

7.1. Command Terminals

Warning: Before connecting or disconnecting the unit check that power and control cables are isolated from voltage sources.

7.1.1. Terminal block M2

Terminal	Description
1	GND
2	COM I - Common Digital Input
3	DI 2 - Enable Digital Input
4	DI 1 - Configurable Input
5	+ Analog Input1 (0-10Vdc/4-20mA Analog Setpoint)
6	- Analog Input1 (0-10Vdc/4-20mA Analog Setpoint)
7	Output +10Vdc stabilized 1 mA MAX
8	Slave Output - (factory connection)
9	Slave Output + (factory connection)

7.1.2. Terminal block M1

Terminal	Description
10	GND
11	TA1 Input (factory connection)
12	TA1 Input (factory connection)
13	Not Connected
14	C - Common contact alarm relay output
15	NO - Normally Open contact alarm relay output (Thermal or SC/HB/CL)
16	NC - Normally Close contact alarm relay output (Thermal or SC/HB/CL)

7.1.3. Terminal block M3

Terminal	Description
A+	RS485 A+
B-	RS485 B-

7.1.4 Terminal block M4

Terminal	Description
L1	Aux - Voltage Supply for electronic boards and synchronization (See order code for the Value)
-	Not Connected
L2/N	Aux - Voltage Supply for electronic boards and synchronization (See order code for the Value)

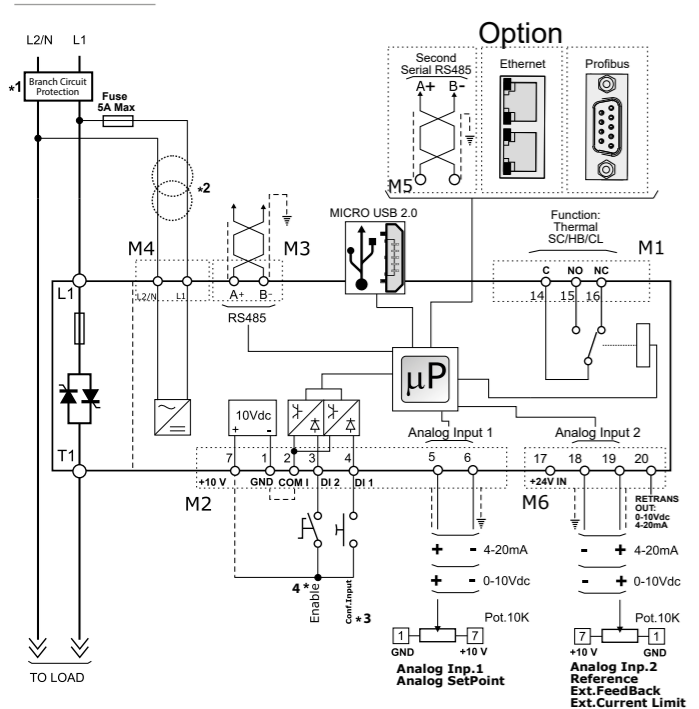
7.1.5 Terminal block M6

Terminal	Description
17	Auxiliary +24Vdc 500mA Input backup power supply for communication
18	- Analog Input2 (0-10Vdc/4-20mA Analog Setpoint) - 0 Volt
19	+ Analog Input2 (0-10Vdc/4-20mA Analog Setpoint)
20	Retransmission Output 0-10Vdc 4-20mA

7.1.6 Terminal block M5 (only with Second serial485 optional)

Terminal	Description
A+	RS485 A+
B-	RS485 B-

7.2. Schematic

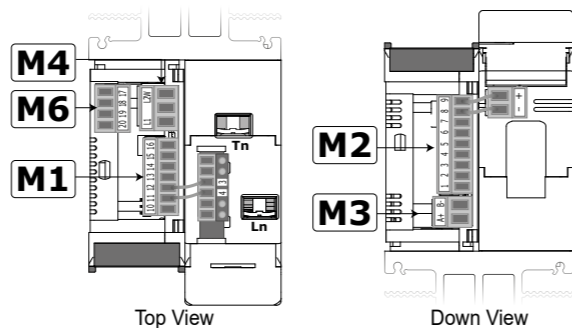


NOTE:

*1 The user installation must be protecting by electromagnetic circuit breaker or by fuse isolator. The Fuse must be branch circuit protection. For UL any listed UL branch circuit fuse would be acceptable as an external fuse, following national electric code guide for resistive heating of 125% load current rating to protect external wires.

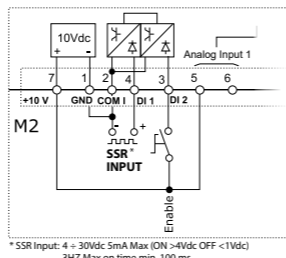
*2 The auxiliary voltage supply of the Relay C unit must be synchronized with load voltage power supply. If the Auxiliary Voltage (written on the identification label) is different from Supply Voltage (to the load), use an external transformer as designated.

*3 For SSR input connection follow next schematic.



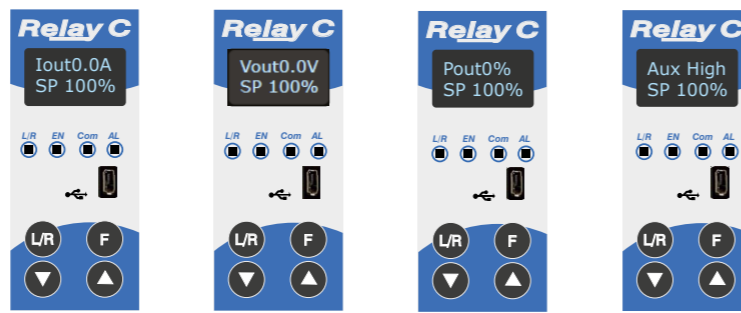
7.3. SSR Control Input schematic

For SSR input use follow the schematic on the side and configure Digital Input 1 as Fast Enable.



8. Control Panel

The Control Panel is placed on the front of the thyristor unit, on his display you can visualize the alarms, the input and output signals and all the configuration parameters.



On the home page the keys are used as follows:

Press...	to...
[F]	Function: Scroll through the parameters on the home page
[L/R]	Local/Remote: Switch between local and remote set point for power demand
[Up]	Up: Increment power demand set point when set to local
[Down]	Down: Decrement power demand set point when set to local
[F] + [L/R]	Press and hold for about two seconds to access the menus

To view the status parameters:

Press Function [F] once to advance from one parameter to the next

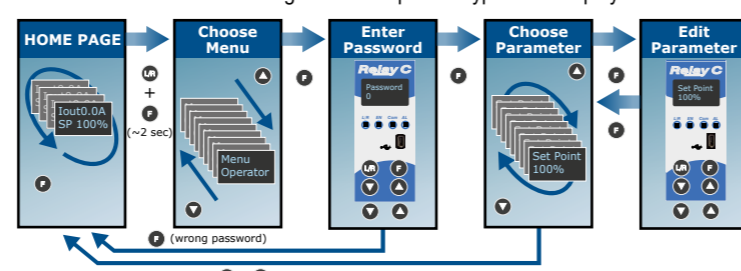
To set the set point locally:

Press Local/Remote [L/R] (Note: indicator 1 flashes steadily when set point is set locally)

Use Down [Down] and/or Up [Up] to set the local set point.

8.1. Menu navigation

The menus are accessible using the control panel keypad and display.



To access a menu and edit a setting:

- Press and hold Local/Remote and Function together [L/R] + [F] until the upper display flashes Menu.
- Press Up [Up] to choose the menu. (Press down [Down] if you overshoot the menu you want).
- Press function [F] to advance to the password prompt.
- Use up [Up] and/or down [Down] to set the password (see the table).
- Press function [F] to enter the password and advance to the first parameter of the menu.
- Press Up [Up] to advance to the next parameter and repeat to reach the desired parameter.
- Press function [F] to start editing the parameter. The parameter name flashes in the upper display.
- Use Up [Up] and/or down [Down] to edit the parameter setting.
- Press function [F] to enter the new setting. The parameter name stops flashing.
- Press and hold local/remote and function together [L/R] + [F] for about two seconds to exit the menus.

Menu	Password	Parameter used to...
Operator	0	View measured values and basic settings including current, voltage and set point
Setup	2	Configure the power controller for the load
Adv Setup	10	Configure the operation and performance of the power controller in the application
Hardware	5	Configure the functions of the analog and digital inputs and outputs, and the re-transmission parameters
Comm	3	Configure field bus communicating parameters
Monitoring	0	View measured and calculated values and other read-only parameters

8.2. Control Panel Led

The four indicators on the control panel show the general state of the power controller.

Indicator	State	Meaning
1 Local/Remote	Flashing	Power output set locally or via communications
	Off	Power output set remotely (via analog input)
2 Enable	On	Output enabled
	Off	Output disabled
3 Communications	Flashing	Active communications
	Off	No active communications
4 Alarm	On	Active alarm
	Off	No alarm

9. Supply the electronic board

The Relay C thyristor unit, to work, requires a voltage supply for the electronic boards. The Max consumption is 10VA. The voltage supply for the electronic boards is configured in line with customer requirements that are defined in the Order Code. The Order Code is written on the identification label.

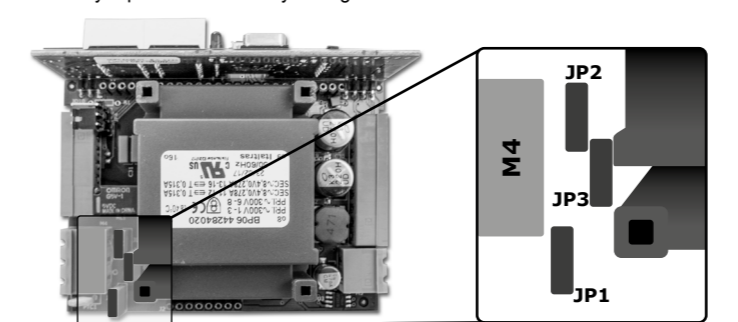
Warning: Before connecting or disconnecting the unit check that power and control cables are isolated from voltage sources.

Terminal M4	Description
1	Voltage Supply for Electronic Boards (Auxiliary Voltage)
2	Not Used
3	Voltage Supply for Electronic Boards (Auxiliary Voltage)

To change auxiliary supply voltage sold the correct link-jumper on Relay C board. The type of mounted transformer depends of the chosen Voltage in the order code.

Transformer Type	Link-Jumper JP1+JP2	Link-Jumper JP3
TR-605 120V-TR1	90:135V	180:25V
TR-605 230V-TR2	180:265V	342:528V
TR-605 300V-TR3	238:330V	540:759V

If the Auxiliary Voltage (written on the identification label) is different from Supply Voltage (to the load), use an external transformer with primary equal to load voltage and secondary equal to the Auxiliary Voltage.

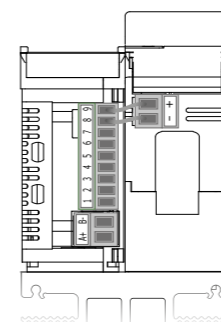


Attention! never link all the jumpers JP1+JP2+JP3 at the same time or jp3 + any other jumper, JP3 must be always alone, follow only the configuration shown.

10. RS485 Serial port

M3 Terminal	Description
A+	RS485 A
B-	RS485 B

The serial communication port RS485 is available on the Command Terminal. On this port may be done a network up to 127 Relay C.

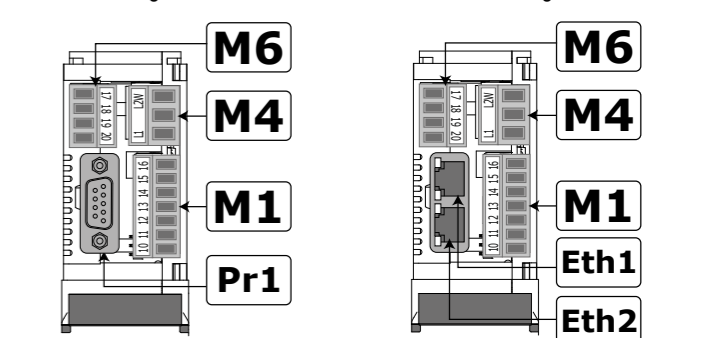


11. Fieldbus communication option

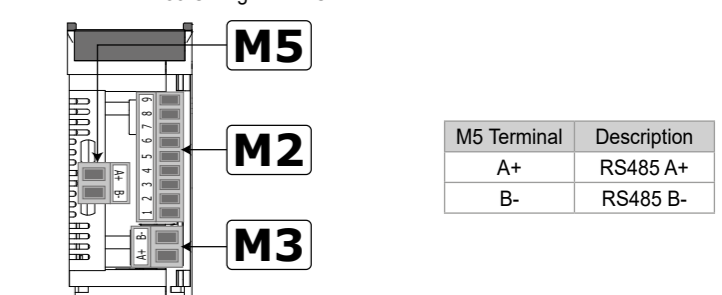
Other serial communication port are available as option, see Communication Manual for details.

Profibus Configuration Connectors

Ethernet Configuration Connectors



Second Serial 485 Configuration Connectors



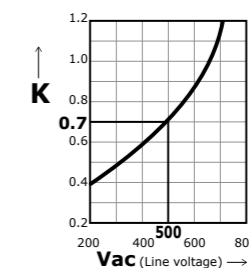
M5 Terminal	Description
A+	RS485 A+
B-	RS485 B-

12. Internal Fuse

The thyristor unit have internal fuse extrarapid at low I²t for the thyristor protection of against the short-circuits.

The Fuses must have I²t 20% less than thyristor's I²t. The warranty of thyristor is null if no proper fuses are used.

Type	Fuse Code Spare Part	Current (ARMS)	I ² T at 500Vac* (A ² sec.)	Vac	Max Power Lost (W)
030	FU1451/40A	40	525	660	8
035	FU1451/50A	50	1260	660	9
040	FU1451/50A	50	1260	660	9



*I²T are multiplied for K value in function of Vac at 500V K is equal to 0,7 (1800 X 0,7 =1260). At 660Vac K is equal to 1.

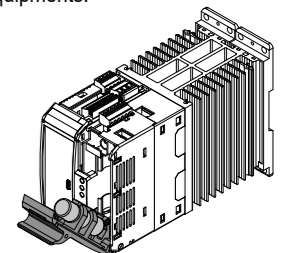
Caution: High speed fuses are used only for the thyristor protection and can not be used to protect the installation.

Caution: The warranty of thyristor is null if no proper fuses are used. See tab.

Warning: When it is supply, the Thyristor unit is subject to dangerous voltage, don't open the Fuse-holder module and don't touch the electric equipments.

12.1. Fuses Replacement

Open the Fuse-Holder and pull out the fuse.



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