

WAGO I/O System 750/753

4-Channel digital output; 24 VDC; 0.5 A

750-504; 750-504/025-000



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E-Mail: [✉ documentation@wago.com](mailto:documentation@wago.com)

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1 Provisions

1.1 Scope of Applicability

This document applies to the following products:

🔗 **750-504** (4DO 24V DC 0.5A) 4-Channel digital output; 24 VDC; 0.5 A.

From hardware version	16
From firmware version	--
Product detail page	🔗 www.wago.com/750-504

🔗 **750-504/025-000** (2DO 24V DC 0.5A/T) 2-channel digital output; 24 VDC; 0.5 A; ext. temperature.

From hardware version	14
From firmware version	--
Product detail page	🔗 www.wago.com/750-504/025-000

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 transmits binary control signals to connected actuators (e.g., magnetic valves, contactors, transmitters, relays or other electrical loads).

The I/O module has four output channels, allowing direct connection of 2-wire actuators.

The I/O module's outputs are short-circuit-protected.

The I/O module's outputs provide high-side switching. If the signal status of an output channel is "high," the 24 V potential for the field power supply is switched to the corresponding output connection.

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

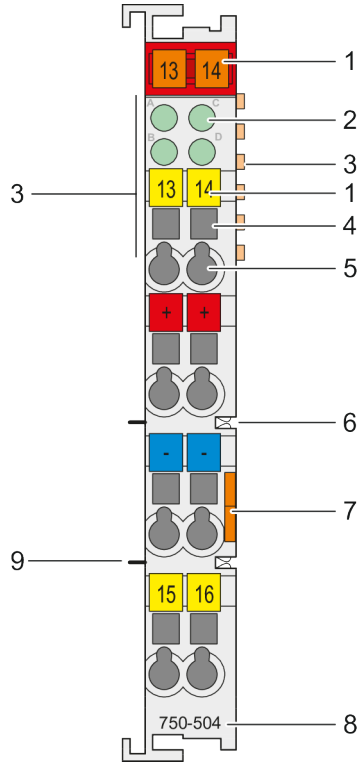


Figure 1: View

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 [> 8] 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.

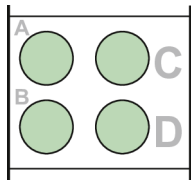


Figure 2: Indicators

Channel	Designation	LED	State	Function
1	DO 1 status	A	Off	DO 1 output: signal voltage (0)
			Green	DO 1 output: signal voltage (1)
2	DO 2 status	C	Off	DO 2 output: signal voltage (0)
			Green	DO 2 output: signal voltage (1)
3	DO 3 status	B	Off	DO 3 output: signal voltage (0)
			Green	DO 3 output: signal voltage (1)
4	DO 4 status	D	Off	DO 4 output: signal voltage (0)
			Green	DO 4 output: signal voltage (1)

3.3 Wiring Interface

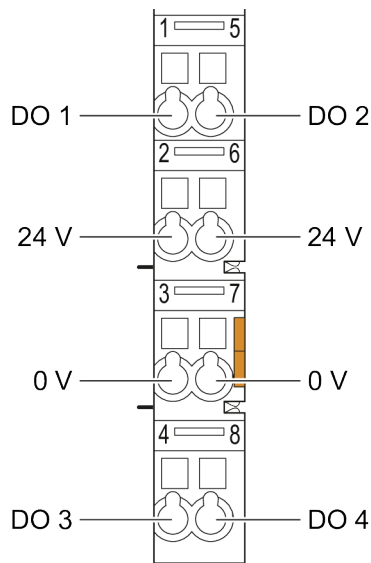


Figure 3: CAGE CLAMP® Connections

Channel	Designation	Connection	Function
1	DO 1	1	Output DO 1: signal voltage
2	DO 2	5	Output DO 2: signal voltage
3	DO 3	4	Output DO 3: signal voltage
4	DO 4	8	Output DO 4: signal voltage
-	24 V	2	Field supply +24 V
	24 V	6	Field supply +24 V
	0 V	3	Field supply 0 V
	0 V	7	Field supply 0 V

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](#).

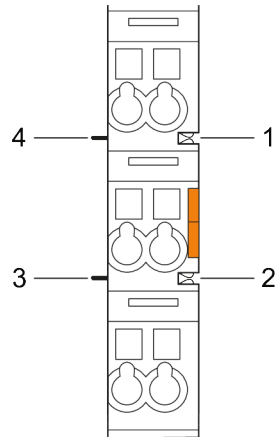


Figure 4: Power Jumper Contacts

No.	Type
1	Groove with spring contact
2	
3	Blade 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 blade contacts.

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

3.5 Circuit Diagram

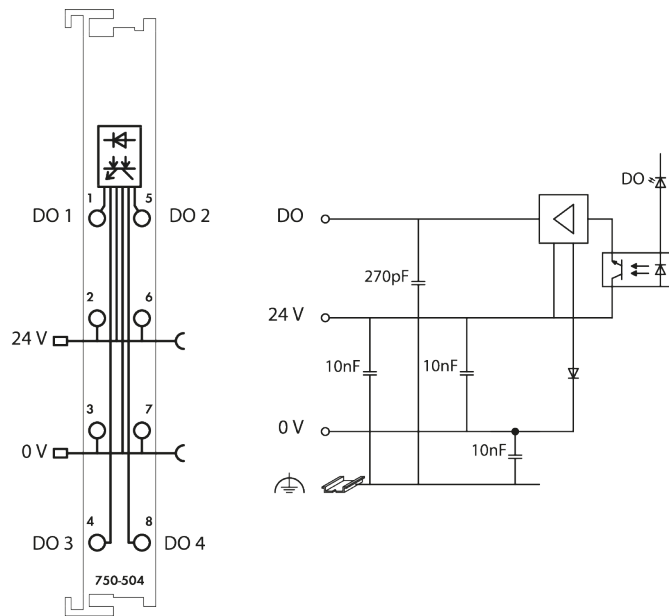


Figure 5: Circuit Diagram (HW 13 and Above)

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

4 Functions

4.1 Signal Processing

The I/O module’s outputs provide high-side switching. If the signal status of an output channel is “high,” the 24 V potential for the field power supply is switched to the corresponding output connection.

4.2 Process Image

Table 1: Process Image–Output

	Bit 3	Bit 2	Bit 1	Bit 0
	DO 4	DO 3	DO 2	DO 1
DO 1	DO 1 signal state – digital output channel 1			
DO 2	DO 2 signal state – digital output channel 2			
DO 3	DO 3 signal state – digital output channel 3			
DO 4	DO 4 signal state – digital output channel 4			

5 Planning

This section provides helpful information for planing the use of the product in a node.

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

To protect the I/O module against overload, use a supply module with a fuse (e.g., item no.: [750-601](#) or [750-610](#)).

If applicable, use appropriate potential multiplication modules (item no.: [750-614](#)) for the power supply to the actuators.

Use a suitable protective circuit to limit the induction voltage, such a recovery diode, parallel to the load. Inductive voltage limitation prevents damage to the I/O module's electronics when inductive loads are switched off.

5.3 Connection Examples

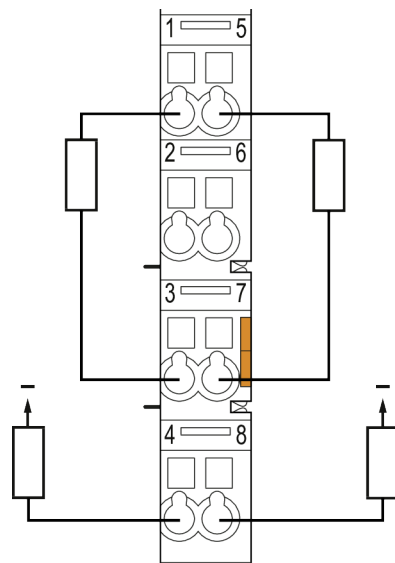


Figure 6: 2-Wire Connection

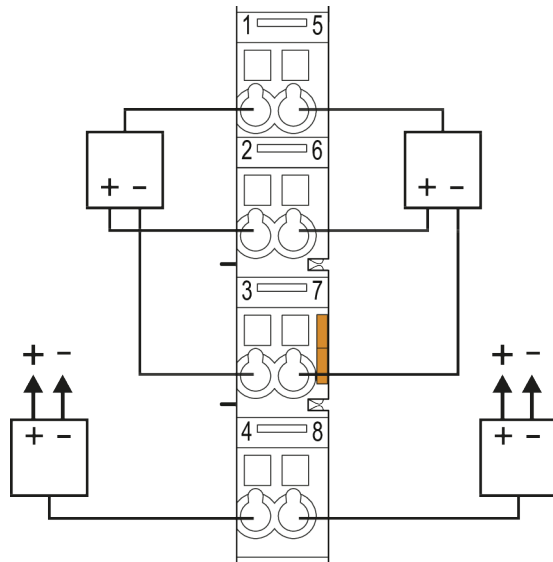


Figure 7: 3-Wire Connection

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 750-504 [▶ 14]
-  Data sheet 750-504/025-000 [▶ 17]

This digital output module transmits control signals from the automation device to the connected actuators.
 All outputs are short-circuit-protected.
 Field and system levels are electrically isolated.

Technical data

Number of digital outputs	4
Total number of channels (module)	4
Signal type	Digital
Signal type (voltage)	24 VDC
Actuator connection	2 x (2-wire, 3-wire); A suitable field side connection module (e.g., 750-614) must also be used to connect other actuators.
Output characteristic	high-side switching
Output current per channel	0.5 A
Output current	short-circuit-protected
Load type	Resistive, inductive, lamp load
Switching frequency (max.)	1 kHz
Inductive load switch-off energy dissipation (max.)	0.3 J
Output data width (internal) max.	4 bits
Supply voltage (system)	5 VDC; via data contacts
Current consumption (5 V system supply)	10 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)
Current consumption, field supply (module with no external load)	30 mA
Isolation	500 V system/field
Indicators	LED (A-D) green: Status DO 1 ... DO 4
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® (outputs)
Connectable conductor materials	Copper
Connection type 1	Output
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	1.514 MJ
Weight	48.5 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 75980-60-8
REACH Candidate List Substance	Diboron trioxide Lead Lead monoxide Phosphine oxide, diphenyl(2,4,6-trimethylbenzoyl)-
RoHS Compliance Status	Compliant, With Exemption
RoHS Exemption	6(c) 7(a) 7(c)-I 7(c)-II
SCIP notification number (Austria)	Oee11308-65d0-4709-ae0a-4ec9dc600432
SCIP notification number (Belgium)	14e7b44d-4870-4c14-8131-338a06c0b032
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SCIP notification number (Czech Republic)	7e125eed-20e0-4e26-9b50-8ccbe1ae402d
SCIP notification number (Denmark)	4b10ba90-ac09-47a2-b00d-bd890606da04
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SCIP notification number (Poland)	7cfbaa3a-dddb-4d1f-afda-ec259ebe8729

Environmental Product Compliance

SCIP notification number (Romania)	eea1ec1b-8015-4fd1-9b82-c1e020ad0864
SCIP notification number (Sweden)	499c6b17-a92e-49ba-90c6-e31793b9dba5

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-DOM750

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

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

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

Data Sheet | Item Number: 750-504/025-000
4-channel digital output; 24 VDC; 0.5 A; Ext. Temperature

<https://www.wago.com/750-504/025-000>



This digital output module transmits control signals from the automation device to the connected actuators.
All outputs are short-circuit-protected.
Field and system levels are electrically isolated.

Technical data

Number of digital outputs	4
Total number of channels (module)	4
Signal type	Digital
Signal type (voltage)	24 VDC
Actuator connection	2 x (2-wire, 3-wire); A suitable field side connection module (e.g., 750-614) must also be used to connect other actuators.
Output characteristic	high-side switching
Output current per channel	0.5 A
Output current	short-circuit-protected
Load type	Resistive, inductive, lamp load
Switching frequency (max.)	1 kHz
Inductive load switch-off energy dissipation (max.)	0.3 J
Output data width (internal) max.	4 bits
Supply voltage (system)	5 VDC; via data contacts
Current consumption (5 V system supply)	10 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)
Current consumption, field supply (module with no external load)	30 mA
Isolation	500 V system/field
Indicators	LED (A-D) green: Status DO 1 ... DO 4
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® (outputs)
Connectable conductor materials	Copper
Connection type 1	Output
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	1.018 MJ
Weight	50 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

UNSPSC	32151705
--------	----------

Environmental Product Compliance

CAS-No.	1303-86-2 1317-36-8 25550-51-0 7439-92-1 75980-60-8
REACH Candidate List Substance	4-Methyl-1,2-cyclohexanedicarboxylic anhydride Diboron trioxide Lead Lead monoxide Phosphine oxide, diphenyl(2,4,6-trimethylbenzoyl)-
RoHS Compliance Status	Compliant, With Exemption
RoHS Exemption	6(c) 7(a) 7(c)-I 7(c)-II
SCIP notification number (Austria)	950d0eac-f966-4cdd-ad5e-7f2824e0ca11
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Environmental Product Compliance

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SCIP notification number (Romania)	0e5af73d-d394-4a14-a992-d0ea6e6516ae
SCIP notification number (Sweden)	df7bc067-69ae-4a13-91b1-f0d500c88b7d

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-DOM750
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	-	22-2227356-PDA
BSH Bundesamt fuer Seeschifffahrt und Hydrographie	-	1104
LR Lloyds Register	-	LR2475997TA
PRS Polski Rejestr Statków	-	TE/1102/880590/23

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 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!

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

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