

**JUMO GmbH & Co. KG**  
 Delivery address: Mackenrodtstraße 14  
 36039 Fulda, Germany  
 Postal address: 36035 Fulda, Germany  
 Phone: +49 661 6003-0  
 Fax: +49 661 6003-607  
 E-mail: mail@jumo.net  
 Internet: www.jumo.net

**JUMO Instrument Co. Ltd.**  
 JUMO House  
 Temple Bank, Riverway  
 Harlow, Essex CM20 2DY, UK  
 Phone: +44 1279 635533  
 Fax: +44 1279 635262  
 E-mail: sales@jumo.co.uk  
 Internet: www.jumo.co.uk

**JUMO Process Control, Inc.**  
 6733 Myers Road  
 East Syracuse, NY 13057, USA  
 Phone: 315-437-5866  
 1-800-554-5866  
 Fax: 315-437-5860  
 E-mail: info.us@jumo.net  
 Internet: www.jumousa.com



# JUMO mTRON T Measuring, Control, and Automation System

## Digital input/output module 12-channel

### Brief description

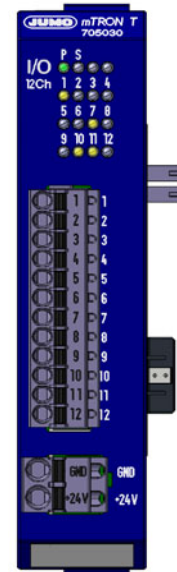
The module is equipped with 12 channels which can optionally be configured as digital inputs or digital outputs. The digitized input states are available in the system for further processing. The digital outputs are actuated via the system bus by digital signals (assignment via the connection list or directly by the PLC).

The load current of up to 6 A (12 × max. 500 mA) must be provided via the terminals +24V/GND at the front.

LEDs are used to indicate applied voltage supply, the module operating status, as well as the digital input/output status.

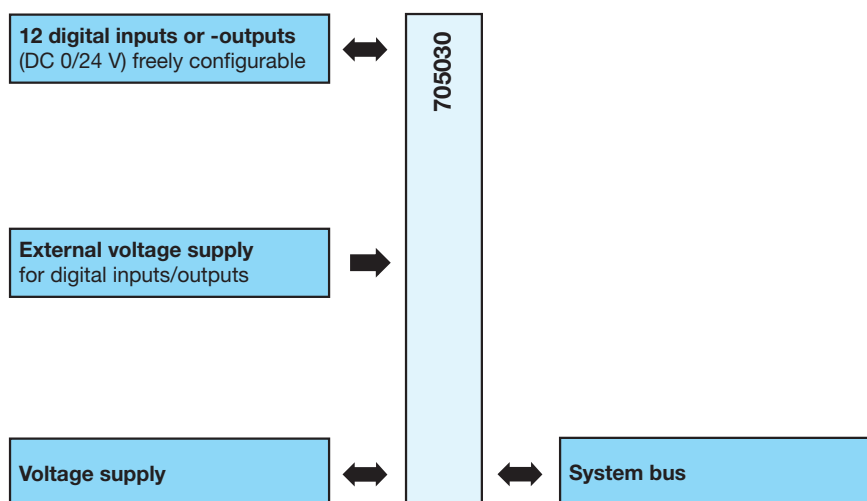
A setup program can be used to comfortably configure the digital input/output module.

For service work, the module insert can be easily pulled out of the case at the front. The case including the bus PCB remains mounted on the DIN rail.



Type 705030/...

### Block diagram



### Features

- 12 digital inputs or outputs
- Channels are configurable individually as digital input DC 0/24 V or digital output DC 0/24 V / max. 500 mA
- Supply of external voltage for digital inputs/ outputs through terminal at the front
- Automatic configuration after the module insert has been exchanged (Plug and Play)
- Connection of the inputs/outputs at the front
- Removable terminal strips with Push-In technology
- Quick wiring of operating voltage and system bus due to easy module connection

Approval/approval marks (see “Technical data”)



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## Technical data

### Digital inputs and outputs

Number	12
Digital inputs	
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	
Output signal	DC 0/24 V (depending on external voltage supply)
Current	Max. 500 mA per output, short-circuit proof

### Electrical data

Voltage supply	For module electronics
Connection	Lateral (feed via base unit or router module)
Voltage	DC 24 V +25/-20 %
Residual ripple	5 %
External voltage supply	For digital inputs/outputs
Connection	At the front
Voltage	DC 24 V +25/-20 % SELV
Current	Max. 6 A
Current consumption	90 mA (module electronics only; at DC 19.2 V)
Power consumption	2 W (module electronics only)
Inputs or outputs (terminals 1 to 12) and external voltage supply (2-pole terminal GND/+24 V)	At the front (removable terminal strips with Push-In technology)
Conductor cross section on terminals 1 to 12	
Wire or strand without ferrule	Min. 0.14 mm <sup>2</sup> , max. 1.5 mm <sup>2</sup>
Strand with ferrule	Without plastic collar: Min. 0.25 mm <sup>2</sup> , max. 1.5 mm <sup>2</sup>
Strand with ferrule	With plastic collar: Min. 0.25 mm <sup>2</sup> , max. 0.5 mm <sup>2</sup>
Stripping length on terminals 1 to 12	9 mm
Conductor cross section on terminals GND and +24 V	
Wire or strand without ferrule	Min. 1.5 mm <sup>2</sup> , max. 2.5 mm <sup>2</sup>
Strand with ferrule	Min. 1.5 mm <sup>2</sup> , max. 2.5 mm <sup>2</sup>
2× strand with twin ferrule with plastic collar	1.5 mm <sup>2</sup>
Stripping length on terminals GND and +24 V	10 mm
Electrical safety	Acc. to DIN EN 61010-1 Overvoltage category III, pollution degree 2
Electromagnetic compatibility	Acc. to DIN EN 61326-1
Interference emission	Class A – only for industrial use –
Interference immunity	Industrial requirements

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**Case and ambient 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 x H x D)	22.5 mm x 103.6 mm x 101.5 mm (without connection elements)
Weight	Approx. 130 g
Protection type	IP20, acc. 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 (climatic class 3K3 acc. to DIN EN 60721-3-3 with extended temperature and humidity range)
Site altitude	Up to 2000 m above sea level
Mechanical ambient conditions <sup>a</sup>	Classification acc. to DIN EN 60721-3-3, table 6, class 3M2

<sup>a</sup> Test conditions are listed in the System Description B 705000.8.

**Approval/approval marks**

Approval mark	Testing agency	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

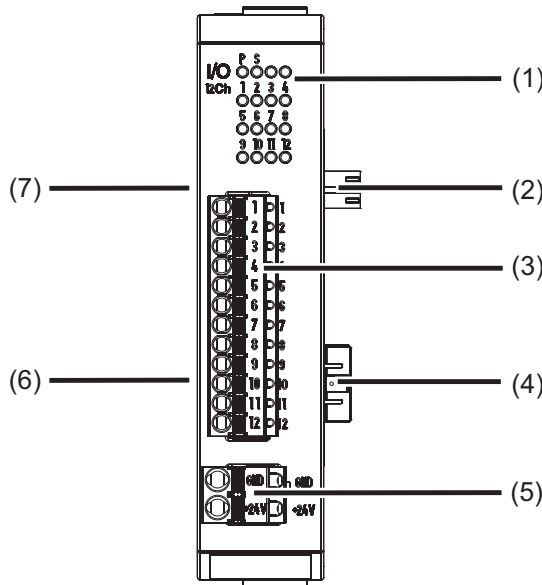
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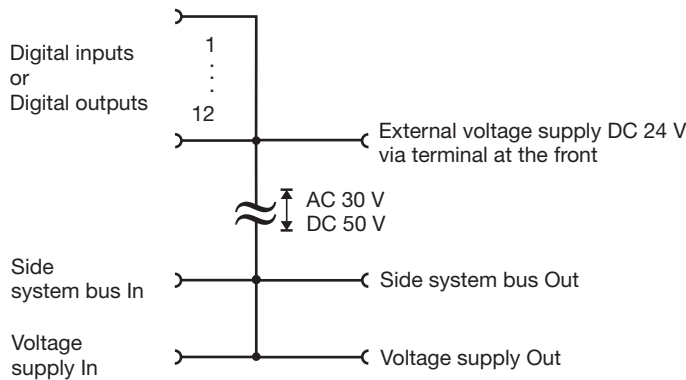


## Display and connection elements



- (1) Status displays (LED)  
 P = Voltage supply  
 S = Status  
 1 to 12 = Digital input/output  
 (LED is lit: Active)
- (2) Voltage supply Out, DC 24 V
- (3) Digital inputs/outputs
- (4) Side system bus Out
- (5) External voltage supply DC 24 V
- (6) Side system bus In
- (7) Voltage supply In, DC 24 V

## Electrical isolation



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## Connection diagram

The connection diagram included in the data sheet provides initial information about the connection options. Only use the installation instructions or the operating manual for the electrical connection. The know-how and the correct technical implementation of the safety warnings/instructions contained in these documents are the prerequisite for the installation, electrical connection, and initial start as well as for the safety during operation.

### Digital input

The connection depends on the configuration (input or output).

Connection	Input	Terminals	Symbol and terminal designation
Apply signal DC 0/24 V to terminals 1 to 12  Ground reference via GND terminal required!	1 2 3 4 5 6 7 8 9 10 11 12	1 and GND 2 and GND 3 and GND 4 and GND 5 and GND 6 and GND 7 and GND 8 and GND 9 and GND 10 and GND 11 and GND 12 and GND	
Or:			
Switch DC 24 V from terminal +24 V to terminals 1 to 12 via floating contact.  External voltage supply DC 24 V via terminals +24 V and GND required!	1 2 3 4 5 6 7 8 9 10 11 12	1 and +24 V 2 and +24 V 3 and +24 V 4 and +24 V 5 and +24 V 6 and +24 V 7 and +24 V 8 and +24 V 9 and +24 V 10 and +24 V 11 and +24 V 12 and +24 V	

### Digital outputs

The connection depends on the configuration (input or output).

Connection	Output	Terminals	Symbol and terminal designation
Output signal: DC 0/24 V / maximum 500 mA  External voltage supply DC 24 V via terminals +24 V and GND required!	1 2 3 4 5 6 7 8 9 10 11 12	1 and GND 2 and GND 3 and GND 4 and GND 5 and GND 6 and GND 7 and GND 8 and GND 9 and GND 10 and GND 11 and GND 12 and GND	

### External voltage supply

Connection	Terminals	Symbol and terminal designation
DC 24 V	GND und +24 V	

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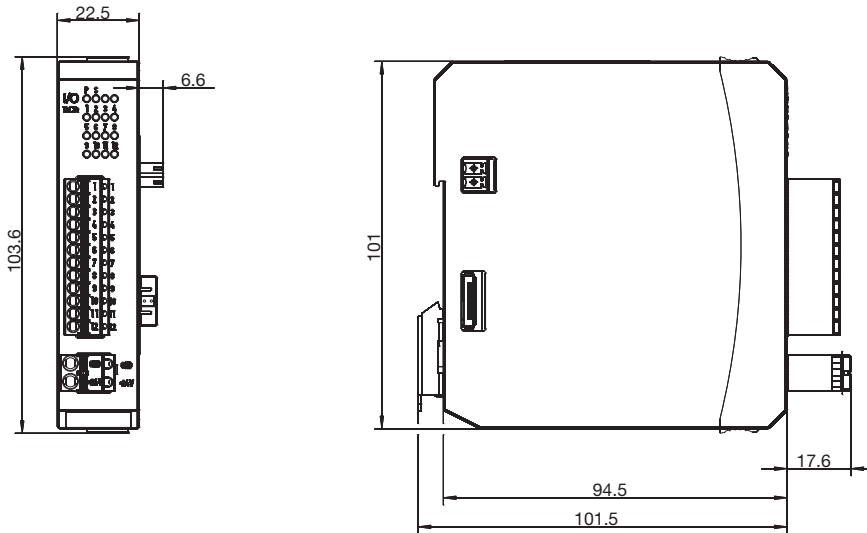
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## Dimensions



## Module overview

### Base units

- Central processing unit  
Data sheet 705001

### Input/output modules

- Multichannel controller module  
Data sheet 705010
- Relay module 4-channel  
Data sheet 705015
- Analog input module 4-channel  
Data sheet 705020
- Analog input module 8-channel  
Data sheet 705021
- Digital input/output module 12-channel  
Data sheet 705030

### Special modules

- Router module  
Data sheet 705040

### Operating, visualization, recording

- Multifunction panel 840  
Data sheet 705060

### Power supply units

- 705090/05-33  
Data sheet 705090
- 705090/10-33  
Data sheet 705090

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## Order details

<b>(1) Basic type</b>	
705030	Digital input/output module 12-channel
<b>(2) Voltage supply</b>	
36	DC 24 V +25/-20 %

Order code  /   
Order example 705030 / 36

## Scope of delivery

1 digital input/output module, 12-channel
1 Installation Instructions B 705030.4

## General accessories

Article	Part no.
JUMO mTRON T system manual, English	00575577
MiniDVD with setup program (full version), programming software CODESYS V3, and detailed documentation; incl. USB cable	00569494
PC Evaluation Software PCA3000	00431882
Release automatic print for PC Evaluation Software PCA3000	00505548
PCA Communication Software PCC	00431879
Plant Visualization Software JUMO SVS3000: See data sheet 700755	-
USB cable A-plug mini-B-plug 3 m	00506265