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# Analogue output module

## Brief description

The unit is a module of the JUMO mTRON control and automation system. The plastic housing measures 91 mm x 85.5 mm x 73.5 mm (W x H x D) and is mounted on a standard rail.

A logic input captures an external process status and passes it on to the LON network. The module has two isolated analogue outputs which are operated via the LON bus and whose output signals are adjustable.

The module is linked to other modules via the LON<sup>1</sup> interface.

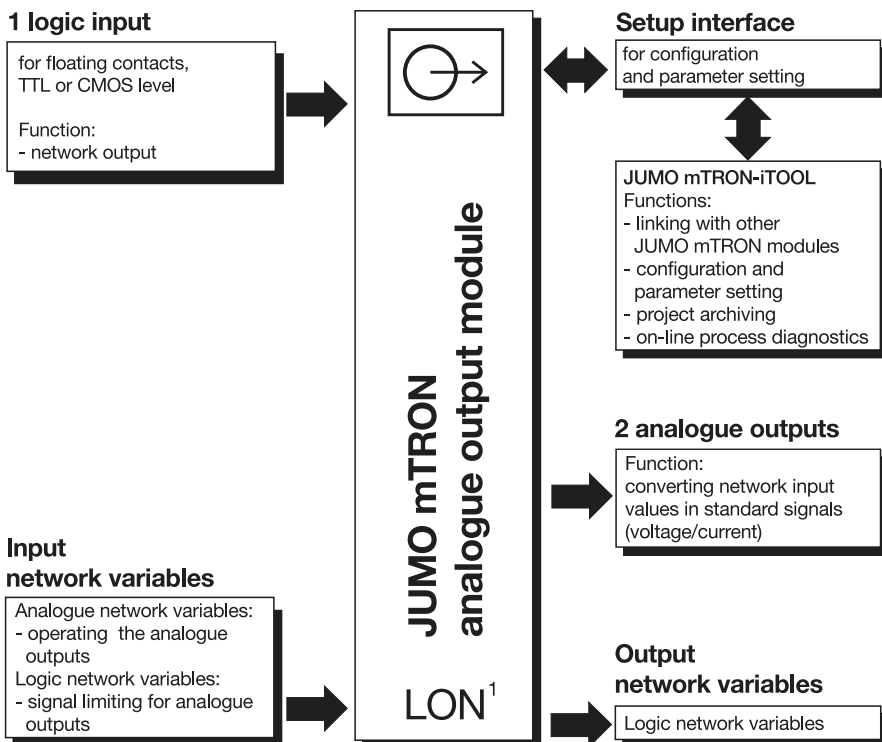
The module incorporates a network connection for communication and data interchange between the modules. A screened twisted pair is used as transmission line. There is a set-up interface for module parameter setting and configuration from a PC under the JUMO mTRON-iTOOL project design software.

The electrical connections are made through plug connectors with screw terminals.



Type 704025/0-..

## Block structure

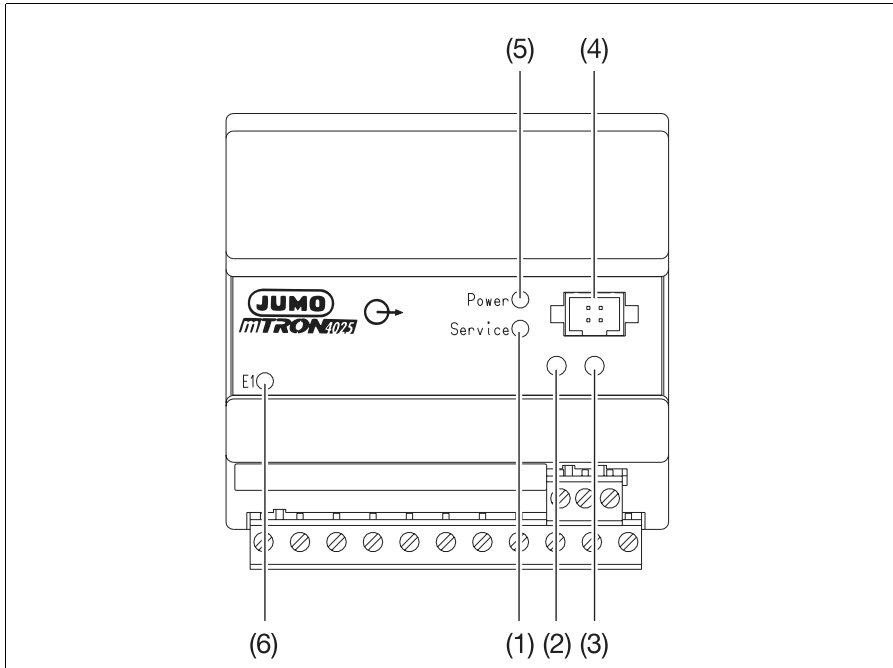


## Features

- **Isolated outputs**  
 The analogue output module has two isolated analogue outputs (current 0 – 20mA or 4 – 20mA / voltage 0 – 10V or 2 – 10V)
- **Scaling**  
 The analogue network inputs can be freely scaled using two parameters
- **Limiting**  
 The analogue outputs can be limited through two parameters.
- **Setup interface**  
 For configuration and setting of parameters, the module is linked to a PC via a PC interface
- **Plug & Play function**  
 Problem-free replacement of modules without re-configuration

1. LON<sup>1</sup> = Local Operating Network.  
 Registered trademark of the  
 ECHELON Corporation.

## Displays and controls



(1)	<b>Service LED, red</b> - lights up on operating fault - flashes when the mechanical connection to the module from JUMO mTRON-iTOOL or the operating unit is being checked by a test signal ("wink")	(4)	<b>Setup interface</b> for the PC interface line which links the module to the PC
(2)	<b>Switch</b> for the termination resistance of the LON network	(5)	<b>Power LED, green</b> lights up when the supply is switched on
(3)	<b>Installation key</b> the module reports to the JUMO mTRON-iTOOL project design software or the operating unit	(6)	<b>Logic input, yellow</b> lights up when the floating contact at logic input E1 is closed

## Technical data

### Hardware inputs

**Sampling time:**  
210msec for all inputs

### Logic input

activation: floating contact  
Function:  
- capturing a process status

### Hardware outputs

#### Analogue outputs

Signal	Load/Burden
0 – 10 V	> 500Ω
2 – 10 V	> 500Ω
0 – 20mA	< 500Ω
4 – 20mA	< 500Ω

Accuracy: 0.25 %  
Resolution: 16bit

Function:  
- converting network input values into standard signals

### Input network variables

#### Analogue network variables

Function:  
- operating the analogue outputs

#### Logic network variables

Function:  
- activating the signal limit of the analogue outputs

### Output network variables

#### Logic network variables

Output cycle: controlled by event, but at least every 14sec  
Function:  
- monitoring the network inputs and the range limit (combined alarm)

## General data

### Electrical safety

as per EN 61010-1  
Overvoltage category: II  
Pollution degree: 2

## Environmental influences

Operating and ambient temperature:  
0 to 55°C  
Permitted storage temperature:  
-40 to +70°C  
Relative humidity: rH 80 % max.

Electromagnetic compatibility  
as per EN 61326-1  
- interference emission:  
Class A - Only for industrial use -  
- interference immunity:  
to industrial requirements

## Housing

Material: plastic, self-extinguishing  
Flammability Class: UL 94 VO  
Protection: IP20 (to EN 60 529)  
Mounting: on standard rail

## Supply

110 – 240 V AC +10/-15%, 48 – 63Hz,  
or 20 – 53V AC/DC, 48 – 63Hz  
Power consumption: 5 VA max.

## Network (LON interface)

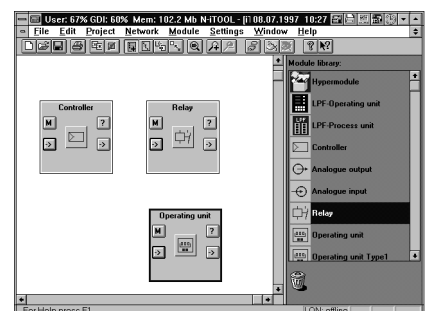
Transceiver: free topology FTT-10A  
Topology: ring, star, line or mixed structure  
Baud rate: 78 kbaud  
Max. lead length (depending on lead type):  
line: 2700 m  
star: 500 m  
ring: 500 m  
mixed: 500 m  
Max. number of modules: 64

## Operation and project design

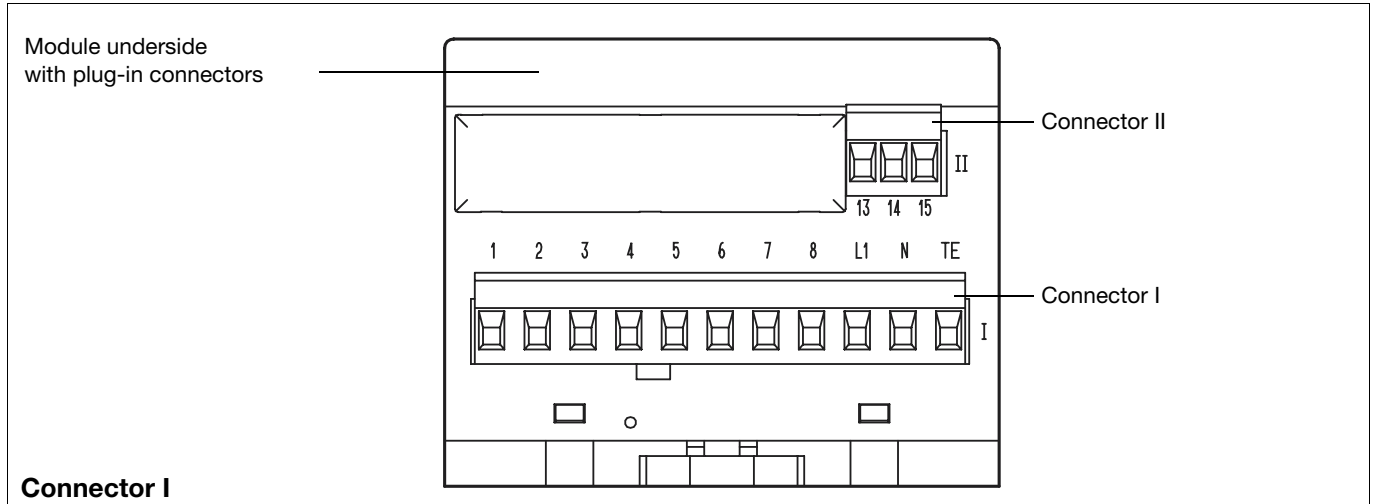
Operation, parameter setting and configuration of JUMO mTRON modules can be carried out from the JUMO mTRON operating unit.

The JUMO mTRON-iTOOL project design software permits convenient design and start-up of a JUMO mTRON system.

The projects can be archived and documented. Individual modules are linked via LON by assigning network variable (NV) names



### Connection diagram



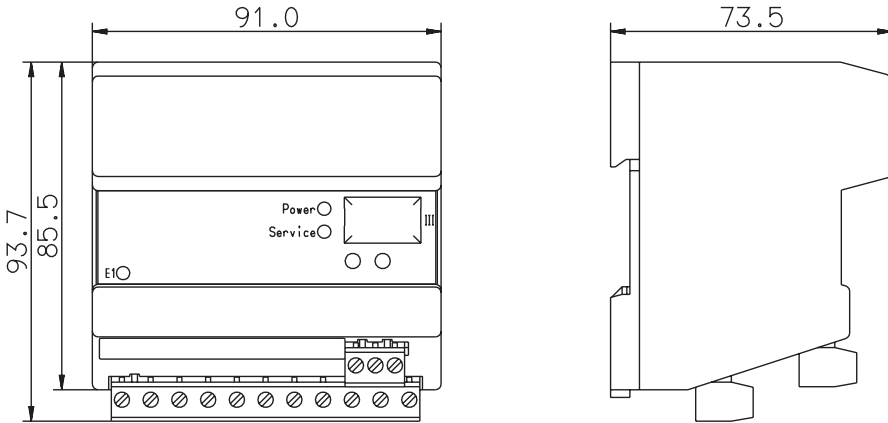
#### Connector I

Connection for	Terminals		Notes	Diagram
<b>Analogue outputs</b>	<b>Output 1</b>	Output 2		
0 – 10V, 2 – 10V 0 – 20mA, 4 – 20mA	I_2+ I_1-	I_4+ I_3-		
<b>Logic input</b> floating contact	I_5 I_6			
<b>Supply</b> as label	<b>AC</b>	<b>DC</b>		
	I_L1line I_Nneutral I_TEtechnical earth	I_L1aþy I_Npolarity I_TEtechnical earth		

#### Connector II

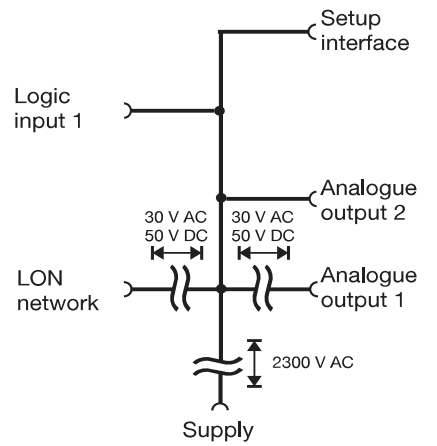
Connection for	Terminals	Notes	Diagram
<b>LON interface</b>	II_13 = TE	screen	
	II_14 = Net_A II_15 = Net_B	any polarity	

**Dimensions**



mm	inch
73.5	2.89
85.5	3.37
91.0	3.58
93.7	3.69

**Isolation**



**Ordering details**

(1)  
704025/0-..

(1) Supply . .

Type	Code
110 – 240V AC +10/-15%, 48 – 63Hz	<b>23</b>
20 – 53V AC/DC, 48 – 63Hz	<b>22</b>

**Standard accessory**

1 Installation Instructions M 70.4025.4

**Accessories**

**PC interface with TTL/RS232C converter**

for connecting the module to a PC, length 2m.  
Sales No. 70/00301315

**Project design software JUMO mTRON-iTOOL**

Using the JUMO mTRON-iTOOL project design software, the modules can be designed graphically on the PC. The user is able to link modules of the JUMO mTRON family and to configure the application-specific parameters.

System Manual JUMO mTRON  
Documentation of configuration, parameter setting and installation of the modules.  
Sales No. 70/00334336

**JUMO mTRON modules**

**Controller module**  
Data Sheet 70.4010

**Relay module**  
Data Sheet 70.4015

**Analogue input module**  
Data Sheet 70.4020

**Analogue output module**  
Data Sheet 70.4025

**Logic module**  
Data Sheet 70.4030

**Operating unit**  
Data Sheet 70.4035

**Communication module**  
Data Sheet 70.4040

**Project design software JUMO mTRON-iTOOL**  
Data Sheet 70.4090