

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

3-channel communication 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

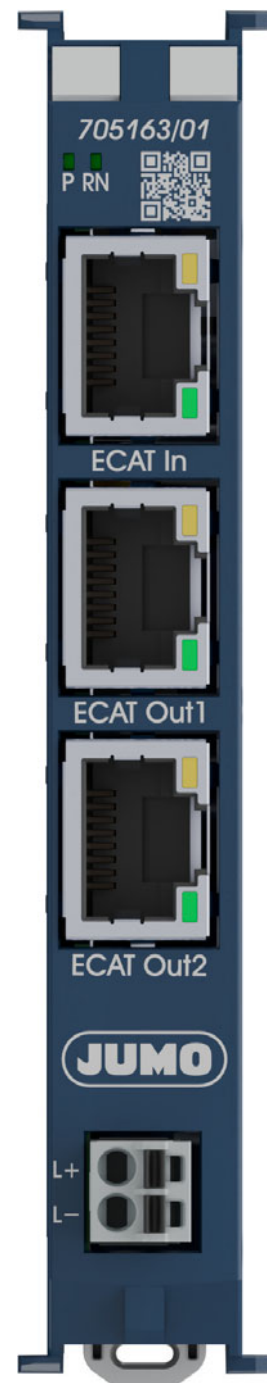
- First module on an additional DIN rail for connecting further modules
- System bus expansion via RJ45 sockets on the front (1 × EtherCAT In, 2 × EtherCAT Out)
- Decentralized module assignment supported up to distance of 100 m
- Supply of operating voltage on the front
- Terminal strip with PUSH IN technology
- Two LEDs for displaying the module status (Power/Run)
- Increased vibration and shock resistance due to optional connector bars

Description

The 3-channel communication module (705163) is a module of the JUMO I/O system (7051xx) and provides 1 input and 2 outputs (RJ45) for the system bus of the JUMO variTRON (7050xx) automation system on the front side. The communication module has a supply terminal for its own voltage supply and that of the connected input and output modules. The communication module is suitable for indoor use and is installed on a DIN rail inside a control cabinet.

The 3-channel communication module is intended for operation on a central processing unit of the JUMO variTRON automation system. A patch cable provides the connection to the system bus. An upstream 2-channel communication module (705162) is required for the connection to JUMO variTRON 500. The communication module can be directly connected to the JUMO variTRON 300 and JUMO variTRON 500 touch.

The 3-channel communication module can be operated on a third-party PLC if it supports the JUMO system bus.






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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

Interfaces

System bus (input, front side)	
Designation	ECAT In
Type	RJ45
Number	1
Connecting cable	Network cable (patch or crossover cable), at least CAT5 (S/FTP)
Application	Connection to an ECAT Out interface of a different communication module
System bus (output, front side)	
Designation	ECAT Out1, ECAT Out2
Type	RJ45
Number	2
Connecting cable	Network cable (patch or crossover cable), at least CAT5 (S/FTP)
Application	Connection to the ECAT In interface of a different communication module

Electrical data

External voltage supply	For module electronics and input and output modules
Connection	At the front (terminal strip, 2-pole with PUSH IN technology)
Voltage	DC 24 V +25/-20 % SELV
Admissible current	Max. 8 A (total of the current consumption of the module electronics and the connected input and output modules)
Current consumption (module electronics only)	0.125 A (at 19.2 V)
Power consumption (module electronics only)	2.5 W
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
Electrical safety	According to DIN EN 61010-1:2020 Overvoltage category III, pollution degree 2

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Electrical isolation

	a	Functional galvanic isolation for the connection of SELV or PELV electrical circuits
	1	EtherCAT (ECAT) Out1 system bus
	2	EtherCAT (ECAT) Out2 system bus
	3	EtherCAT (side) Out system bus
	4	Voltage supply (side) Out
	5	External voltage supply
	6	EtherCAT (ECAT) In1 system bus

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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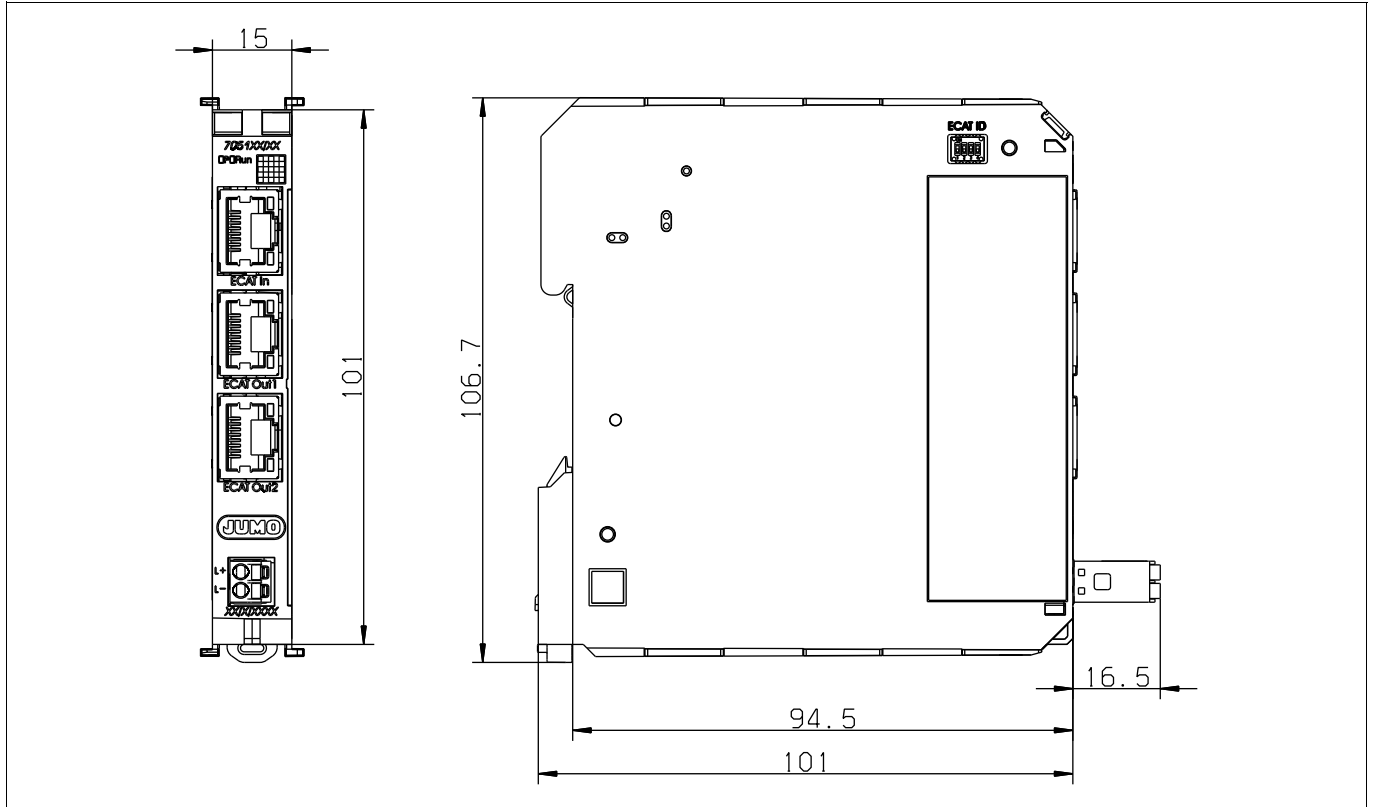
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Dimensions

Module with pluggable terminals (circuit board plug connectors)



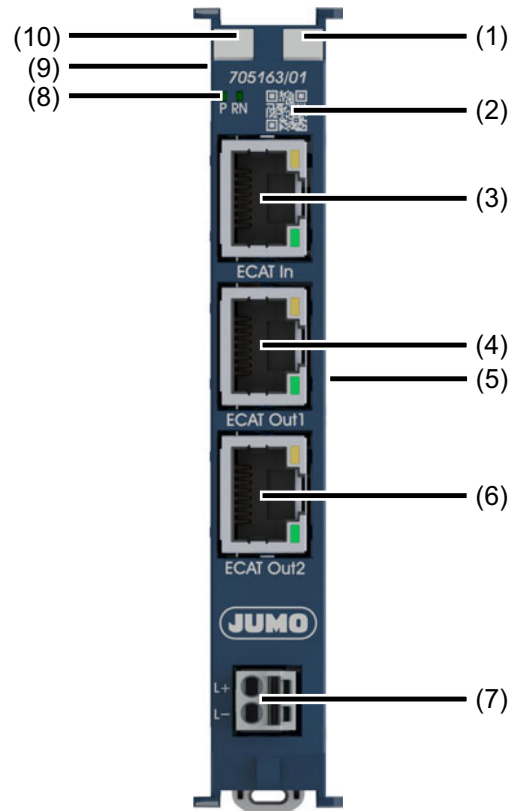
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Display, operating, and connection elements



- 1 Space for inscription label (not included in scope of delivery)
- 2 QR code (weQR-Code (Weblink zur JUMO-Produktseite) link to JUMO product page)
- 3 EtherCAT (ECAT) In system bus
- 4 EtherCAT (ECAT) Out1 system bus
- 5 Plug connector (socket, side) for Out voltage supply and EtherCAT Out system bus
- 6 EtherCAT (ECAT) Out2 system bus
- 7 Connection terminals for external voltage supply
- 8 Status display of the module (P = Power, RN = Run)
- 9 DIP switch (4-fold, side) for setting the alias device address
- 10 Space for inscription label (not included in scope of delivery)

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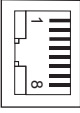
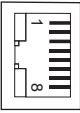
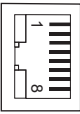


Connection diagram

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.

Interfaces

Connection	Designation	Connection element	Assignment
System bus In (input)	ECAT In		1 TX+ Transmission data + 2 TX- Transmission data - 3 RX+ Received data + 6 RX- Received data -
System bus Out1 (output)	ECAT Out1		1 TX+ Transmission data + 2 TX- Transmission data - 3 RX+ Received data + 6 RX- Received data -
System bus Out2 (output)	ECAT Out2		1 TX+ Transmission data + 2 TX- Transmission data - 3 RX+ Received data + 6 RX- Received data -

External voltage supply

The external voltage supply is required to operate the communication module and the connected input and output modules.

Voltage	Terminals	Symbol and terminal designation
DC 24 V SELV (front)	L+ (+24 V) and L- (GND)	+ ———— ○ L+ U_x - ———— ○ L-

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Order details

(1) Basic type	
705163	3-channel communication module
(2) Basic type extension	
01	System bus router module
(3) Version	
0	Standard version
(4) Voltage supply	
36	DC 24 V +25/-20 %
(5) 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 / - - /
 Order example 705163 / 01 - 0 - 36 / 000

Scope of delivery

Designation
1 3-channel communication module
2 screw-on end clamps for DIN rail
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