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## Operating unit

### Brief description

The operating unit is a module of the JUMO mTRON control and automation system. The housing measures 151.6 mm x 80.3 mm x 43.2 mm (W x H x D) and is suitable for flush panel mounting.

As man-machine interface the operating unit provides optimum and orderly insight into the process states and the system parameters of the JUMO mTRON automation system. It has a back-lit LC display of 2 x 20 places. Only six keys are required for operating the modules and setting their parameters. The process information to be shown on the LC display is configured graphically on a PC as process window, using the setup editor of the JUMO mTRON-iTOOL project design software. Up to 16 process windows and 16 alarm windows can be created. The arrangement of the process window and the combination of the process variables in a process window can be freely determined by the user.

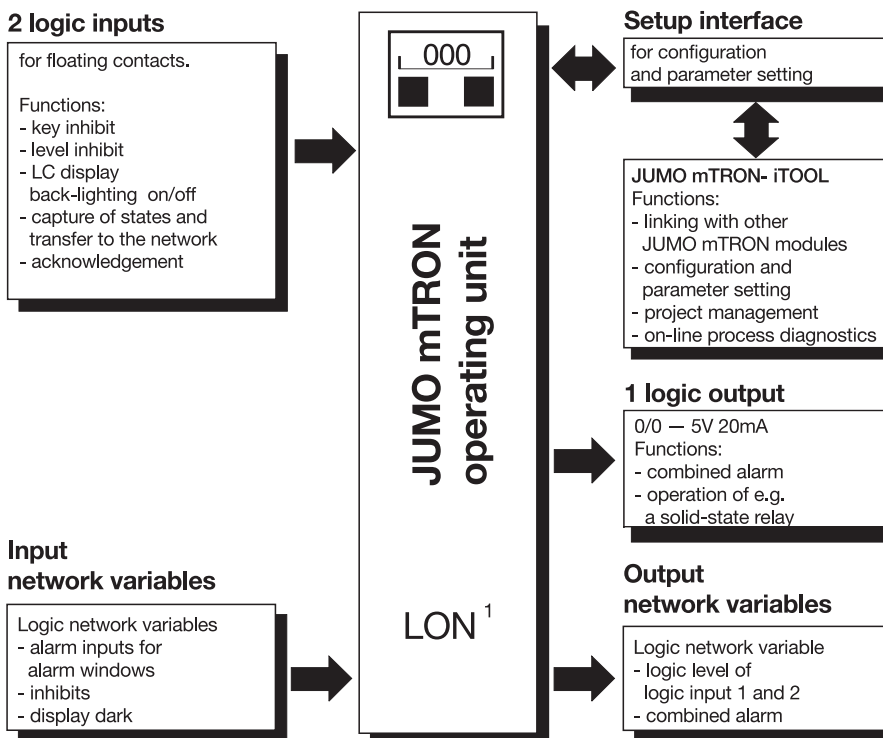
After downloading the process windows from the PC to the operating unit they appear on the LC display after pressing the key. This method of freely configuring the LC display offers process-oriented insight into the system states.

When configuring or setting parameters of a JUMO mTRON module, the appropriate instrument is selected through the operating unit. A pre-defined menu structure on the operating unit provides clear access to the functions of the module for configuration or parameter setting.



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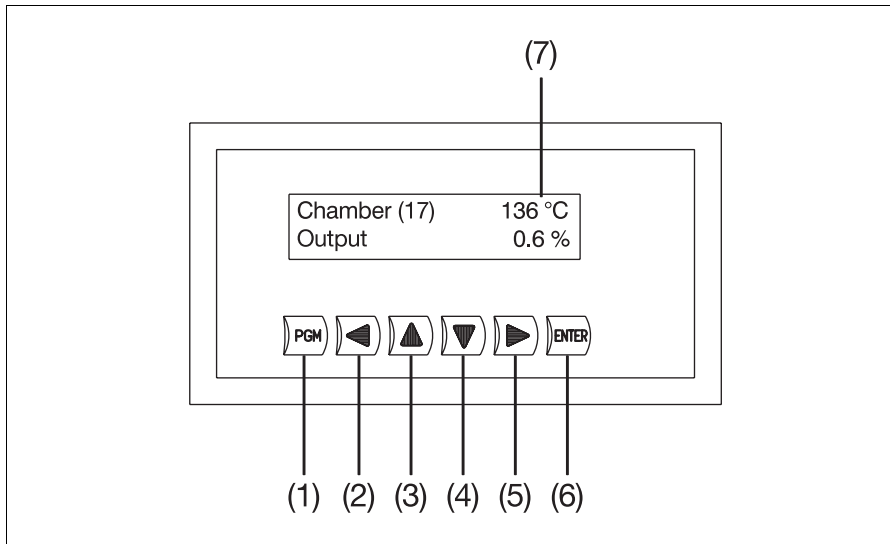
### Block structure



### Features

- **Operation and display**  
of the entire JUMO mTRON automation system through process windows
- **Configuration and parameter setting**  
on all modules of a JUMO mTRON automation system
- **Display**  
of up to 16 process-operated alarms
- **Setup interface**  
For configuration and parameter setting the module is linked to a PC via a PC interface
- **Plug & Play function**  
Problem-free replacement of modules without re-configuration

## Displays and controls



(1)	<b>PGM</b> - key for changing from operating level to parameter level	(4)	<b>Selection key</b> selects backwards between different items in the ring list (decrementing)
(2)	<b>Backwards</b> - moves one step backwards without storing	(5)	<b>Forwards</b> moves one step forwards without storing
(3)	<b>Selection key</b> selects forwards between different items in the ring list (incrementing)	(6)	<b>ENTER</b> acknowledges edited values and alarms
		(7)	<b>LC display</b> 2 x 20 places

## Housing

Front: aluminium, with front membrane  
 Flammability Class: UL 94 VO  
 Protection: IP65 (front), IP20 (rear)  
 Installation: flush panel mounting using two brackets inserted at the sides

## Supply

110 — 263V AC +10/-15%, 48 — 63Hz,  
 or 20 — 53V AC/DC, 48 — 63Hz  
 Power consumption: 10VA max.

## Network (LON interface)

Transceiver: free topology FTT-10A (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

## Technical data

### Hardware inputs

#### Logic inputs

activation: floating contacts  
 sampling time: 500msec for all inputs  
 Functions:  
 - key inhibit  
 - level inhibit  
 - LCD back lighting on/off  
 - capturing states and transferring them to the network

### Hardware outputs

#### Logic output

logic signal: 5V 40mA, short-circuit proof  
 Function:  
 - operating e.g. an external solid-state relay when conditions set in software are fulfilled (e.g. alarm states)

### Input network variables

#### Logic network variables

Functions:  
 - inhibiting operating levels (2)  
 - acknowledging alarms (1)  
 - setting the logic output (1) (combined alarm function, linked

as logical OR)  
 - activating the alarm windows (16)

### Output network variables

#### Logic network variables

Output cycle: event-controlled, but at least every 6sec  
 Functions:  
 - status of the two logic inputs  
 - status of the combined alarm

### General data Electrical safety

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

### Environmental influences

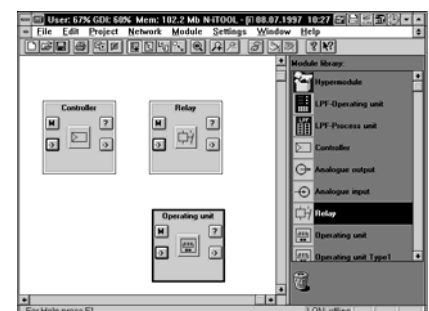
Operating and ambient temperature: 0 to 55°C  
 Permitted storage temperature: -40 to +70°C  
 Relative humidity: rH 80 % max.  
 Electromagnetic compatibility as per EN 61326-1  
 - interference emission: Class A - Only for industrial use -  
 - interference immunity: to industrial requirements

## Operation and project design

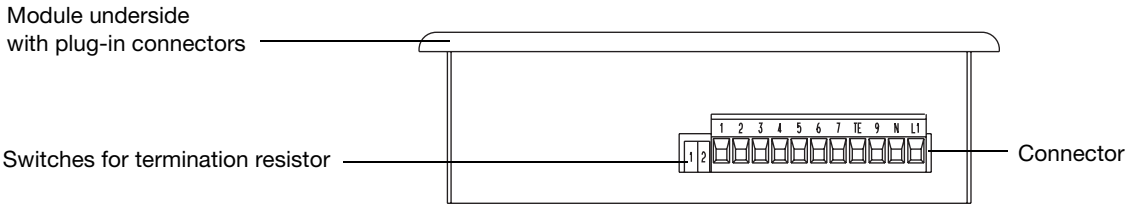
The JUMO mTRON operating unit can be used for operating, parameter setting and configuring of JUMO mTRON modules.

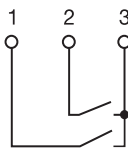
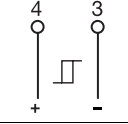
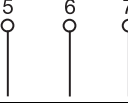
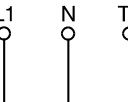
The JUMO mTRON-iTOOL project design software permits convenient design and start-up of a JUMO mTRON system.

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

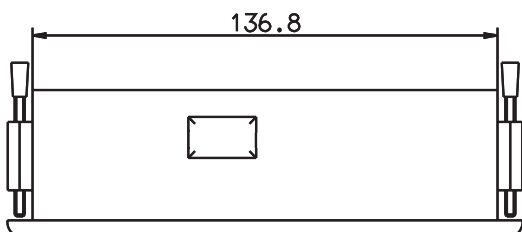
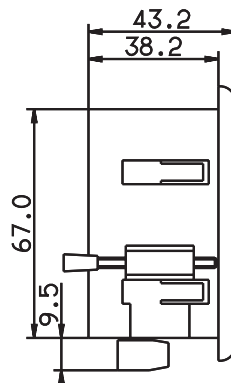
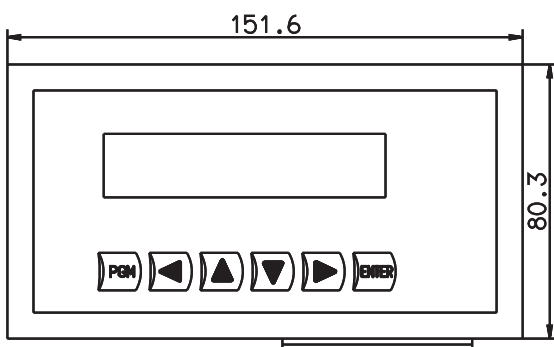


### Connection diagram

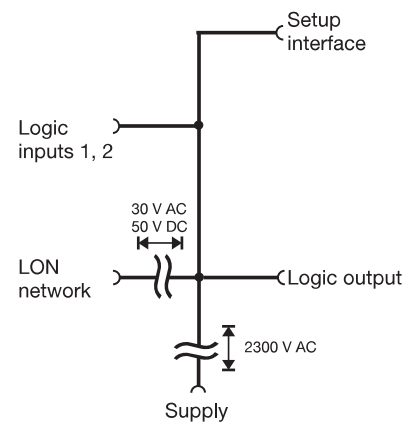


Connection for	Terminals		Notes	Diagram
<b>Logic inputs</b>	Input 1	Input 2		
Floating contacts	1 3	2 3		
<b>Logic output</b> 5V 40mA	4 + 3 -			
<b>LON interface</b>	7 = TE		screen	
	6 = Net_A 5 = Net_B		any polarity	
	9 = not used			
<b>Supply</b> as label	<b>AC</b>		<b>DC</b>	
	L1 line N neutral TE technical earth	L1 } any N } polarity TE } technical earth		

### Dimensions



### Isolation



**Panel cut-out to DIN 43 700**  
138<sup>+1.0</sup> mm x 68<sup>+0.7</sup> mm

## Ordering details

(1)  
704035/0- ..

(1) Supply . .....

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

## Standard accessories

2 mounting brackets  
1 Installation Instructions M 70.4035.4

## 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

mm	inch
9.5	0.37
38.2	1.19
43.2	1.70
67.0	2.64
68 <sup>+0.7</sup>	2.68 <sup>+0.03</sup>
80.3	3.16
136.8	5.39
138 <sup>+1.0</sup>	5.43 <sup>+0.04</sup>
151.6	5.97