

WAGO I/O System 750/753

2-channel digital input; 24 VDC; 0.2 ms; 2- to 4-wire connection;
high-side switching

750-400; 750-400/025-000



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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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1 Provisions

1.1 Scope of Applicability

This document applies to the following products:

🔗 **750-400** (2DI 24V DC 3.0ms) 2-channel digital input; 24 VDC; 0.2 ms; 2- to 4-wire connection; high-side switching.

From hardware version	07
From firmware version	--
Product detail page	🔗 www.wago.com/750-400

🔗 **750-400/025-000** (2DI 24V DC 3.0ms /T) 2-channel digital input; 24 VDC; 3 ms; 2- to 4-wire connection; high-side switching; ext. temperature.

From hardware version	06
From firmware version	--
Product detail page	🔗 www.wago.com/750-400/025-000

Note

Note applicable documents!

The complete operating instructions for the products consist of several applicable documents. The products must only be installed and operated in accordance with the complete operating instructions. Knowledge of all applicable documents is required for proper use. Please find all documents and information on the detailed product pages.

Applicable document

System Manual I/O System 750/753

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

2 Overview

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

The I/O module has two input channels and directly connects to 2-, 3- or 4-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.

3 Properties

3.1 View

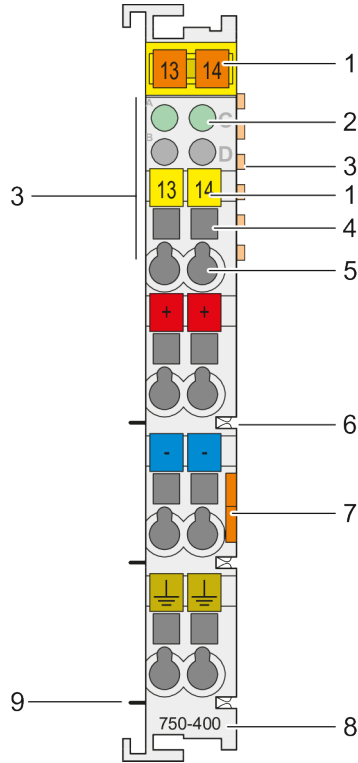


Figure 1: View

1	Slot for Mini-WSB (optional)	☐ System Manual I/O System 750/753
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 [> 7] and ☐ System Manual I/O System 750/753
6	Power jumper contacts (spring)	🔗 Power Jumper Contacts [> 8] 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 [> 8] and ☐ System Manual I/O System 750/753

3.2 Indicators

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

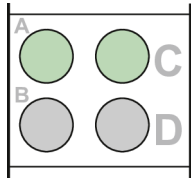


Figure 2: Indicators

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	C	Off	DI 2 input: signal voltage (0)
			Green	DI 2 input: signal voltage (1)

3.3 Wiring Interface

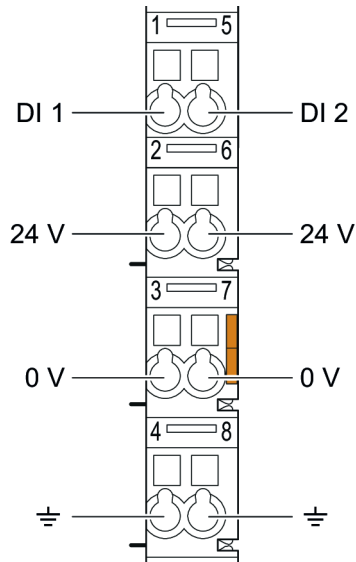


Figure 3: CAGE CLAMP® Connections

Channel	Designation	Connection	Function
1	DI 1	1	DI 1 input: signal voltage
	24 V	2	DI 1 input: sensor supply
	0 V	3	DI 1 input: sensor supply
	Ground	4	DI 1 input: ground
2	DI 2	5	DI 2 input: signal voltage
	24 V	6	DI 2 input: sensor supply
	0 V	7	DI 2 input: sensor supply
	Ground	8	DI 2 input: ground

3.4 Power Jumper Contacts

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

For additional information on the Power Jumper Contacts, please see [System Manual I/O System 750/753](#).

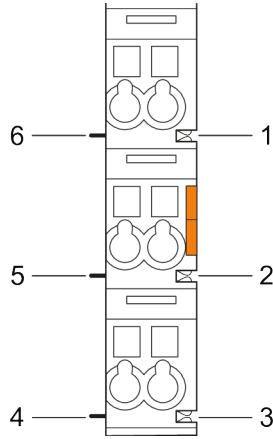


Figure 4: Power Jumper Contacts

No.	Type
1	Groove with spring contact
2	
3	
4	Blade contact
5	
6	

Arrangement in the Bus Node

For electrical compatibility requirements see Section [Circuit Diagram \[> 9 \]](#).

For mechanical arrangement of the I/O module, the previous component must have 3 open grooves for accommodating the blade contacts.

3.5 Circuit Diagram

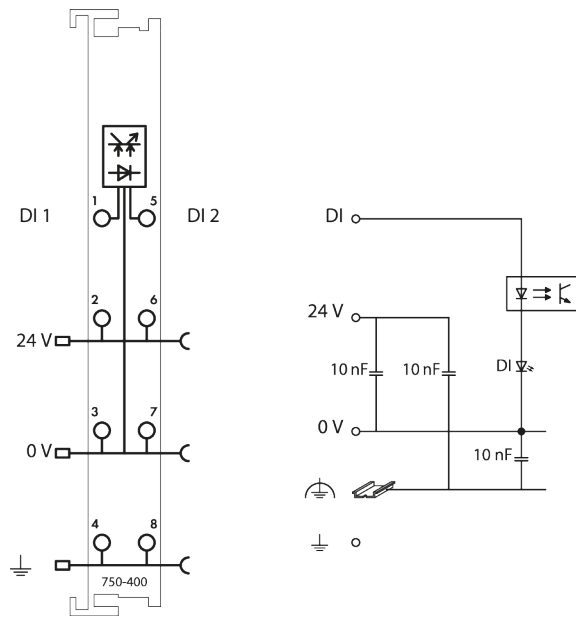


Figure 5: Circuit Diagram

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

4 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 1	Bit 0
		DI 2	DI 1
DI 1	DI 1 signal status – digital input channel 1		
DI 2	DI 2 signal status – digital input channel 2		

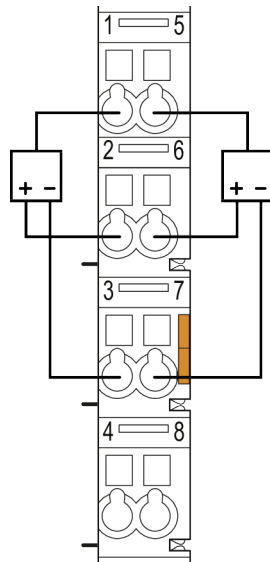


Figure 7: Example: 3-Wire Connection

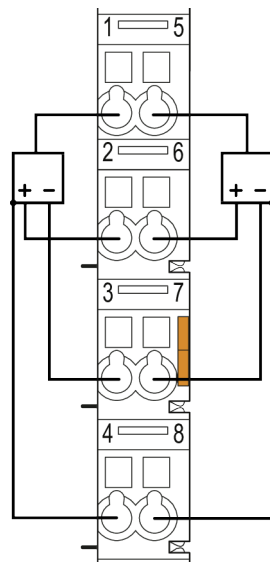


Figure 8: Example: 4-Wire Connection

6 Appendix



6.1 Technical Data, Approvals, Guidelines and Standards

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>.

See also

-  Data Sheet 750-400 [▶ 14]
-  Data Sheet 750-400/025-000 [▶ 17]

This digital input module receives control signals from 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	2
Total number of channels (module)	2
Signal type	Digital
Signal type (voltage)	24 VDC
Sensor connection	2 x (2-wire, 3-wire, 4-wire)
Input characteristic	high-side switching
Input filter (digital)	3 ms
Input current per channel for signal (1) typ.	4.5 mA
Voltage range for signal (0)	-3 ... +5 VDC
Voltage range for signal (1)	15 ... 30 VDC
Sensor supply	24 VDC
Input data width (internal) max.	2 bits
Supply voltage (system)	5 VDC; via data contacts
Current consumption (5 V system supply)	3.7 mA
Supply voltage (field)	24 VDC (-25 ... +30 %); via power jumper contacts (power supply via blade contact; transmission (field side supply voltage only) via spring contact)
Isolation	500 V system/field
Indicators	LED (A, C) green: Status DI 1, DI 2
Number of incoming power jumper contacts	3
Number of outgoing power jumper contacts	3
Current carrying capacity (power jumper contacts)	10 A

Connection data

Connection technology: inputs/outputs	8 x CAGE CLAMP® (inputs)
Connectable conductor materials	Copper
Connection type 1	Input
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	69.8 mm / 2.748 inches
Depth from upper-edge of DIN-rail	62.6 mm / 2.465 inches

Mechanical data

Mounting type	DIN-35 rail
Pluggable connector	fixed

Material data

Color	light gray
Housing material	Polycarbonate; polyamide 6.6
Fire load	1.209 MJ
Weight	45.8 g
Conformity marking	CE

Environmental requirements

Ambient temperature (operation)	0 ... +55 °C
Ambient temperature (storage)	-40 ... +85 °C
Protection type	IP20
Pollution degree	2 per IEC 61131-2
Operating altitude	0 ... 2000 m / 0 ... 6562 ft
Mounting position	Horizontal left, horizontal right, horizontal top, horizontal bottom, vertical top and vertical bottom
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

Product classification

UNSPSC	32151705
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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)	35d1bd2d-1dd4-4949-936a-c10f9d8f4359
SCIP notification number (Belgium)	119e9707-a7b8-49ce-8650-b187b4d1d894
SCIP notification number (Bulgaria)	43a66e7a-333a-450a-b7ce-2a330c2bf26d
SCIP notification number (Czech Republic)	c4ef2ef5-9eb7-4550-bea3-21eaca67a60f
SCIP notification number (Denmark)	107c1150-20b7-42d6-b924-79659ef9c1e1
SCIP notification number (Finland)	253d5b41-1c4f-4ec0-bc02-5e79ab22731f
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SCIP notification number (Romania)	fcad878d-d438-473d-a716-c9bdcaeb349d

Environmental Product Compliance

SCIP notification number (Sweden)

f4c35607-1d0c-4bfa-ba35-6d631aab3b0

Approvals / Certificates

General approvals



Approval	Standard	Certificate Name
EAC GZO Almaty Standart	TP TC 020/2011	EAC CoC 03083
KC National Radio Research Agency	Article 58-2, Clause 3	MSIP-REM-W43-DIM750
UL Underwriters Laboratories Inc. (ORDINARY LOCATIONS)	UL 508	E175199

Declarations of conformity and manufacturer's declarations

Approval	Standard	Certificate Name
EU-Declaration of Conformity WAGO GmbH & Co. KG	-	-
UK-Declaration of Conformity WAGO GmbH & Co. KG	-	-

Approvals for marine applications



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 GL SE	DNV-CG-0339, Aug.2021	TAA0000194
KR Korean Register of Shipping	-	KR HMB05880-AC001
LR Lloyds Register EMEA	-	LR22180952TA
PRS Polski Rejestr Statków	-	TE/1101/880590/23
RINA RINA Germany GmbH	-	ELE343521XG001

Approvals for hazardous areas



Approval	Standard	Certificate Name
ATEX TUEV Nord Cert GmbH	EN 60079-0	TUEV14ATEX148929X (II 3 G Ex ec IIC T4 Gc)
CCCEX CQST/CNEX	CNCA-C23-01	2020312310000213 (Ex ec IIC T4 Gc)
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	TUV 12.1297 X
UKEx WAGO GmbH & Co. KG	EN 60079-0	UKCA_WA GO22UKEX003X_ec
UL Underwriters Laboratories Inc. (HAZARDOUS LOCATIONS)	UL 121201	E198726

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

Current addresses can be found at: www.wago.com



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 Each input module has a noise-rejection filter.
 Field and system levels are electrically isolated.

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Current consumption (5 V system supply)	3.7 mA
Supply voltage (field)	24 VDC (-25 ... +30 %); via power jumper contacts (power supply via blade contact; transmission (field side supply voltage only) via spring contact)
Isolation	500 V system/field
Indicators	LED (A, C) green: Status DI 1, DI 2
Number of incoming power jumper contacts	3
Number of outgoing power jumper contacts	3
Current carrying capacity (power jumper contacts)	10 A

Connection data	
Connection technology: inputs/outputs	8 x CAGE CLAMP® (inputs)
Connectable conductor materials	Copper
Connection type 1	Input
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	69.8 mm / 2.748 inches
Depth from upper-edge of DIN-rail	62.6 mm / 2.465 inches

Mechanical data

Mounting type	DIN-35 rail
Pluggable connector	fixed

Material data

Color	light gray
Housing material	Polycarbonate; polyamide 6.6
Fire load	0.996 MJ
Weight	45.4 g
Conformity marking	CE

Environmental requirements

Ambient temperature (operation)	-20 ... +60 °C
Ambient temperature (storage)	-40 ... +85 °C
Protection type	IP20
Pollution degree	2 per IEC 61131-2
Operating altitude	0 ... 2000 m / 0 ... 6562 ft
Mounting position	Horizontal left, horizontal right, horizontal top, horizontal bottom, vertical top and vertical bottom
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

Product classification

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RoHS Compliance Status	Compliant,With Exemption
RoHS Exemption	6(c) 7(a) 7(c)-I 7(c)-II
SCIP notification number (Austria)	61accd64-3615-496b-b822-d00795dc4f69
SCIP notification number (Belgium)	841e3cab-521a-44b5-9c93-610f3c61bbf1
SCIP notification number (Bulgaria)	3da5e12e-ad8a-4504-96f2-ffcac8508889
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SCIP notification number (Hungary)	bfa2b4e3-89cd-451a-bc84-f3c7e6a93d3e

Environmental Product Compliance

SCIP notification number (Italy)	d24f7ffd-2977-4146-bbbc-178e0e50a681
SCIP notification number (Netherlands)	590ace41-19ae-4f0e-93d6-3a5077d53438
SCIP notification number (Poland)	3e06f83e-caba-4389-8c0a-1c1e00748bee
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SCIP notification number (Sweden)	25a58937-0e74-4c7a-8a58-d3518a55b035

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Approvals for marine applications



Approval	Standard	Certificate Name
ABS American Bureau of Shipping	-	22-2227356-PDA
BSH Bundesamt fuer Seeschifffahrt und Hydrographie	-	1104
LR Lloyds Register	-	LR2475997TA
PRS Polski Rejestr Statków	-	TE/1102/880590/23

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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	TÜV 12.1297 X
UKEX WAGO GmbH & Co. KG	EN 60079-0	UKCA_WA GO22UKEX003X_ec
UL Underwriters Laboratories Inc. (HAZARDOUS LOCATIONS)	UL 121201	E198726

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

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