MOD64

Ver.01

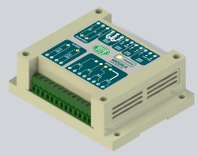
INPUTS / OUTPUTS EXPANDING MODULE

Have this manual in the palm of your hand with the **FG Finder** app.

Sitrad — System supervisório

RS 485 — Comunication serial





MOD64V01-04T-16897-2610

WARNING

BEFORE THE INSTALLATION OF THE CONVERTER, WE RECOMMEND READING THE INSTRUCTION MANUAL IN FULL TO PREVENT POSSIBLE DAMAGE TO THE PRODUCT.

PRODUCT INSTALLATION PRECAUTIONS:
Before performing any procedure on this instrument, disconnect it from the power grid;
Ensure that it has adequate ventilation, avoiding installation on control panels containing devices that could cause it to operate outside its specified temperature range;
Install the product away from sources that may generate electromagnetic disturbances, such as: motors, contactors, relays, electrovalves, etc.;

AUTHORIZED SERVICES:
The installation and maintenance of the product must be performed by qualified personnel only;

ACESSORIES:
Use only Full Gauge Controls original accessories.
If you have any queries, please contact our technical support.

THROUGH CONTINUOUS DEVELOPMENT, FULL GAUGE CONTROLS RESERVES THE RIGHT TO CHANGE THIS MANUAL INFORMATION AT ANY TIME, WITHOUT PRIOR NOTICE.

1. DESCRIPTION

The **MOD 64** is an input / output expanding module developed for working together with the Sitrad installation management software. By using the **MOD64**, it is possible to expand the automation capacity of a given installation since it enables monitoring several events, such as :

-Opening ports;
-Engaging switches;
-Activating compressors and fans.

Besides monitoring events, the **MOD64** also allows controlling up to 4 differente loads. With the Sitrad software it is possible to bind the conditions of different controllers and only actuate when a specific rule is valid, for example:

-Actuate output 2 when the temperature of controller 1 is higher than 50.0 °C, and compressors 1 and 2 linked to controller 5 are activaded;

-Actuate outputs 1 and 4 when the **MOD64** input 1 is activated, or when the instrument 2 pressure is lower than 150 psi.

In the event the serial communication is interrupted, the **MOD64** will enter the standard operating mode when the user can previously set up the state of each controller output. Besides the integrated control with the Sitrad software, the **MOD64** can also autonomously control 2 processes whose sensors are connected to analog inputs 1 and 2 . For doing this, the user must set up the **MOD64** indicating the voltage levels, end of scale and decimal resolution the connected sensors are capable of providing. The user can also set up the type of control (setpoint / hysteresis or intra / extra range alarm), the type of action (director or inverse action), and the outputs associated with each internal control.

The **MOD64** also features two internal cyclic timers, which are capable of autonomously actuating any of the outputs. By using the Sitrad the user can set up each output associated with a cyclic timer, as well as its on and off time. Full Gauge uses a RS-485 network for providing higher robustness and reliability to the communication among its controllers and the Sitrad software. Communication is established using two wires (A and B), thus performing a Half-Duplex communication where the computer is the master and the controllers, the slaves.

2. APLICATIONS

- Monitoring ports, flow switches, windows, checking compressor activating, activating alarms, lamps and other similar euipment.
- Controlling humidity, temperature, pressure cooling gas humidity, and other physical characteristics depending on the sensor employed.

3. TECHNICAL SPECIFICATION

Power Supply	115/230 Vac ± 10% (50/60Hz)
Controller consumption	3.0 VA
Operation temperature	0 to 50ºC / 32 to 122ºF
Operation humidity	10 to 90% UR (without condensation)
Dimensions	115 x 90 x 40 mm (WxHxD)
Insulated voltage input IN1 / IN2	115/230 Vac±10%
Non insulated digital input DIG1 / DIG2	Dry contact
Non insulated analog input AN1 / AN2	0 to 5Vdc
Relay outputs OUT1 / OUT2 / OUT3 / OUT4	5 (3)A / 250Vac 1/8 HP
Voltage outputs Vdc	12Vdc max. 20mA not regulated

4. CONFIGURATION

The **MOD64** is entirely configured by the Sitrad software. Therefore, just connect it to the RS-485 network. The configuration options available in the software are:

-Output standard status when there is no communication with the Sitrad software: In this function, the user sets up the status of each **MOD64** output when the serial communication loss is detected. Options available for this are:
- On - The output is on;
- Off - The output is off;

Last status: When the output is not associated with an autonomous control or with a internal cyclic timer, it keeps its last status. If is associated with the autonomous control or with the internal cyclic timer, the output will be continue being controlled even without the Sitrad.

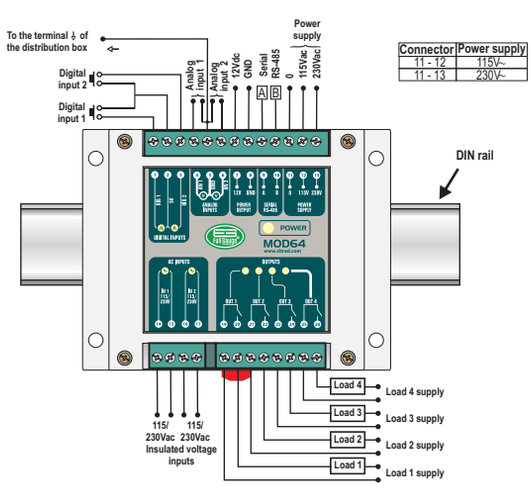
- Operating logic of the digital voltage inputs: In this function you can configure the digital inputs interpret a signal type ON and a signal OFF. When selected, the '' direct action'' option, the **MOD64** will consider the signal ON when there is no voltage at the or when the digital input contact is closed. When you select the ''action reverse'', the **MOD64** will consider the signal ON, when there is voltage at the input port or when the digital input contact is open.

- Autonomous control operation logic for analog inputs 1 and 2 : In this function, it is possible to set up the type of autonomous controls that is associated with inputs 1 and 2. Possible options are:
-Direct action Setpoint and Hysteresis;
-Inverse action Setpoint and Hysteresis;
-Intra Range Alarm;
-Extra Range Alarm.
Besides this type of control, the user can also set up wich outputs will be triggered by each of the autonomous controls (AN 1 or AN 2), and their resetting time (in seconds)

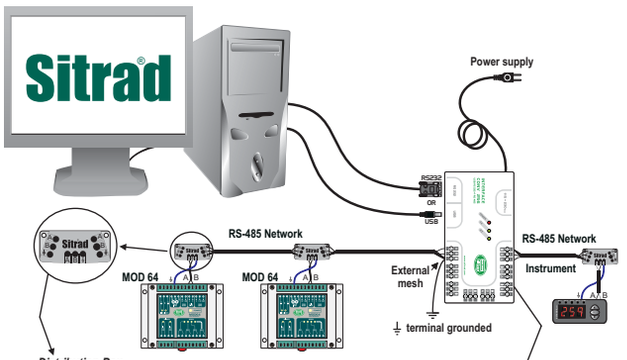
- Time for validating the serial communication loss: Time that the **MOD64** waits upon identifying a serial communication loss until activating the output standard operation mode.
Note: If the communication failure exceeds the configured time, the POWER LED will begin to flash indicating this until the communication is resumed.

-RS-485 interface address: Network instrument address for communicating with the Sitrad software. Note: on the same network there cannot be more than one instrument with the same address.
ATTENTION: If you want to connect more than one **MOD64** to the same installation, it shall be connected and then its address should be changed; only after doing this the next instrument can be connected.

5. WIRING DIAGRAN



5.1 Integrating Controllers, RS-485 Serial Interface and Computer

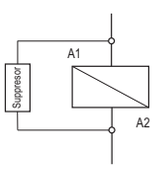


Distribution Box
Used to connect more than one instrument to the Interface. The wire's connections must be made in agreement with the following rules: terminal **A** of the instrument connects to the terminal **A** of the distribution box, that must be connected with the terminal **A** of the Interface. Repeat the action for terminals **B** and ⏚, being ⏚ the cable shield.
The terminal ⏚ of distribution box must be connected to the respective terminals ⏚ of each instrument.

RS-485 Serial Interface
Device used to establish the connection Full Gauge Controls' instruments with the Sitrad®.

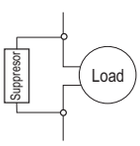
IMPORTANT:
1- Install protector against overvoltage on the power supply;
- Sensor cables and signal cables of the computer may be joined, but not in the same eletric conduit through which the electric input and the activation of the loads run.
- Install transient suppresors (RC filters) parallel to the loads as to increase the product life of the relays.

Schematic for the connection of supresors to contactors



A1 and A2 are the contactor coil terminals.

Schematic for the connection of supresors to direct activation loads



For direct activation the maximum specified current should be taken into consideration.

ENVIRONMENTAL INFORMATION

Package:
The packages material are 100% recyclable. Just dispose it through specialized recyclers.

Products:
The electro components of Full Gauge controllers can be recycled or reused if it is disassembled for specialized companies.

Disposal:
Do not burn or throw in domestic garbage the controllers which have reached the end-of-life. Observe the respectively law in your region concerning the environmental responsible manner of dispose its devices. In case of any doubts, contact Full Gauge controls for assistance.

WARRANTY - FULL GAUGE CONTROLS

Products manufactured by Full Gauge Controls, as of May 2005, have a two (02) year warranty, as of the date of the consigned sale, as stated on the invoice. They are guaranteed against manufacturing defects that make them unsuitable or inadequate for their intended use.

EXCEPTIONS TO WARRANTY

The Warranty does not cover expenses incurred for freight and/or insurance when sending products with signs of defect or faulty functioning to an authorized provider of technical support services. The following events are not covered either: natural wear and tear of parts; external damage caused by falls or inadequate packaging of products.

LOSS OF WARRANTY

Products will automatically lose its warranty in the following cases:
- The instructions for assembly and use found in the technical description and installation procedures in Standard IEC60364 are not obeyed;
- The product is submitted to conditions beyond the limits specified in its technical description;
- The product is violated or repaired by any person not a member of the technical team of Full Gauge Controls;
- Damage has been caused by a fall, blow and/or impact, infiltration of water, overload and/or atmospheric discharge.

USE OF WARRANTY

To make use of the warranty, customers must send the properly packaged product to Full Gauge Controls together with the invoice or receipt for the corresponding purchase. As much information as possible in relation to the issue detected must be sent to facilitate analysis, testing and execution of the service.

These procedures and any maintenance of the product may only be provided by Full Gauge Controls Technical Support services in the company's headquarters at Rua Júlio de Castilhos, 250 - CEP 92120-030 - Canoas - Rio Grande do Sul – Brasil

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