

JUMO GmbH & Co. KG
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JUMO UK LTD
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JUMO Process Control, Inc.
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JUMO I/O system

16-channel digital input module

Areas of application

- Heating, ventilation, and air-conditioning
- Industrial furnaces and heating systems
- Water and wastewater
- Food and beverage industry

The module is worth considering for a variety of other areas of application due to its universal usability.

Special features

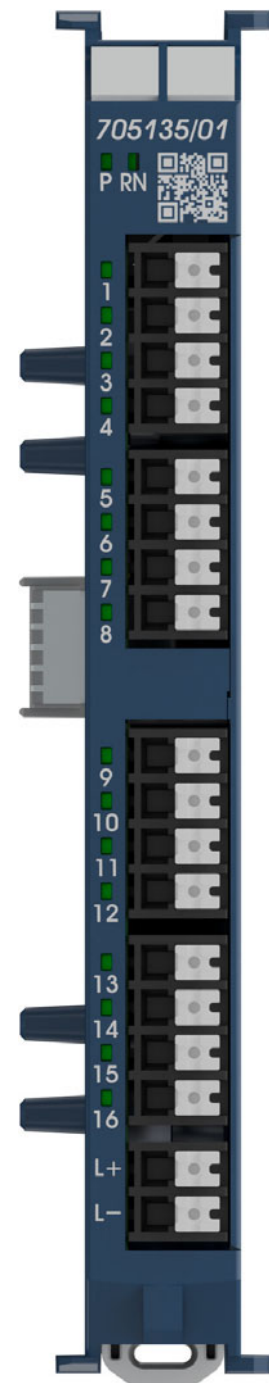
- Terminal strips with PUSH IN technology
- Quick wiring of operating voltage and system bus by simply plugging the modules together
- Mixed operation with modules from the 7050xx series
- Cycle time of the module configurable via the central processing unit
- Two LEDs for displaying the module status (Power/Run)
- One LED per input for displaying the signal state (High/Low)
- Increased vibration and shock resistance due to optional connector bars

Description

The 16-channel digital input module (705135) is a module of the JUMO I/O system (7051xx) and provides 16 digital inputs (DC 0/24 V) for the JUMO variTRON automation system (7050xx). It is suitable for indoor use and is installed on a DIN rail inside a control cabinet.

The 16-channel digital input module is intended for operation on a central processing unit of the JUMO variTRON automation system. A system module (705171) is required for direct connection to JUMO variTRON 500; a 3-channel communication module (705163) is required for connection to JUMO variTRON 300 and 500 touch.

The 16-channel digital input module can be operated on a third-party PLC if it supports the JUMO system bus. A 3-channel communication module is also required for this.






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Approval marks and certificates

	Designation	DNV®
	Test facility	DNV®
	Certificate no.	Submitted
	Inspection basis	Class Guidelines CG 0339
	Valid for	Module with extra code 062
	Designation	UL
	Test facility	Underwriters Laboratories
	Certificate no.	Submitted
	Inspection basis	CAN/CSA-C22.2 No. 61010-1-12 (3rd Ed.) / UL 61010-1 (3rd Ed.)
	Valid for	All versions of the module

Technical data

Electrical data

Voltage supply	
Connection	Side (supply via central processing unit with system module or via communication module)
Voltage	DC 24 V +25/-20 % SELV
Residual ripple	5 %
Current consumption	0.1 A (at 19.2 V)
Power consumption	1.5 W (module electronics only) 13.44 W (max.)
Electrical safety	According to DIN EN 61010-1:2020 Overvoltage category III, pollution degree 2

Digital inputs

Number	16
Connection	At the front (terminals with PUSH IN technology)
Input signal	DC 0/24 V (PLC level; logic level "0" = -3 to +5 V; logic level "1" = +15 to +30 V)
Current	Max. 5 mA per input
Conductor cross section	
Wire or stranded wire	Min. 0.25 mm ² , max. 1.5 mm ²
Stranded wire with ferrule	
Without plastic collar	Min. 0.25 mm ² , max. 1.5 mm ²
With plastic collar	Min. 0.25 mm ² , max. 0.75 mm ²
Stripping length	8 to 10 mm

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Electrical isolation

	a	Functional galvanic isolation for the connection of SELV or PELV electrical circuits
	1	EtherCAT (side) Out system bus
	2	Voltage supply (side) Out
	3	Voltage supply (side) In
	4	EtherCAT (side) In system bus
	5	Reference potential L- (GND) for digital inputs
6	Digital inputs	
<p>To ensure galvanic isolation, the input signals must be fed from a separate power supply unit whose secondary side is galvanically isolated from the system's voltage supply.</p>		

Environmental influences

Storage conditions	1K21 according to DIN EN 60721-3-1:2018-12
Temperature range (expanded)	-40 to +70 °C
Operating conditions	3K22 according to DIN EN 60721-3-3:2018-12
Temperature range (expanded)	-20 to +55 °C
Relative humidity (expanded)	≤ 90 % without condensation
Vibration resistance	According to DIN EN 60068-2-6:2008-10
Amplitude	0.15 mm from 10 to 58.1 Hz
Acceleration	20 m/s ² from 58.1 to 150 Hz
Shock resistance	According to DIN EN 60068-2-27:2010-02
Peak acceleration	150 m/s ²
Shock duration	11 ms
Shock resistance	IK06 according to DIN EN 62262:2022-02
Site altitude	Max. 2000 m above sea level
Protection type	IP20 according to DIN EN 60529:2014-09
Electromagnetic compatibility	According to DIN EN 61326-1:2022-11
Interference emission	Class A – only for industrial use –
Interference immunity	Industrial requirement

Mechanical features

Housing type	Plastic housing for DIN-rail mounting in the control cabinet (indoor use); DIN rail according to DIN EN 60715, 35 mm × 7.5 mm × 1 mm
Weight	Approx. 90 g

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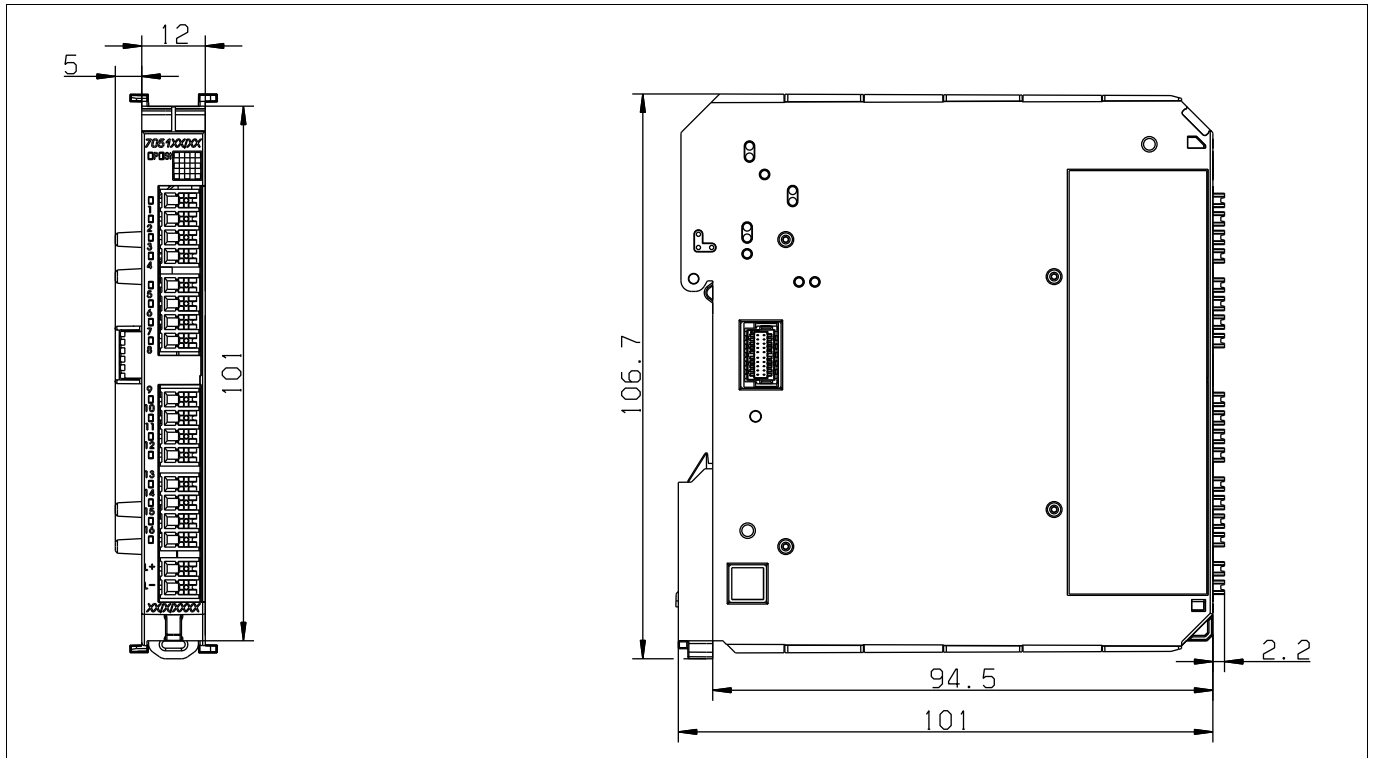
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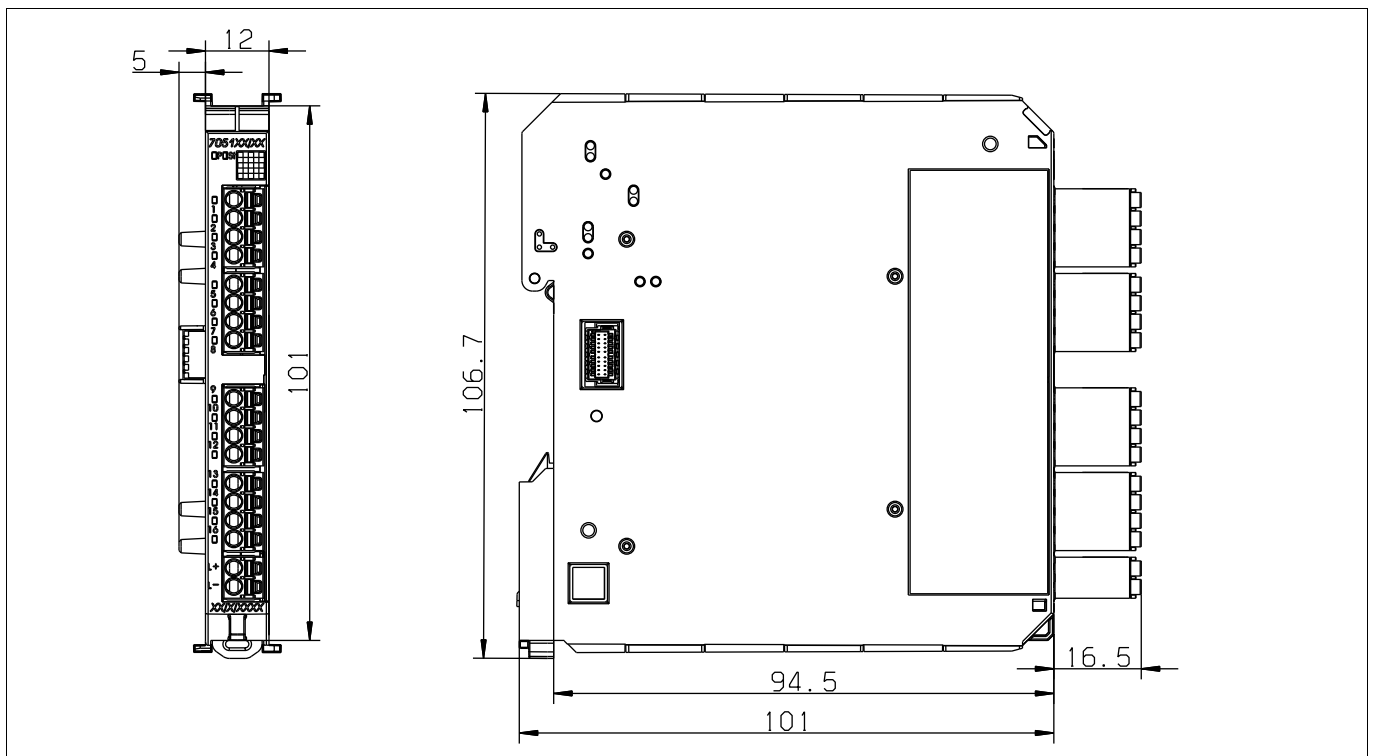


Dimensions

Module with PCB terminal blocks



Module with pluggable terminals (circuit board plug connectors)



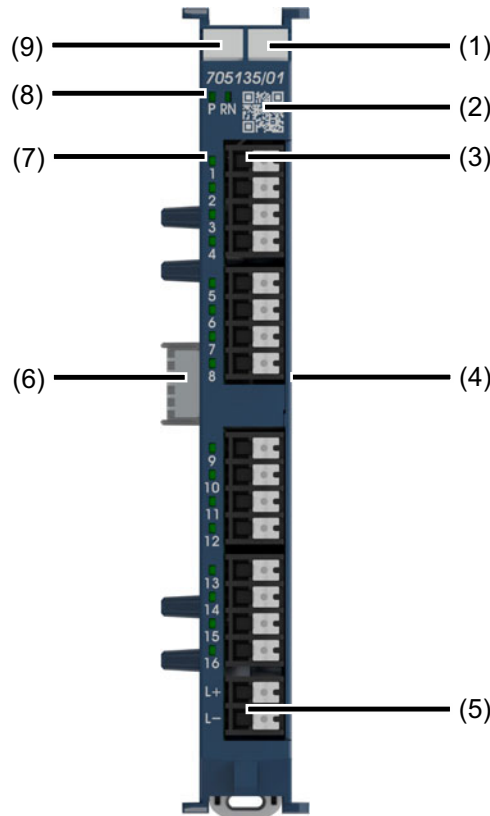
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Display and connection elements



- 1 Space for inscription label (not included in scope of delivery)
- 2 QR code (web link to JUMO product page)
- 3 Connection terminal for digital input (here: input 1)
- 4 Plug connector (socket, side) for Out voltage supply and EtherCAT Out system bus
- 5 Connection terminal for reference potential (GND) of the digital inputs
- 6 Plug connector (side) for In voltage supply In and EtherCAT In system bus
- 7 Status display of the digital input (lights up = input signal active)
- 8 Status display of the module (P = Power, RN = Run)
- 9 Space for inscription label (not included in scope of delivery)

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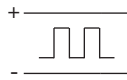
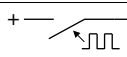


Connection diagram

The connection diagram in the data sheet provides information on product selection.

For the electrical connection, only use the installation instructions or the operating manual.

Digital inputs

Signal type	Input	Terminals	Symbol and terminal designation
Digital signal DC 0/24 V Reference potential L- (GND) required.	1 to 16	1 and L- to 16 and L-	0/24 V  1 to 16 L-
Or:			
External voltage DC 24 V via potential-free contact Reference potential L- (GND) required.	1 to 16	1 and L- to 16 and L-	24 V  1 to 16 L-

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Order details

(1) Basic type	
705135	16-channel digital input module
(2) Basic type extension	
01	DC 0/24 V
(3) Version	
0	Standard version
(4) Electrical connection	
66	Print terminal
67	Plug-in terminal (only available upon request, minimum order quantity required)
(5) Voltage supply	
36	DC 24 V +25/-20 %
(6) Extra codes	
000	None
062	DNV® approval ^a

^a The power supply unit used must also have a DNV® approval (e.g. type 705090).

Order code (1) (2) (3) (4) (5) (6)
 Order example 705135 / 01 - 0 - 66 - 36 / 000

Scope of delivery

1 module in the ordered version
1 documentation

Accessories

Designation	Part no.
10 connector bars for increased vibration and shock resistance (2 bars are required for connecting 2 modules)	30065481
10 inscription labels for labeling the module	30065497

Trademark information

All trademarks and trade and company names used are the property of their rightful owners or authors.

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Module overview of the automation system

Central processing units

- JUMO variTRON 300
Data sheet 705003
705163 communication module required.
- JUMO variTRON 500
Data sheet 705002
705171 system module required.
- JUMO variTRON 500 touch
Data sheet 705004
705163 communication module required.

Input/output modules

- 16-channel digital input module
705135 data sheet
- 4-channel digital output module (relay)
705143 data sheet
- 16-channel digital output module
705145 data sheet
- Input and output modules from the 7050xx series (JUMO mTRON T/variTRON)
(see data sheet of the central processing unit)

Special modules

- 2-channel communication module
705162 data sheet
- 3-channel communication module
705163 data sheet
- System module
705171 data sheet

Panels

- JUMO variTRON web panels
Data sheet 705070

24 V power supply units

- Type 705090/03-33 (3.4 A)
705090 data sheet
- Type 705090/05-33 (5 A)
705090 data sheet
- Type 705090/10-33 (10 A)
705090 data sheet