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Digital Input/Output Module 32-Channel

705031

Brief description

The digital input/output module 32-channel (705031) is a system component of the automation system JUMO variTRON.

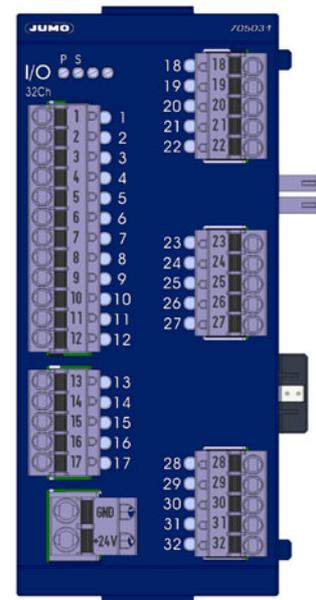
The module is equipped with 17 fixed digital outputs DC 0/24 V. Using the three expansion slots, the module can be expanded with up to 15 digital inputs or digital outputs in different combinations.

The digitized input states are available in the system for further processing. The digital outputs are controlled via the system bus by digital signals.

The load current is to be supplied through the front terminals +24 V/GND. LEDs are used to indicate the voltage supply and the module operating statuses.

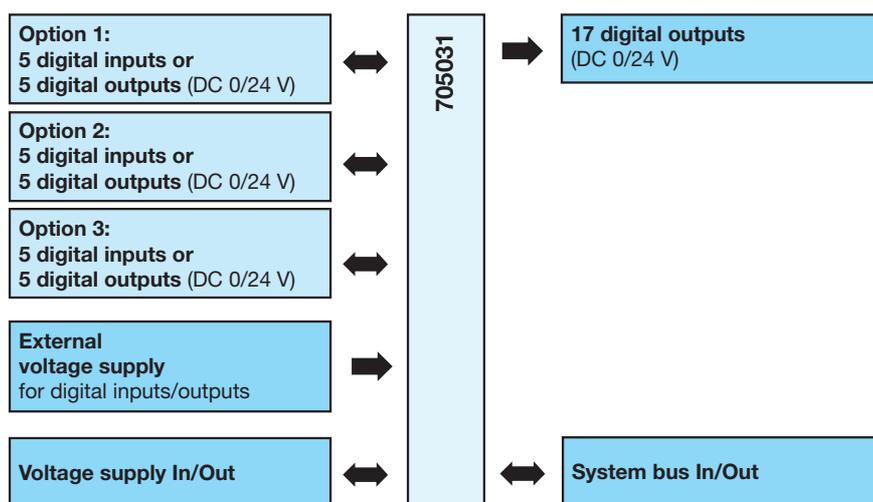
A setup program can be used to conveniently configure the digital input/output module.

For service purposes the module insert can be easily pulled out of the case at the front. The case, including the bus board, remains installed on the DIN rail.



Type 705031

Block diagram



Features

- Compatible with JUMO variTRON as of system version 3
- 17 digital outputs
- Up to 15 additional digital outputs or digital inputs
- External voltage supply for the inputs and outputs via terminal on front
- Automatic configuration after the module insert has been exchanged (hot swappable)
- Connection of inputs and outputs on the front
- Removable terminal strips with Push-In technology
- Quick wiring of operating voltage and system bus provided by simple module connection principle

Approvals and approval marks (see "Technical data")



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Technical data

Digital inputs

Quantity Per optional board (expansion slots 1 to 3)	Max. 15 5
Input signal	DC 0/24 V (PLC level; logical "0" = -3 to +5 V; logical "1" = 15 to 30 V)
Current	Max. 5 mA per input

Digital outputs

Quantity Standard version Per optional board (expansion slots 1 to 3)	Max. 32 17 5
Output signal	DC 0/24 V (depending on external voltage supply)
Current per output	Max. 500 mA, short-circuit proof
Total current of all outputs	Max. 16 A Observe electrical data for the external voltage supply!

Electrical data

Voltage supply Connection Voltage Residual ripple	For module electronics Lateral (supply via central processing unit or router module 705042) DC 24 V +25/-20 % SELV 5 %	
Current consumption	Max. 123 mA (module electronics only; at DC 19.2 V)	
Power consumption	Max. 3 W (module electronics only)	
External voltage supply Connection Voltage Residual ripple Admissible current	For digital inputs/outputs At the front (removable terminal strip, 2-pole with Push In technology) DC 24 V +25/-20 % SELV 5 % Depending on the ambient temperature and mounting distance above the module	
	At 70 mm distance: 55 °C: max. 13.0 A 54 °C: max. 13.5 A 51 °C: max. 14.0 A 48 °C: max. 14.5 A 45 °C: max. 15.0 A 42 °C: max. 15.5 A ≤ 40 °C: max. 16.0 A	At 35 mm distance: 55 °C: max. 10.0 A
Inputs and outputs (terminals 1 to 32) and external voltage supply (terminals GND and +24 V)	At the front (removable terminal strips with Push In technology)	
Conductor cross section on terminals 1 to 32 Wire or stranded wire without ferrule Stranded wire with ferrule	Min. 0.14 mm ² , max. 1.5 mm ² Without plastic collar: min. 0.25 mm ² , max. 1.5 mm ² With plastic collar: min. 0.25 mm ² , max. 0.5 mm ²	
Stripping length on terminals 1 to 32	9 mm	

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Conductor cross section on terminals GND and +24 V	
Wire or stranded wire without ferrule	Min. 1.5 mm ² , max. 2.5 mm ²
Stranded wire with ferrule	Min. 1.5 mm ² , max. 2.5 mm ²
2 × stranded wire with twin core-end ferrule with plastic collar	1.5 mm ²
Stripping length on terminals GND and +24 V	10 mm
Electrical safety	According to DIN EN 61010-1 Overvoltage category III, pollution degree 2
Protection rating	III
Electromagnetic compatibility	Acc. to DIN EN 61326-1
Interference emission	Class A - only for industrial use -
Interference immunity	Industrial requirement

Housing and environmental conditions

Case type	Plastic case for DIN rail mounting in the control cabinet (indoor use); DIN rail acc. to DIN EN 60715, 35 mm x 7.5 mm x 1 mm
Dimensions (W × H × D)	45 mm × 103.6 mm × 101.5 mm (without connection elements)
Weight (fully fitted)	Approx. 205 g
Protection type	IP20, according to DIN EN 60529
Ambient temperature range	-20 to +55 °C
Storage temperature range	-40 to +70 °C
Resistance to climatic conditions	Relative humidity ≤ 90 % annual average without condensation (climate class 3K3 acc. to DIN EN 60721-3-3 with extended temperature and humidity range)
Site altitude	Up to 2000 m above sea level
Vibration	Acc. to DIN EN 60068-2-6, table C.2
Amplitude	0.15 mm from 10 to 58.1 Hz
Acceleration	20 m/s ² from 58.1 to 150 Hz
Shock	Acc. to DIN EN 60068-2-27, table A.1
Peak acceleration	150 m/s ²
Shock duration	11 ms

Approvals and approval marks

Approval mark	Test facility	Certificate/certification number	Inspection basis	Valid for
c UL us	Underwriters Laboratories	E201387	UL 61010-1 (3. Ed.), CAN/CSA-22.2 No. 61010-1 (3. Ed.)	All types

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Connection diagram

The connection diagram in the data sheet provides preliminary information about the connection options. For the electrical connection, only use the installation instructions or the operating manual. The knowledge and the correct technical compliance with the safety information and warnings contained in these documents are mandatory for mounting, electrical connection, and startup as well as for safety during operation.

Color coding of optional inputs and outputs

The optional digital inputs and digital outputs can be identified by the color of the pin header: black = digital inputs, gray = digital outputs. However, the terminal strips attached to the pin headers are gray in both cases. If necessary, the terminal strip must be pulled off to identify the color of the pin header. It must be ensured that this does not jeopardize the operation of the plant.

Digital inputs

All digital inputs are optional. The connection depends on the device version.

Connection	Input	Terminals	Symbol and terminal designation
Apply signal DC 0/24 V to the terminal of the relevant input (terminal 18 to 32). Ground reference via GND terminal required!	18 to 32	18 and GND to 32 and GND	 + ————○ 18 to 32 - ————○ GND
Or (alternative connection option):			
Apply the voltage DC 24 V from terminal +24 V via a potential-free contact to the terminal of the relevant input (terminal 18 to 32). External voltage supply DC 24 V required at terminals +24 V and GND!	18 to 32	18 and +24 V to 32 and +24 V	 + ————○ 18 to 32 - ————○ +24 V

Digital outputs

The digital outputs 1 to 17 are available by default, the digital outputs 18 to 32 are optional. The connection of the optional digital outputs depends on the device version.

Connection	Output	Terminals	Symbol and terminal designation
Output signal DC 0/24 V / max. 500 mA External voltage supply DC 24 V required at terminals +24 V and GND!	1 to 17	1 and GND to 17 and GND	 + ————○ 1 to 17 - ————○ GND
	18 to 32	18 and GND to 32 and GND	 + ————○ 18 to 32 - ————○ GND

External voltage supply

Connection	Terminals	Symbol and terminal designation
DC 24 V (front)	+24 V and GND	 + ————○ +24 V U _x - ————○ GND

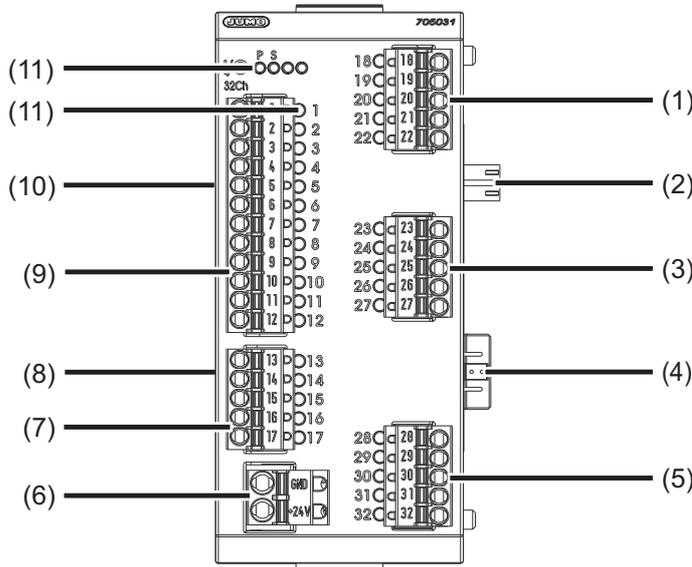
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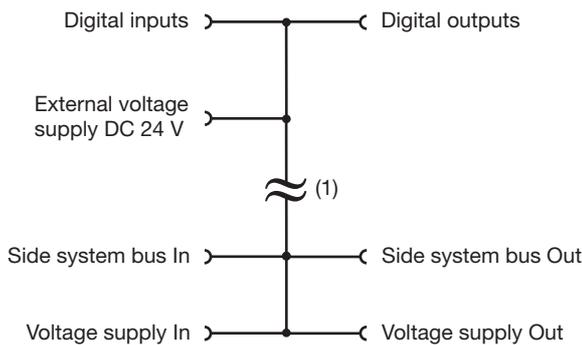


Display and connection elements



- (1) Expansion slot 1:
Digital inputs or outputs 18 to 22
- (2) Voltage supply Out, DC 24 V
- (3) Expansion slot 2:
Digital inputs or outputs 23 to 27
- (4) Side system bus Out
- (5) Expansion slot 3:
Digital inputs or outputs 28 to 32
- (6) External voltage supply DC 24 V
- (7) Digital outputs 13 to 17
- (8) Side system bus In
- (9) Digital outputs 1 to 12
- (10) Voltage supply In, DC 24 V
- (11) Status displays (LED):
P = Voltage supply
S = Status
1 to 17 = Digital outputs (lit = active)
18 to 32 = Digital inputs/outputs (lit = active)

Electrical isolation



(1) Functional galvanic isolation for connection of SELV or PELV electrical circuits.

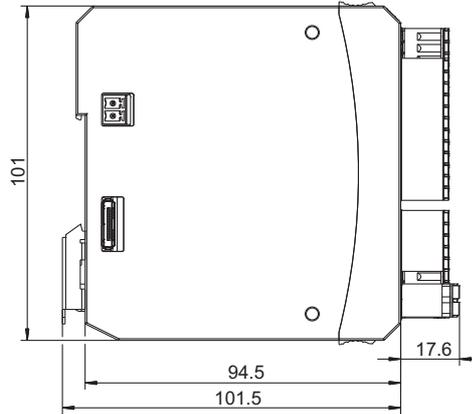
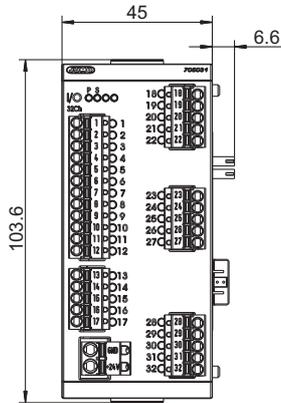
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Dimensions



Compatibility

JUMO variTRON

See data sheet of the relevant central processing unit JUMO variTRON:
 Data sheet 70500x

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Order details

(1) Basic type	
705031	Digital input/output module 32-channel (17 digital outputs)
(2) Expansion slot 1	
00	Not used
01	5 digital inputs
02	5 digital outputs
(3) Expansion slot 2	
00	Not used
01	5 digital inputs
02	5 digital outputs
(4) Expansion slot 3	
00	Not used
01	5 digital inputs
02	5 digital outputs
(5) Voltage supply	
36	DC 24 V +25/-20 %, SELV
(6) DNV GL approval	
000	Without approval

	(1)	(2)	(3)	(4)	(5)	(6)
Order code	705031	/			- 36	/ 000
Order example	705031	/	00	00	00	- 36 / 000

Scope of delivery

1 digital input/output module 32-channel
1 installation instructions

Accessories

Description	Part no.
Modules for option slots (expansion boards):	
5 digital inputs	00745044
5 digital outputs	00745045