appropriate potential multiplication modules (item no.:  **750-614**) for the power supply to the sensors.

The I/O module has no power jumper contacts for receiving and forwarding the ground potential. Use a potential distribution module (e.g., Item No.:  **750-601**,  **750-602**,  **750-610** or  **750-612**) if the subsequent I/O modules require ground potential supply.

5.3 Connection Example

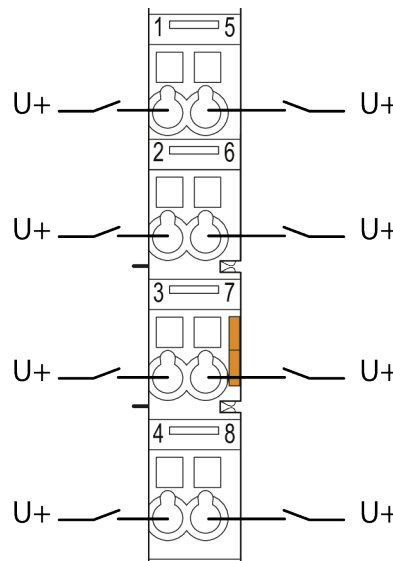




Figure 6: Example: 1-Wire Connection

Appendix

6.1 Technical Data, Approvals, Guidelines and Standards

See also

-  Data sheet 750-430 [[▶ 14](#)]
-  Data sheet 750-430/025-000 [[▶ 17](#)]

Note

Subject to changes!

Please also observe the further product documentation! You can generate the current datasheet at any time at: www.wago.com /<item number>.

Data sheet | Item number: 750-430

8-channel digital input; 24 VDC; 3 ms

<https://www.wago.com/750-430>



This digital input module features eight channels in a width of just 12 mm (0.47 inch). It receives control signals from digital field devices (e.g., sensors). Each input module has a noise-rejection filter. Field and system levels are electrically isolated.

Technical data

Number of digital inputs	8
Total number of channels (module)	8
Signal type	Voltage
Signal type (voltage)	24 VDC
Sensor connection	8 x (1-wire)
Input characteristic	high-side switching
Input filter (digital)	3 ms
Input current per channel for signal (1) typ.	2.8 mA
Voltage range for signal (0)	-3 ... +5 VDC
Voltage range for signal (1)	15 ... 30 VDC
Input data width (internal) max.	8 bits
Supply voltage (system)	5 VDC; via data contacts
Current consumption (5 V system supply)	17 mA
Supply voltage (field)	24 VDC (-25 ... +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)
Isolation	500 V system/field
Indicators	LED (A-D) green: Status DI 1, DI 3, DI 5, DI 7; LED (E-H) green: Status DI 2, DI 4, DI 6, DI 8
Number of incoming power jumper contacts	2
Number of outgoing power jumper contacts	2
Current carrying capacity (power jumper contacts)	10 A

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 inches

Physical data

Width	12 mm / 0.472 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
Pluggable connector	fixed

Material data

Color	light gray
Housing material	Polycarbonate; polyamide 6.6
Fire load	1.174 MJ
Weight	47 g
Conformity marking	CE

Environmental requirements

Ambient temperature (operation)	0 ... +55 °C
Surrounding air temperature (storage)	-25 ... +85 °C
Protection type	IP20
Pollution degree (5)	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 61000-6-4, 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

Approvals and certificates

Ex-Approvals



Approval	Standard	Certificate name
ATEX TUEV Nord Cert GmbH	EN 60079-0	
CCCEX CQST/CNEX	CNCA-C23-01	2020312310000215 (Ex nA IIC T4 Gc)
EAC Brjansker Zertifizierungsstelle	TP TC 012/2011	EAC RU C-DE.AM02. B.00163/19 (2Ex nA IIC T4 Gc X)
IECEX TUEV Nord Cert GmbH	IEC 60079-0	IECEX_TUN_14.0035_X (Ex ec IIC T4 Gc)
INMETRO TÜV Rheinland do Brasil Ltda.	IEC 60079-0	BR-Ex_TÜV 12.1297 X
UL Underwriters Laboratories Inc. (HAZARDOUS LOCATIONS)	UL 121201	E198726 Sec.1

Country specific Approvals



Approval	Standard	Certificate name
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-DIM750

Ship Approvals



Approval	Standard	Certificate name
ABS American Bureau of Shipping	-	22-2219060
BSH Bundesamt fuer Seeschifffahrt und Hydrographie	-	1104
BV Bureau Veritas S.A.	-	13453/E0 BV
DNV DNV Germany GmbH	DNV-CG-0339,Aug.2021	TAA0000194
KR Korean Register of Shipping	-	KR HMB05880-AC001
LR Lloyds Register EMEA	-	LR22180952TA
PRS Polski Rejestr Statków	-	TE/2236/880590/19
RINA RINA Germany GmbH	-	ELE343521XG001

UL-Approvals



Approval	Standard	Certificate name
UL Underwriters Laboratories Inc. (ORDINARY LOCATIONS)	UL 508	E175199 Sec.1



This digital input module features eight channels in a width of just 12 mm (0.47 inch). It receives control signals from digital field devices (e.g., sensors). Each input module has a noise-rejection filter. Field and system levels are electrically isolated.

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Current carrying capacity (power jumper contacts)	10 A

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Width	12 mm / 0.472 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
Pluggable connector	fixed

Material data

Color	light gray
Housing material	Polycarbonate; polyamide 6.6
Fire load	1.182 MJ
Weight	47.7 g
Conformity marking	CE

Environmental requirements

Ambient temperature (operation)	-20 ... +60 °C
Surrounding air temperature (storage)	-40 ... +85 °C
Protection type	IP20
Pollution degree (5)	2 per IEC 61131-2
Operating altitude	0 ... 2000 m / 0 ... 6562 ft
Mounting position	horizontal (standing/lying); vertical
Relative humidity (without condensation)	95 %
Relative humidity (with condensation)	Short-term condensation per Class 3K6/IEC EN 60721-3-3 and E-DIN 40046-721-3, accounting for a temperature range of -20 to +60 °C (except for wind-driven precipitation, water and ice formation)
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 61000-6-4, 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

Approvals and certificates

Ex-Approvals



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CCCEX CQST/CNEX	CNCA-C23-01	2020312310000215 (Ex nA IIC T4 Gc)
EAC Brjansker Zertifizierungsstelle	TP TC 012/2011	EAC RU C-DE.AM02. B.00163/19 (2Ex nA IIC T4 Gc X)
IECEX TUEV Nord Cert GmbH	IEC 60079-0	IECEX_TUN_14.0035_X (Ex ec IIC T4 Gc)
INMETRO TUV Rheinland do Brasil Ltda.	IEC 60079-0	BR-Ex_TUV 12.1297 X
UL Underwriters Laboratories Inc. (HAZARDOUS LOCATIONS)	UL 121201	E198726 Sec.1

Country specific Approvals



Approval	Standard	Certificate name
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-DIM750

Ship Approvals



Approval	Standard	Certificate name
ABS American Bureau of Ship- ping	-	22-2227356-PDA
BSH Bundesamt fuer See- schiffahrt und Hydrogra- phie	-	1104
DNV Det Norske Veritas	DNV-CG-0339,Aug.2021	TAA00001J4
LR Lloyds Register	-	LR22194334TA
PRS Polski Rejestr Statków	-	TE/2237/880590/19

UL-Approvals



Approval	Standard	Certificate name
UL Underwriters Laboratories Inc. (ORDINARY LOCATI- ONS)	UL 508	E175199 Sec.1

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