LUMEL

POWER PACK MODULE SM9 Type

USER'S MANUAL

CE

CONTENTS

March 2007

1. APPLICATION

The SM9 power pack for system module is destined to supply devices with 24 V d.c. rated supply voltage.
The current value absorbed from the power pack in a continuous way should not exceed 1 A.

Power pack parameters:
- supply voltage: 105…250 V
- output: 24 V, 1A

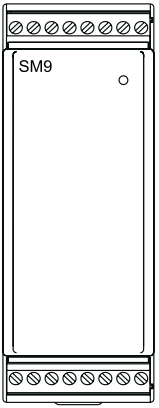


Fig. 1 View of the SM9 power pack module

2. MODULE SET

The SM9 module set is composed of:

- SM9 module	1 pc
- user's manual	1 pc
- warranty card	1 pc
- plug with screw terminals	4 pcs

When unpacking the module, please check whether the type and version code on the data plate correspond to the order.

3. BASIC REQUIREMENTS, OPERATIONAL SAFETY

Symbols located in this service manual mean:

WARNING!

Warning of potential, hazardous situations.
Especially important, one must acquaint with this before connecting the module. The non-observance of notices marked by these symbols can occasion severe injuries of the personnel and the damage of the module.

CAUTION!

Designates a general useful note. If you observe it, handling of the module is made easier. One must take note of this, when the module is working inconsistently to the expectations.
Possible consequences if disregarded !

In the security scope the module the requirements of the EEC Low-Voltage Directive (EN 61010 -1)

Remarks concerning the operator safety:

1. General

- The SM9 module is destined to be installed in measuring systems, on a 35 mm mounting rail
- Non-authorized removal of the required housing, inappropriate use, incorrect installation or operation creates the risk of injury to personnel or damage to equipment. For more detailed information please study the user's manual.
- All operations concerning transport, installation, and commissioning as well as maintenance must be carried out by qualified, skilled personnel and national regulations for the prevention of accidents must be observed.

- According to this basic safety information, qualified, skilled personnel are persons who are familiar with the installation, assembly, commissioning, and operation of the product and who have qualifications necessary for their occupation.

2. Transport, storage

Please observe the notes on transport, storage and appropriate handling.
Observe the climatic conditions given in technical data.

3. Installation

- The module must be installed according to the regulation and instructions given in this user's manual.
- Ensure proper handling and avoid mechanical stress.
- Do not bend any components and do not change any insulation distances.
- Do not touch any electronic components and contacts.
- Modules may contain electrostatically sensitive components, which can easily be damaged by inappropriate handling.
- **Do not damage or destroy any electrical components since this might endanger your health!**

4. Electrical connection

- Before switching the module on, one must check the correctness of connection to the network.
- In case of the protection terminal connection with a separate lead, one must remember to connect it before the connection of the module to the mains.
- When working on live modules, the applicable national egulations for the prevention of accidents must be observed.
- The electrical installation must be carried out according to the appropriate regulations (cable cross-sections, fuses, PE connection). Additional information can be obtained from the user's manual.

- The documentation contains information about installation in compliance with EMC (shielding, grounding, filters and cables). These notes must be observed for all CE-marked products.
- The manufacturer of the measuring system or installed devices is responsible for the compliance with the required limit values demanded by the EMC legislation.

5. Operation

- Measuring systems including SM9 modules must be equipped with protection devices according to the corresponding standard and regulations for prevention of accidents.
- After the instrument has been disconnected from the supply voltage, live components and power connections must not be touched immediately because capacitors can be charged.
- The housing must be closed during operation.

6. Maintenance and servicing.

Please observe the manufacturer's documentation.
Read all product-specific safety and application notes in this user's manual.

- Before taking the module out, one must turn the supply off.
- The removal of the module housing during the guarantee period may cause its cancellation.

4. INSTALLATION

4.1. mounting of the power pack

The power pack module is foreseen to be mounted on a 35 mm rail (EN 60715). The housing is made of plastics.
Housing dimensions: 45 x 120 x 100 mm
External leads should be of 2.5 mm^2 cross-section.

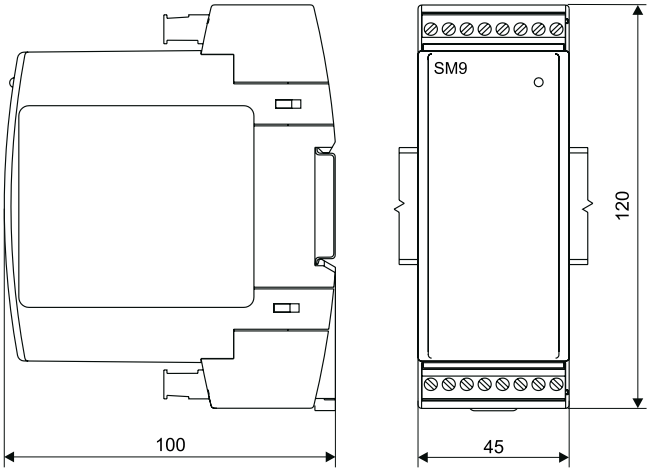
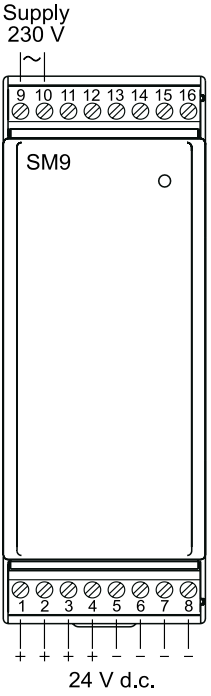


Fig. 2 Overall and mounting dimensions

4.2. Terminal description

The supply and external signals must be connected acc. to fig. 3 and 4. Particular lead-outs are described in the table 1.

Note:
One must particularly take care to the correct connection of external signals



Description of lead-outs of the SM9 power pack module *Table 1*

Terminal No	Terminal description
1	Output + voltage 24 V d.c.
2	Output + voltage 24 V d.c.
3	Output + voltage 24 V d.c.
4	Output + voltage 24 V d.c.
5	Output - voltage 24 V d.c.
6	Output - voltage 24 V d.c.
7	Output - voltage 24 V d.c.
8	Output - voltage 24 V d.c.
9, 10	Lines of module supply
11÷17	Not used

There is a two-colour diode on the frontal plate:

- **green colour** - signals the correct operation of the power pack and the presence of the 24 V voltage on its output.
- **red colour** - signals the emergency state of the the power pack operation, e.g. an output overload.

Fig 3. Electrical connections of the SM9 power pack module

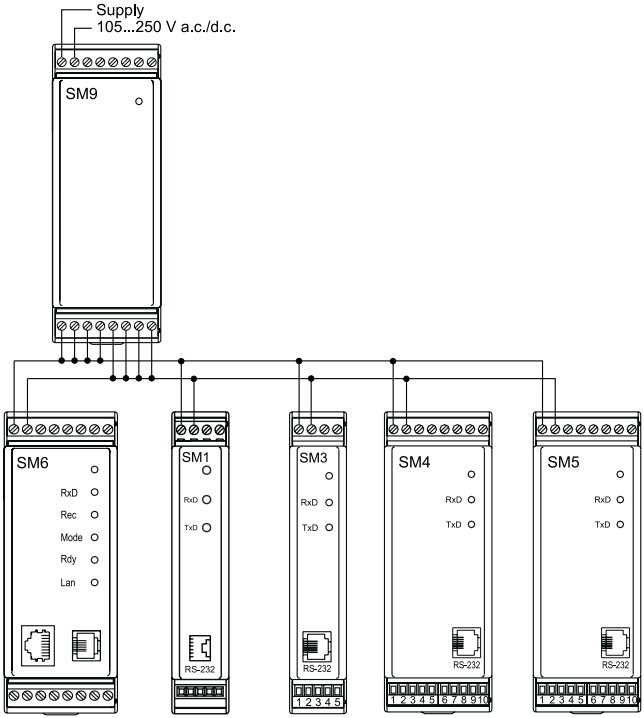


Fig. 4 Example of SM series module connection with the SM9 power pack

5. SERVICE

After connecting wires leading the supply and turning the SM9 supply voltage on, the module is ready to work. The lighted diode in green colour signals the correct device operation.

In case when emergency states occur in the power pack module and related to them, output voltage drops below 23 V d.c. value, the diode changes the lighting colour into red. In such a case one must at once turn the module supply voltage off. One must remember about the assurance of power pack rated operating conditions, i.e. connect to it such a number of devices, which the total current consumption does not exceed the power pack rated value – 1 A

6. TECHNICAL DATA

Power absorbed by the module	≤ 30 VA
Rated operating conditions:	
- supply voltage	105...250 V a.c.
- supply voltage frequency	40...50/60...440 Hz
- ambient temperature	0...23...50°C
- output voltage	24 V ±0.5 V, 1A d.c.
- relative air humidity	< 95% (non-admissible condensation)
- external magnetic field	< 400 A/m
- working position	mounted on a rail
Storage and transport conditions:	
- ambient temperature	-20...70°C
- relative air humidity	< 95% (non-admissible condensation)
Ensured protection levels:	
- from housing front	IP 20
- from terminals	IP 20
Dimensions	120 × 100 × 45 mm
Weight	< 400 g

Electromagnetic compatibility:

- immunity	acc. to EN 61000-6-2
- emission	acc. to EN 61000-6-4

Safety requirements acc. to EN 61010-1:

- installation category	III
- pollution degree	2

Maximal phase-to-earth voiltage:

- for the supply circuit	300 V

7. BEFORE A DAMAGE WILL BE DECLARED

Symptoms	Procedure	Notes
1. The diode of the power pack does not on.	Check the network cable connection.	
2. The diode lights in red.	Check if the sum of absorbed currents through the device connected to the power pack does not exceed the rated value	Maximal current consumption from the power pack – 1 A

8. ORDERING CODE

POWER PACK MODULE	SM9 -	XX	X

Version:

Acc. to catalog **00**
Custom-made* ..... **XX**

Extra requirements:

Without a quality inspection certificate **8**
With a quality inspection certificate **7**
Acc. to user's agreement* ..... **X**

* After agreeing by the manufacturer

Coding example

SM9 - 00 7 code means:
Power pack module of catalog version
With a quality inspection certificate.

9. MAINTENANCE AND WARRANTY

The SM9 power pack module does not require any periodical maintenance.
In case of some incorrect operations:

1. **After the dispatch date and within the period stated in the guarantee card**
   One should return the instrument to the Manufacturer's Quality Inspection Dept.
   If the module has been used in compliance with the instructions, the Manufacturer guarantees to repair it free of charge.
   The disassembling of the housing causes the cancellation of the granted warranty.
2. **After the warranty period:**
   One should send the instrument to repair it in an authorised service workshop.
   Spare parts are available for the period of five years from the date of purchase.

Our policy is one of continuous improvement and we reserve the right to make changes in design and specifications of any products as engineering advances or necessity requires and revise the above specifications without notice.

SALES PROGRAM

MEASUREMENT
CONTROL
RECORDING

- DIGITAL and BARGRAPH PANEL METERS
- MEASURING TRANSDUCERS
- ANALOG PANEL METERS (DIN INSTRUMENTS)
- ANALOG and DIGITAL CLAMP-ON METERS
- pkt pkt INDUSTRIAL and HOUSEHOLD CONTROLLERS
- CHART AND PAPERLESS RECORDERS
- POWER CONTROL UNITS and INVERTERS
- WATT-HOUR METERS
- AUTOMOTIVE DASHBOARD INDICATORS
- ACCESSORIES FOR MEASURING INSTRUMENTS (SHUNTS)
- MEASURING SYSTEMS (ENERGY, HEAT, CONTROL)
- CUSTOM-MADE MEASURING ELECTRONIC DEVICES.

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QUALITY PROCEDURES:
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