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# JUMO mTRON T Measuring, Control, and Automation System

## Router module

### Brief description

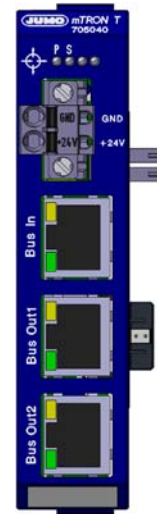
The router module is used to achieve decentralization within the automation system, which means that the input/output modules are dispersed to several DIN rails/switch cabinets. A distance of up to 100 m can lie between two router modules, between a router module and a base unit, or between a router module and a multifunction panel. A maximum of 30 router modules and a maximum of 30 input/output modules is possible in a system.

LEDs are used to indicate applied voltage supply and the operating status of the module.

The electrical connection of the voltage supply for the router module is carried out at the front through a removable terminal strip.

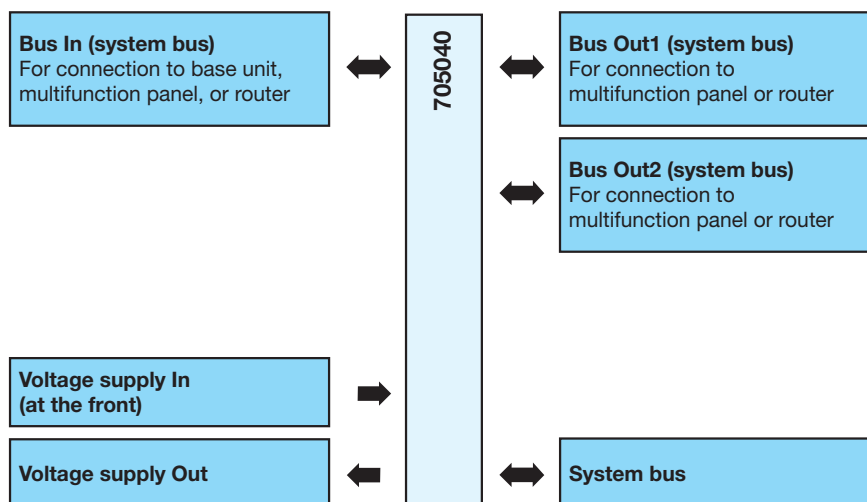
No configuration of the router module is required. The router module is simply integrated into the overall system by the setup program. For special applications such as hot-connect the address of the router module can be set by rotary coding switches.

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 705040/...

### Block diagram



### Features

- RJ45 system bus connections at the front (1 × Bus In, 2 × Bus Out)
- Support of distributed module arrangement
- Addressable by rotary coding switches for special applications
- Electrical isolation of the interfaces at the front
- Supply of operating voltage
- Quick wiring of operating voltage and system bus due to easy module connection

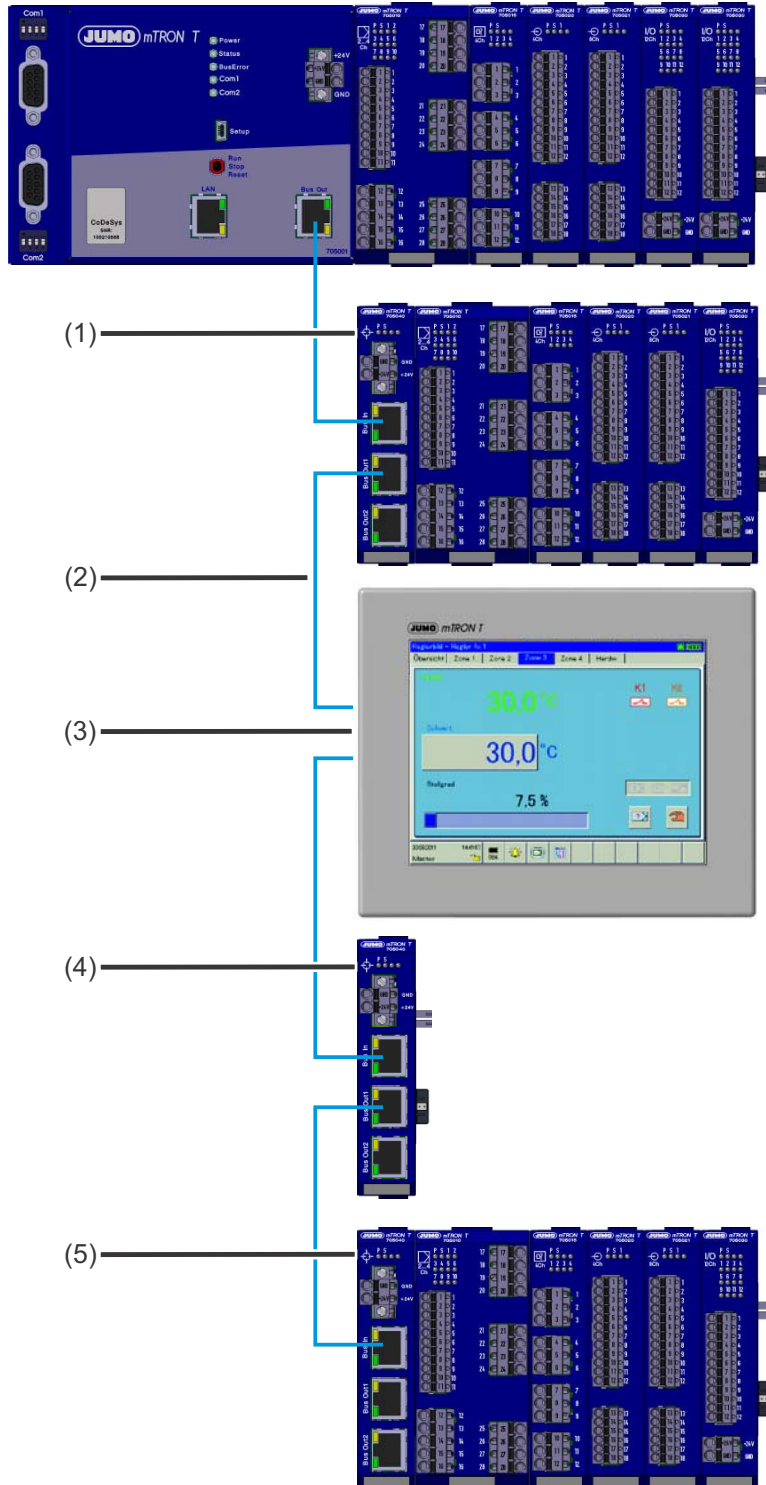
### Approval/approval marks (see “Technical data”)





# Description

## Connection example



- (1) Router module with downstream modules
- (2) Network cable (patch or crossover cable), at least CAT5 (S/FTP); distance per connection up to 100 m
- (3) Multifunction panel; instead of a router module
- (4) Router module without downstream modules to increase the range
- (5) Router module with downstream modules

In the shown connection example the voltage supply of the central processing unit, the router modules, and the multifunction panel are not taken into consideration.

Cross-linking JUMO mTRON T system bus is only possible with the shown devices (closed system); conventional Ethernet switch technology cannot be used.

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## Technical data

### Interfaces

Bus In (system bus) Application Number Connection Connection cable Cable length	For connection of a base unit, a router module or a multifunction panel 1 At the front, RJ45 socket Network cable (patch cable or crossover cable), at least CAT5 (S/FTP) Up to 100 m
Bus Out1 and Bus Out2 (system bus) Application Number Connection Connection cable Cable length	For connection of further router modules or a multifunction panel 2 At the front, RJ45 socket Network cable (patch or crossover cable), at least CAT5 (S/FTP) Up to 100 m

### Electrical data

Voltage supply Connection Voltage input Residual ripple	At the front (removable 2-pole terminal strip with Push-In technology) DC 24 V +25/-20 % SELV 5 %
Current consumption	100 mA (at DC 19.2 V) Current consumption of lined-up modules also has to be considered (see „Hardware configuration“ in the setup program)!
Power consumption	2 W
Conductor cross section (voltage supply) Wire or strand without ferrule Strand with ferrule 2 x strand with twin ferrule with plastic collar	Min. 1.5 mm <sup>2</sup> , max. 2.5 mm <sup>2</sup> Min. 1.5 mm <sup>2</sup> , max. 2.5 mm <sup>2</sup> 1.5 mm <sup>2</sup>
Stripping length	10 mm
Electrical safety	Acc. to DIN EN 61010-1 Overvoltage category III, pollution degree 2
Electromagnetic compatibility Interference emission Interference immunity	Acc. to EN 61326-1 Class A – only for industrial use – Industrial requirements

### 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. 125 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 Descripton B 705000.8.

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## 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
DNV GL	DNV GL	TAA000016N	Class Guideline DNVGL-CG-0339	all types; a power supply unit with DNV GL or GL type approval is required (e.g. type 705090)

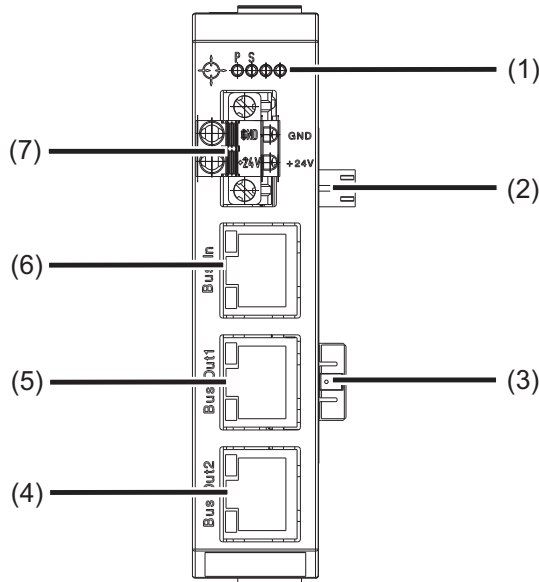
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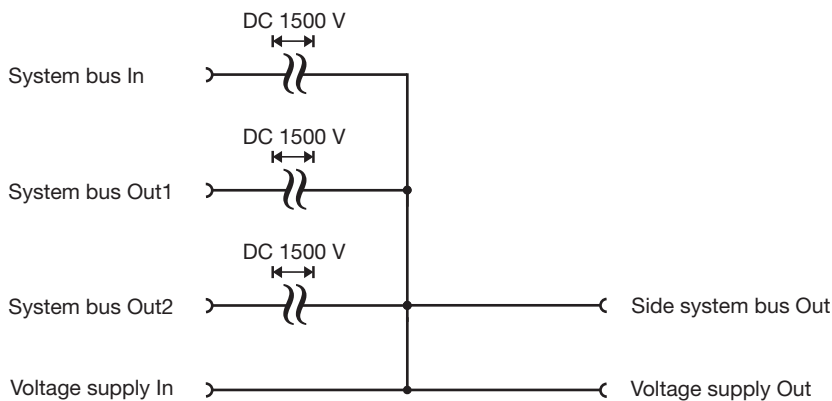


## Display and connection elements



- (1) Status displays (LED)
- (2) Voltage supply Out, DC 24 V
- (3) Side system bus Out
- (4) System bus Out2
- (5) System bus Out1
- (6) System bus In
- (7) Voltage supply In, DC 24 V

## Electrical isolation



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


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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.

### Interfaces

Connection	Designation	Connection element
System bus In (input)	Bus In	 1 TX+ transmit data + 2 TX- transmit data - 3 RX+ receive data + 6 RX- receive data -
System bus Out1 (output)	Bus Out1	 1 TX+ transmit data + 2 TX- transmit data - 3 RX+ receive data + 6 RX- receive data -
System bus Out2 (output)	Bus Out2	 1 TX+ transmit data + 2 TX- transmit data - 3 RX+ receive data + 6 RX- receive data -

### Voltage supply

Connection	Terminals	Symbol and terminal designation
DC 24 V	+24V and GND	+ ———— ○ +24V $U_x$ - ———— ○ GND

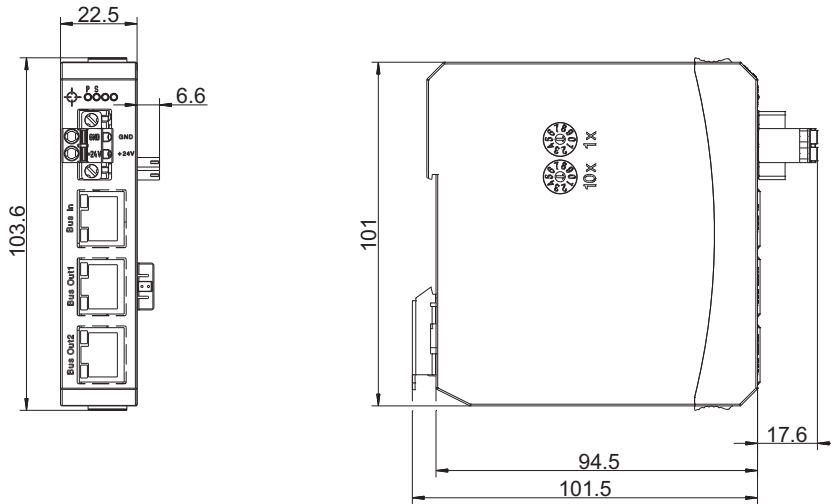
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## Dimensions



## 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
- Analog output module 4-channel  
Data sheet 705025
- Digital input/output module 12-channel  
Data sheet 705030
- Thyristor power controller type 70906x  
Data sheet 709061, 709062, 709063

### Special modules

- Router module  
Data sheet 705040

### Operating, visualization, recording

- Multifunction panel 840  
Data sheet 705060
- Operating panels  
Data sheet 705065

### 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>	
705040	Router module
<b>(2) Voltage supply</b>	
36	DC 24 V +25/-20 %
<b>(3) DNV GL approval</b>	
000	Without approval
062	With DNV GL approval <sup>a</sup>

<sup>a</sup> The power supply unit used must also have a DNV GL or GL type approval (e.g. type 705090).

<b>Order code</b>	<input type="text" value="(1)"/>	/	<input type="text" value="(2)"/>	/	<input type="text" value="(3)"/>
<b>Order example</b>	705040	/	36	/	000

## Scope of delivery

1 router module
1 cover for system bus
2 screw-on end clamps for DIN rail
1 Installation Instructions

## General accessories

Description	Part no.
JUMO mTRON T system manual, English	00575577
Setup program with program editor JUMO mTRON T (on MiniDVD), incl. USB cable (A-plug to mini-B-plug, 3 m)	00569494
Program editor JUMO mTRON T (on MiniDVD), incl. USB cable (A-plug to mini-B-plug, 3 m)	00622333
PCA3000/PCC JUMO software package	00431884
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	00506252

Content of the Mini-DVD:

- Setup program with program editor JUMO mTRON T in case of part no. 00569494
- Program editor JUMO mTRON T in case of part no. 00622333
- CODESYS programming software (free version)
- CODESYS Repository Package - Operating panels (free version)
- GSD file JUMO mTRON T - CPU (free version)
- PC Evaluation Software PCA3000 (30-day trial version)
- PCA Communication Software PCC (30-day trial version)
- Documentation in PDF format