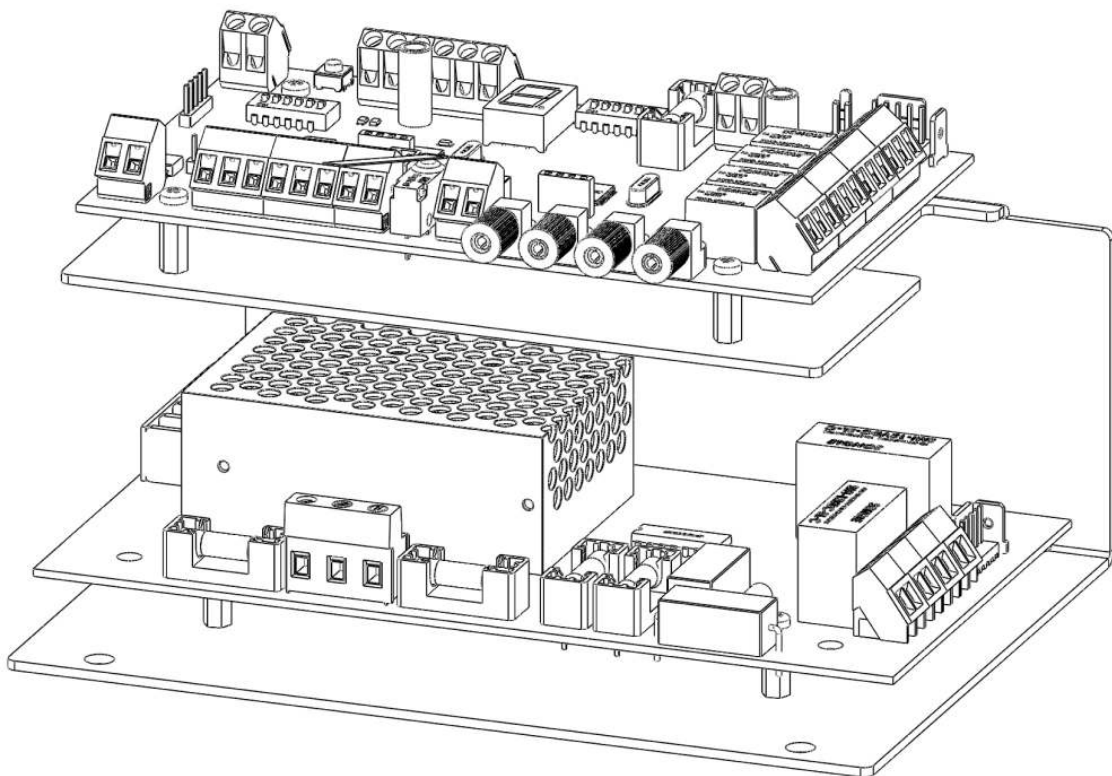


ALM-6814/6815

INSTALLATION AND PROGRAMMING MANUAL



MARSS Solar Defender ® System

This essential guide provides specific installation and configuration of devices ALM-6814/6815 in stand alone mode. For operation with RS-485 bus, see the manual installation and configuration of the ALM-6800.

Important: The MARSS Srl reserves the right to change the manual without prior notice, or any part thereof, in order to improve the quality and performance of the product and the installation of the system itself.

Visit the site www.marss.eu regularly for updates of MARSS products

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SAFETY PRECAUTIONS

The installation of the product must be performed by qualified personnel in accordance with local laws and regulations on safety.

In agreement with the European Directive 2004/108/EC (EMC), the product must be installed using equipment, cables and accessories that allow it to meet the requirements of the Directive for fixed installations.

The product must be connected to the mains supply by following the instructions in this manual.

Keep physically separated extra low voltage wires, including the battery, the wire low voltage (230Vac).

IMPORTANT


Only trained and authorized personnel can service the product, with the aim of making the connections described in this manual. In case of failure do not attempt to repair the product or the warranty will no longer be valid.

The opening of this unit may provide dangerous parts under tension. Remember to disconnect the power before you get your hands on the power supply section.

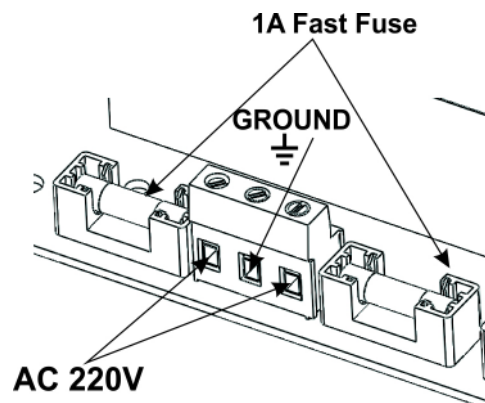
It is recommended to periodically verify the proper functioning of the alarm system, however, a reliable electronic alarm system will not prevent theft, tampering, fire, etc., but merely reduce the risk that such situations occur.

ACCORDANCE WITH THE EUROPEAN DIRECTIVES

The product meets the essential requirements of European Directive 2004/108/EC (Electromagnetic Compatibility Directive - EMC) and is therefore consistent with the harmonized standards EN 50130-4, EN 61000-6-3.

 ATTENTION
The opening of this unit may provide dangerous parts under tension. Remember to remove the power first to get your hands on the power supply section.

WARNINGS
<ul style="list-style-type: none">- MAINTENANCE OF THIS APPLIANCE MUST BE PERFORMED BY SPECIALIZED PERSONNEL ONLY.- BEFORE CONNECTING THE SYSTEM TO THE POWER CHECK THAT SAFETY HAS RESPECT.- REPLACE THE FUSE ONLY WITH RECOMMENDED TYPES.



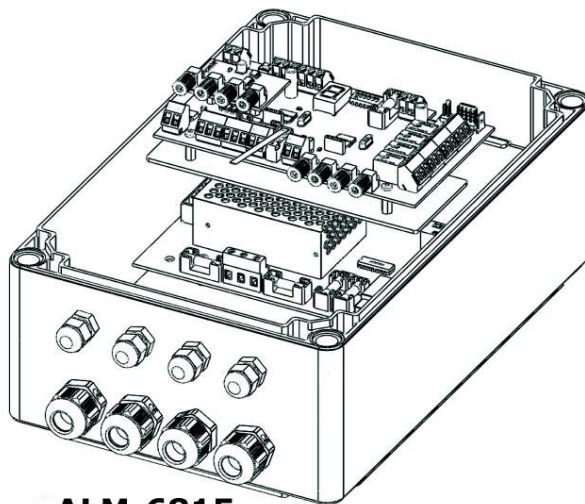
To connect to the 230V, use cables with greater than 0.5 mm and with an extra jacket to ensure greater protection.

FEATURES OF DEVICES

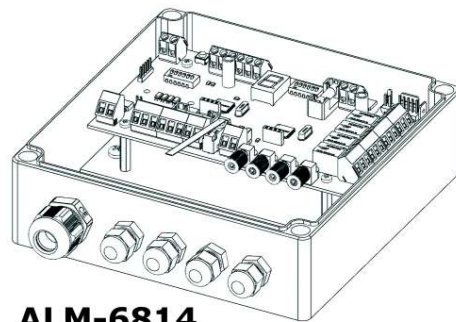
In this part of the manual lists the major hardware features and functions of the plastic optical fiber devices ALM-6815, ALM6814 and fiber optic connection module to the RS-485 bus.

ALM6815 is an antitheft device, fiber optic plastic double loop. Its functions is based on cut and torsion control of the optical fiber. It can work both in stand-alone (autonomous), using the relay and open collector outputs for the onboard alarm cut or torsion fibers, in either RS-485 bus to send these reports directly to the central management unit ALM-6800. Its housed in a 200x300x132 container, equipped with a supervised power supply with main supply and status battery control. In BUS RS-485 mode the control unit ALM-6800 receives alarms both cut and torsion fiber, both the main supply 230Vac presence and status of internal battery of each device connected to the system bus.

ALM6814 has within the same circuit board with features identical to those of the ALM6815, but without the power module 230Vac. For this model, the device operates at 12V and is housed in a 175x175x75 container.



ALM-6815

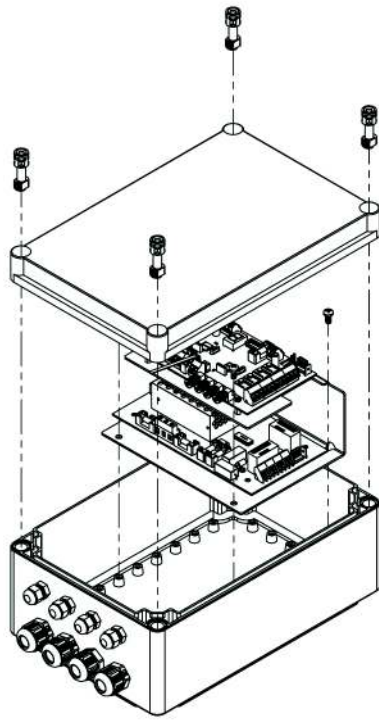


ALM-6814

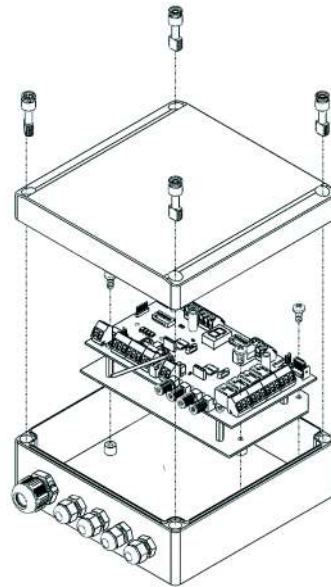
ALM-6815 and ALM-6814 have the following characteristics:

1. Double-loop fiber, with 200 meters per loop, with cut and torsion management;
2. Torsion adjustment system for each loopmanagement;
3. Four relay outputs for reporting cut and torsion for each loopmanagement;
4. Open Collector output signal blocking operation of the concentratormanagement;
5. Dual mode, stand-alone, and RS-485 bus selectable via dip switches;
6. Seven-segment LED display for viewing of alarms and calibration of the device.

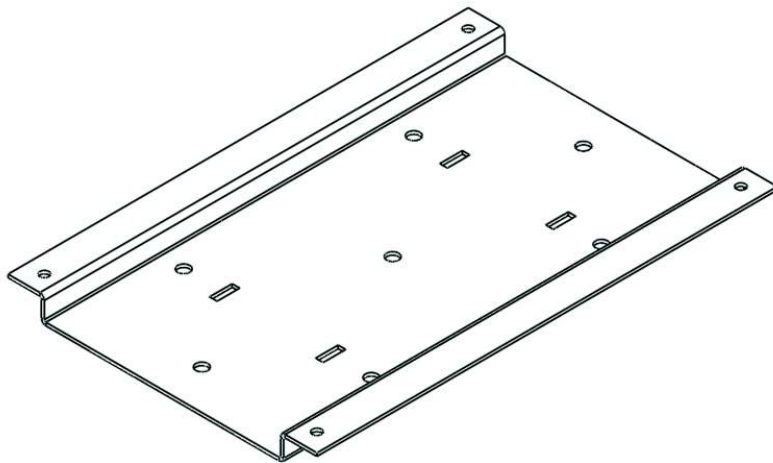
EXPLODED VIEW



ALM-6815

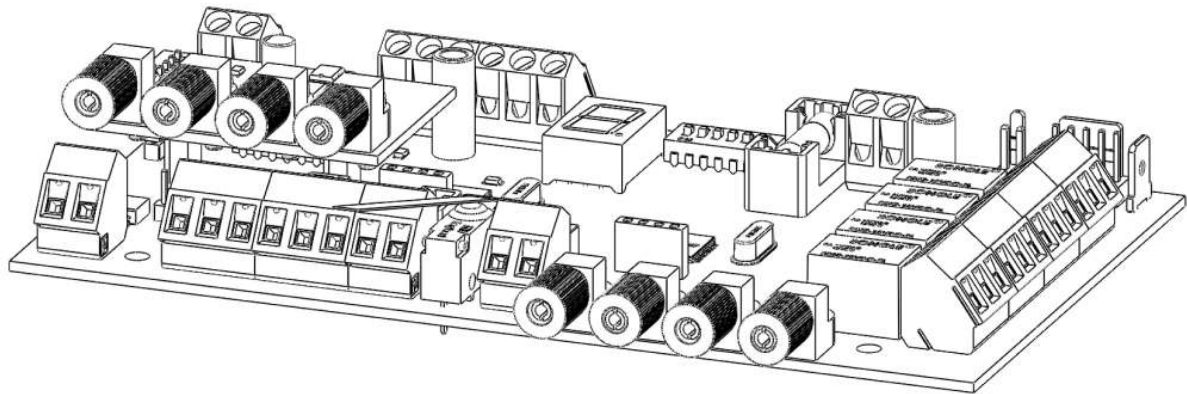


ALM-6814



ALM-6041/W
Mounting bracket for ALM-6815

Concentrator module for fiber-optic Solar Defender (model ALM-6814/6815)



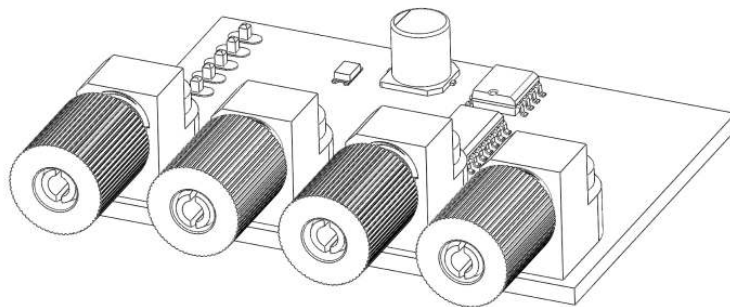
The concentrator module ALM-6814/6815 manages 2 lines plastic optical fiber (POF - Plastic Optical Fiber) from 200 meters by 2 loops. It can work in stand-alone or centralized mode on RS-485 bus.

ALM-6815: Fiber optic concentrator, with supervised power supply module.

ALM-6814: Fiber optic concentrator without supervised power module.

This manual only refers to the stand-alone operation. For the operation on BUS refer to the installation and programming manual of the ALM-6800.

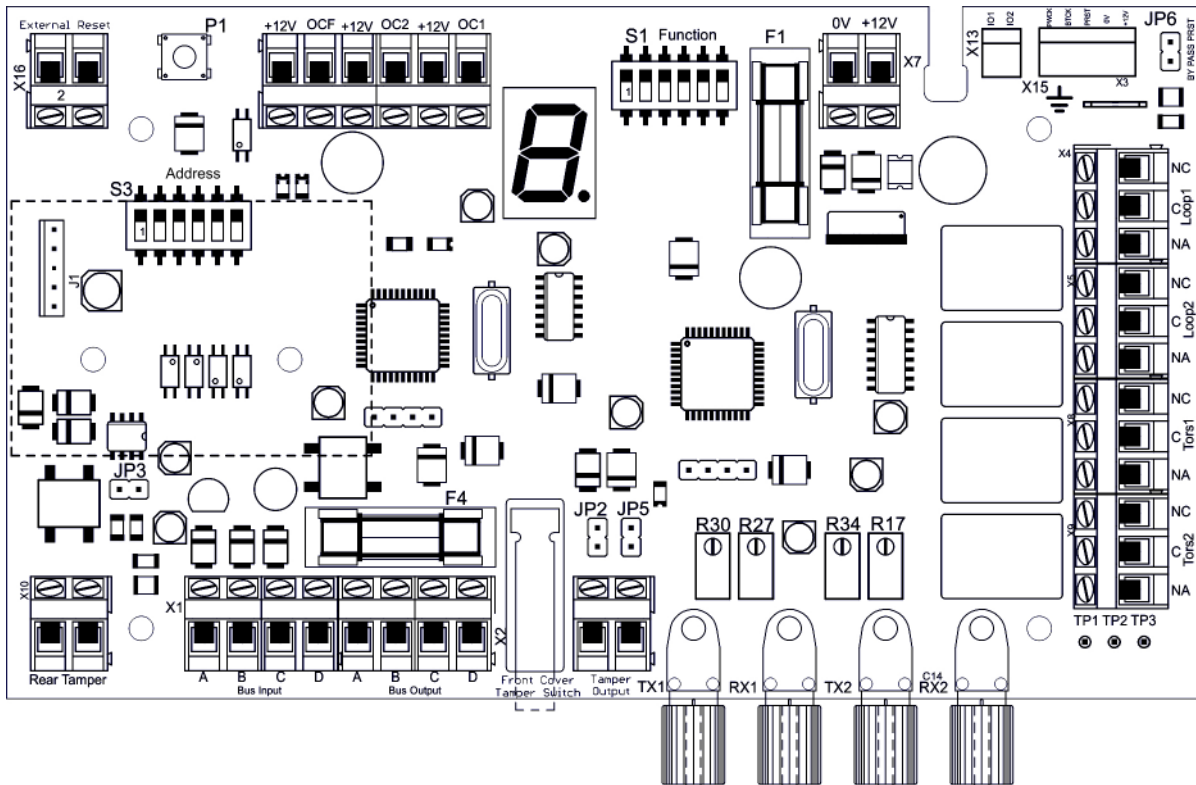
Modulo convertitore BUS-Fibra (optional)



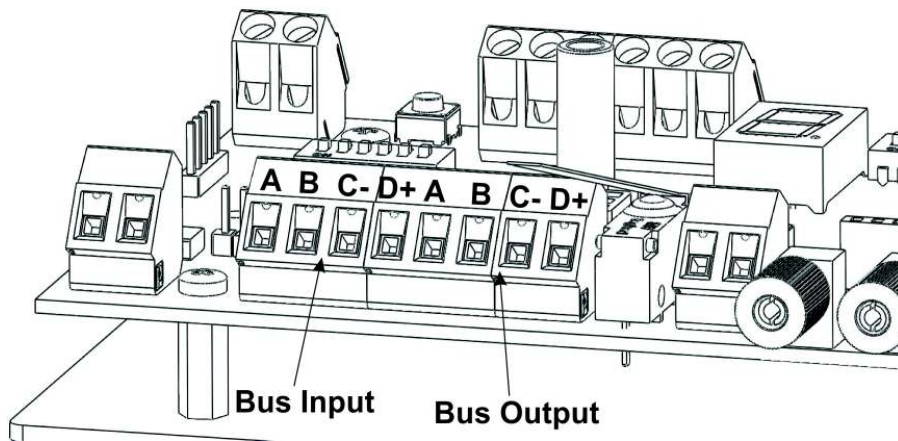
The concentrator modules are designed to interface the RS-485 bus using a plastic optical fiber converter module.

Note: The drive-BUS fiber will soon be available.

Description of the concentrator module



Bus Input A B C D terminal block

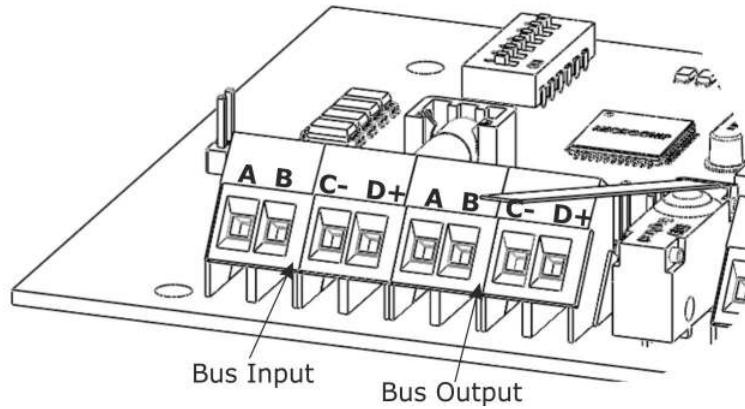


Terminal block for connecting the RS-485 bus from the central unit (For use on bus mode. In stand-alone is not used)

- A** Data Bus "A" (green if you use the cable MARSS ALM-6021)
- B** Data Bus "B" (yellow if you use the cable MARSS ALM-6021)
- C** Negative power supply from central unit ALM-6800 (black if you use the cable MARSS ALM-6022 and any other cables)
- D** +24V Positive power supply from central unit ALM-6800 (red if you use the cable MARSS ALM-6022)

Bus Output A B C D terminal block

Terminal block for connecting the RS-485 bus to the next concentrator module.



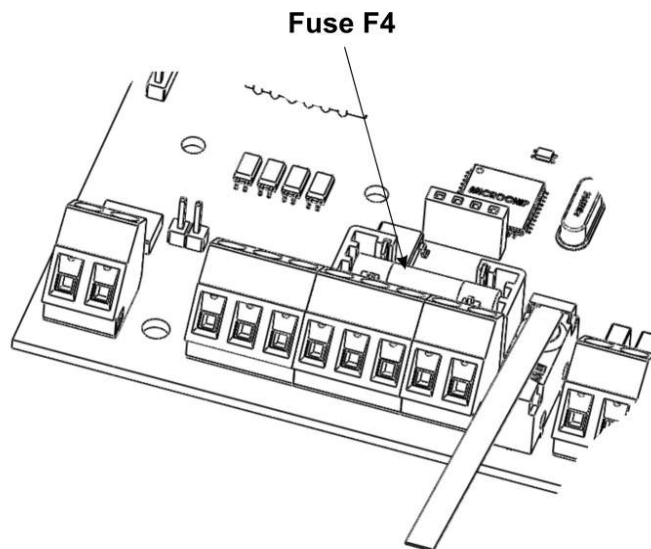
A Data Bus "A" (green if you use the cable MARSS ALM-6021)

B Data Bus "B" (yellow if you use the cable MARSS ALM-6021)

C Negative power supply to the next concentrator module (black if you use the cable MARSS ALM-6022 and any other cables)

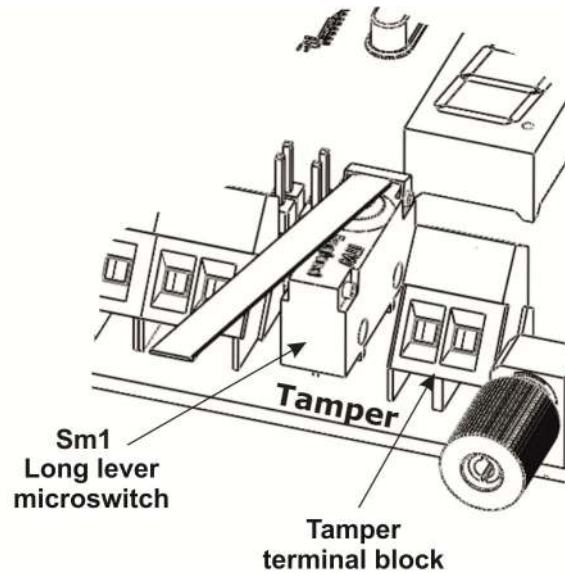
D +24V Positive power supply to the next concentrator module (red if you use the cable MARSS ALM-6022)

Fuse F4



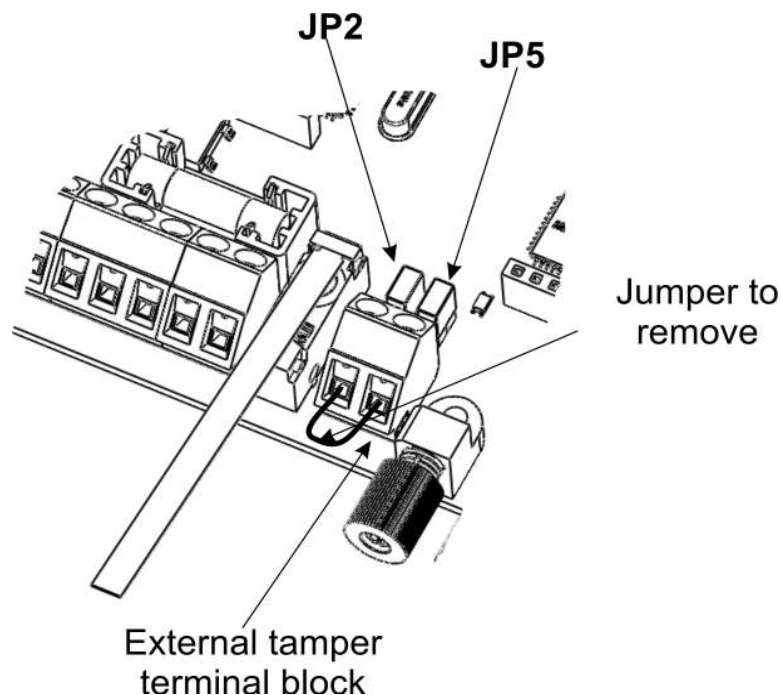
Fast Fuse 1A power protection from the bus RS-485.

Tamper terminal block



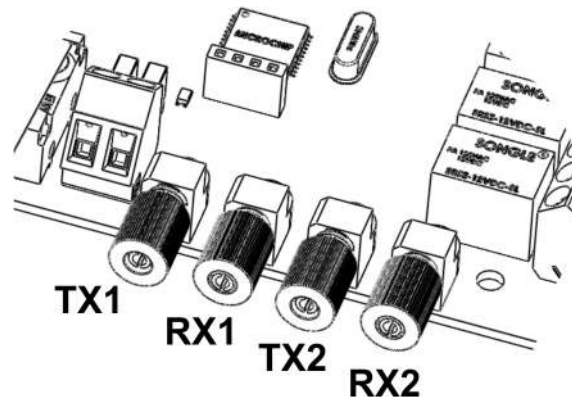
The concentrator module has an internal long lever microswitch for tamper protection of the container. If you use mode of operation on bus, the device will indicate tampering with the control unit via BUS.

In standalone mode, you can use the terminal block for connection to any burglar alarm or signaling device (telephone dialer, radio, etc. ..). In this case we must remove the jumpers JP2 and JP5.

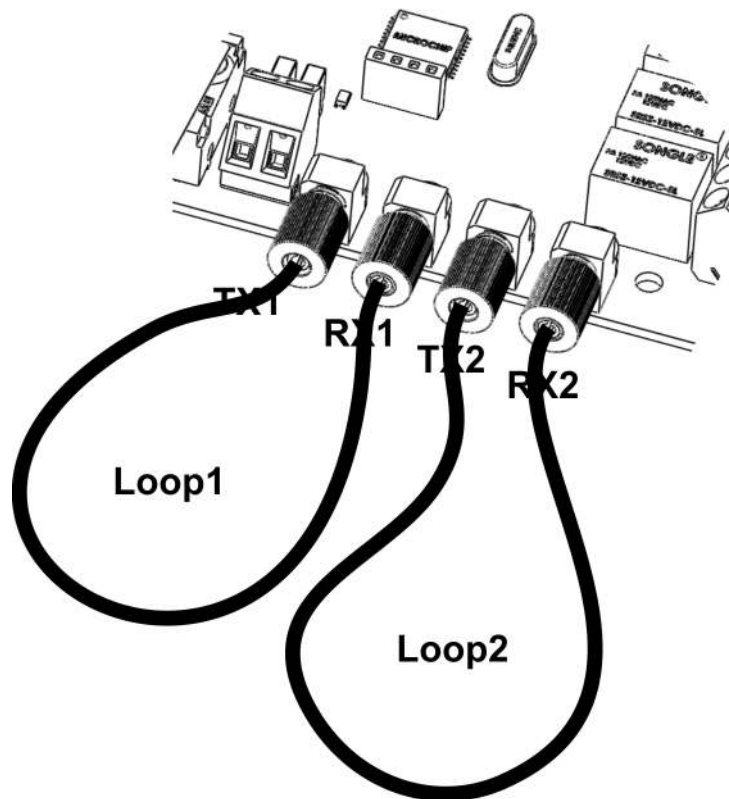


Note: Both in the operation on bus, both in stand-alone, after the installation and testing of the concentrator, we must remove the jumper on the external tamper terminal block. Leaving the jumper connected to the terminal, the tamper will remain inactive.

Fiber Optic TX and RX

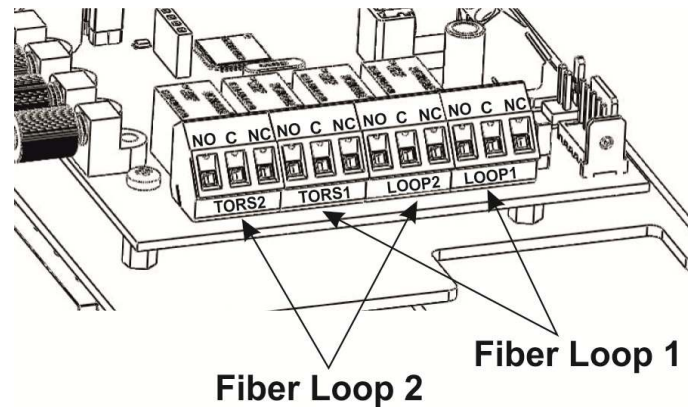


The concentrator is equipped with 4 connectors fiber. 2 for TX and 2 for RX (no need to do fine lapping prior to connection of the fiber).



TX and RX fiber are calibrated to the use of plastic optical fiber to a maximum length of 200 meters. When there is an interruption or a torsion of the fiber, the optical receiver detects the change of transmitted light and communicates it to the concentrator module. In the bus mode, the communication is directly with the central ALM-6800. Alarms cutting or torsion are identified by two different relays for loop for a total of four alarm relays on board the concentrator.

Cutting and torsion fiber signalling relay (Loop1-Tors1 and Loop2-Tors2)



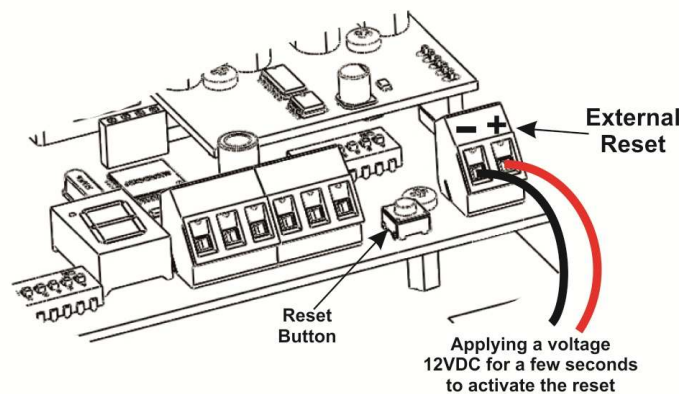
The concentrator is equipped with four relays alarm signal.

- Loop1: Alarm cut loop1
- Loop2: Alarm cut Loop2
- Tors1: Alarm torsion fiber loop1
- Tors2: Alarm torsion fiber Loop2

The four relays are activated in case of breakage, cutting or torsion of the fiber. The cut and torsion signaling activates the relay for alarm only if the two events occur at different times. If cutting the fiber, will activate the corresponding alarm relay cut (Loop1 or Loop2). If torsion occurs before and subsequently the cut, both relays will be activated.

The relay contacts can support a maximum load of 1A 250VAC or 24VDC 1A.

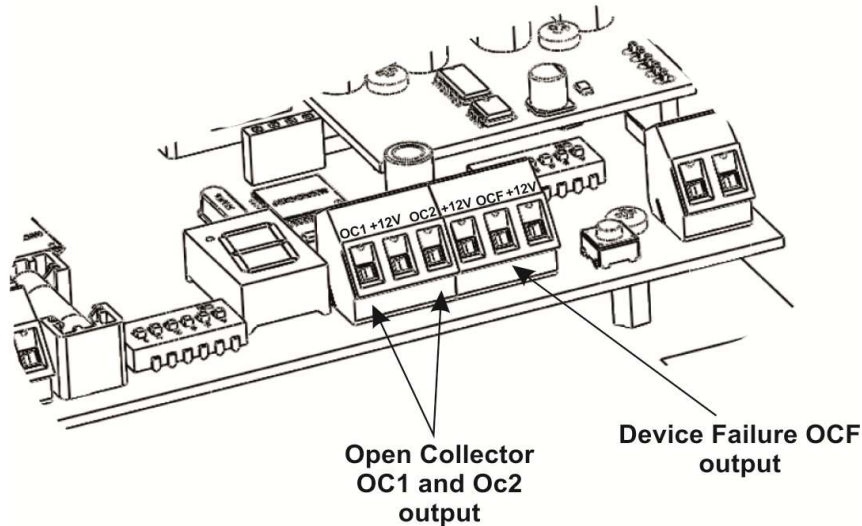
Reset button and External Reset terminal block



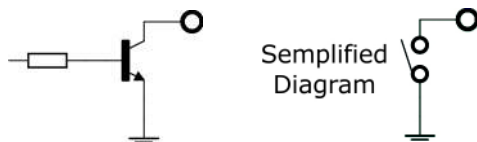
The S1 is used to reset the concentrator, after an alarm signal. You can also reset the device (GSM dialer, etc ...) using the terminal block "External Reset." The command reset is performed by applying a 12Vdc terminal block for a few seconds.

Note: The maximum voltage applied to the reset terminal block is 24Vdc.

Open Collector OC1, OC2 and OCF outputs



Open collector output with a negative closing. It 'always on. Shuts down in case of blocking the operation of the device or lack of power. The working scheme of this output is as follows:



When the transistor is in standby, on the collector there is no tension. When activated through the resistance base, the transistor enters in conduction, giving a negative voltage output. To test the output, just connect a multimeter between the positive and the collector (on the device is present a positive voltage of +12 V). When the open collector output is active between the collector and the positive supply voltage of 12V will be measured.

Note: *On the concentrator module is only active output OCF. The outputs OC1 and OC2 are not currently used.*

Using the OCF Open Collector output

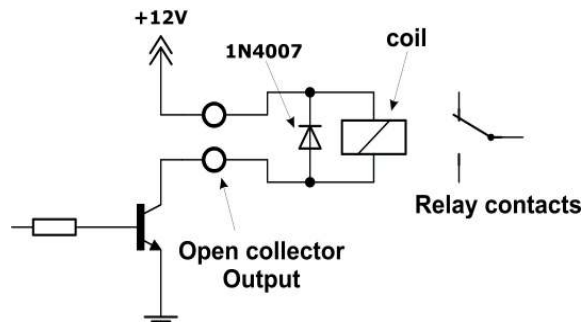
The output OCF (Open Collector Fault) is a security check of operation of the concentrator module. Its always active until the concentrator is in operation. In case of lack of both power supplies, battery and 230VAC (or fault of the fuse F1 to the concentrator without power supervised ALM-6814), or blocking the operation of one of the two microprocessors on board, there OCF output will be no voltage. Its very important to use this output when using the concentrator ALM6815 and ALM6814 in stand-alone mode. In bus mode these reports are controlled by the central unit ALM-6800.

Important Note: *The use OCF output is necessary for the reporting of the failure of the concentrator.*

Will be illustrated three ways to use this output. These rules also apply for any open collector output of any system, with close to negative.

Use first mode

12Vcc relay connection to open collector output

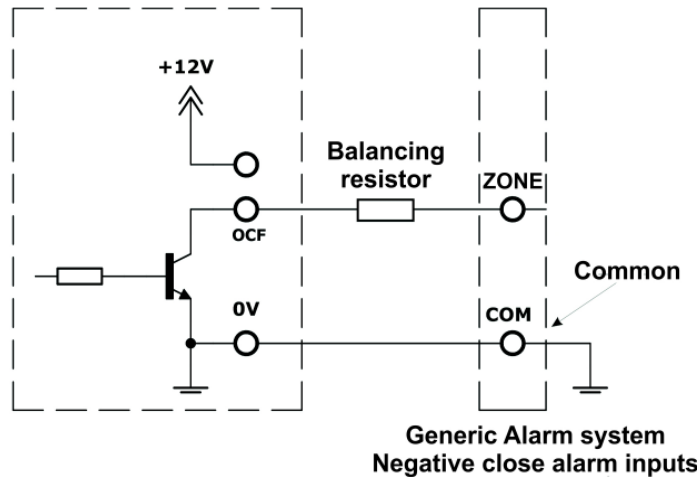


This is the simplest way to connect an open collector output that closes to negative. On ALM-6815/6814 the transistor is always on. The open collector output is turned off by the total lack of power supply or locking the device. This affects the absorption of the device of about 20mA (the absorption varies depending on the type of relay used).

Note: In the operation of the concentrator on BUS, all these reports are made automatically by the central management ALM-6800. This connection is used only for stand-alone mode.

Use second mode

Direct connection of the open collector output on a generic alarm system input

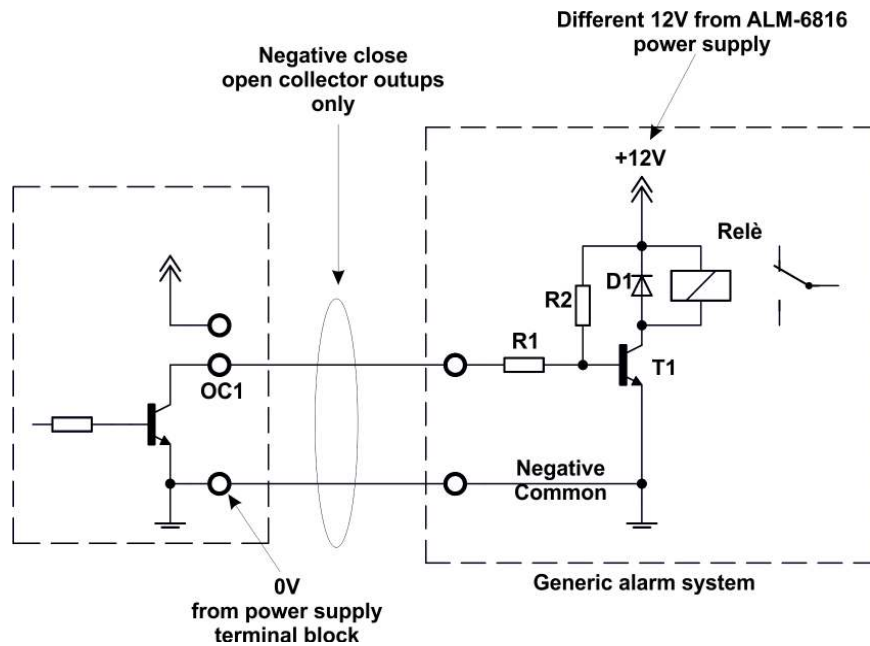


You can connect the open collector output OCF directly to an alarm input of any burglar alarm or telephone dialer that has the functional zones to negative. To test this, just check on the Central, the dialer, or expansion of inputs, the continuity between the common alarm inputs and the negative supply. If there is continuity, then you can connect the OCF as the diagram above. 0V is any negative power of the concentrator ALM-6815 / 6814 (for convenience use the negative power supply terminal X7 described on next page). Otherwise avoid this mode of connection.

Note: In the operation of the concentrator on BUS, all these reports are made automatically by the central management ALM-6800. This connection is used only for stand-alone mode.

Use third mode

Open collector output connection to a separate relay from the concentrator module



The main problem of the first connection mode described above, is that the relay is always active, increasing the absorption, per device, of about 20mA (depending on the type of relay connected). To resolve this problem just use, in addition to the relay, some components easy to find and use.

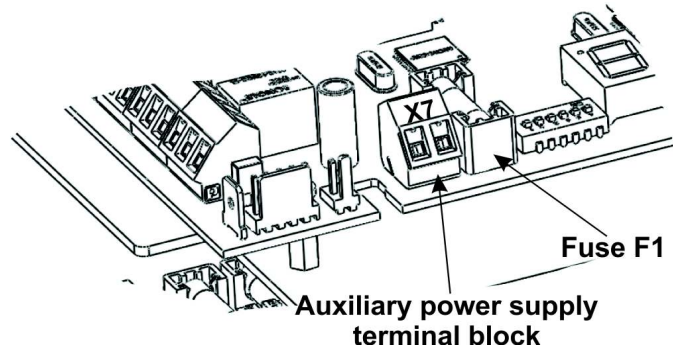
- R1: Resistor 470ohm 1/4W 5%
- R2: Resistor 15Kohm 1/4W 5%
- T1: Transistor NPN as BC337B
- D1: Diode as 1N4007
- Relè: Relay with 12V DC coil

With this mode of connection, the relay will be activated only in case of power off or locking of device operation.

Note: In the operation of the concentrator on BUS, all these reports are made automatically by the central management ALM-6800. This connection is used only for stand-alone mode.

Auxiliary power supply X7 terminal block

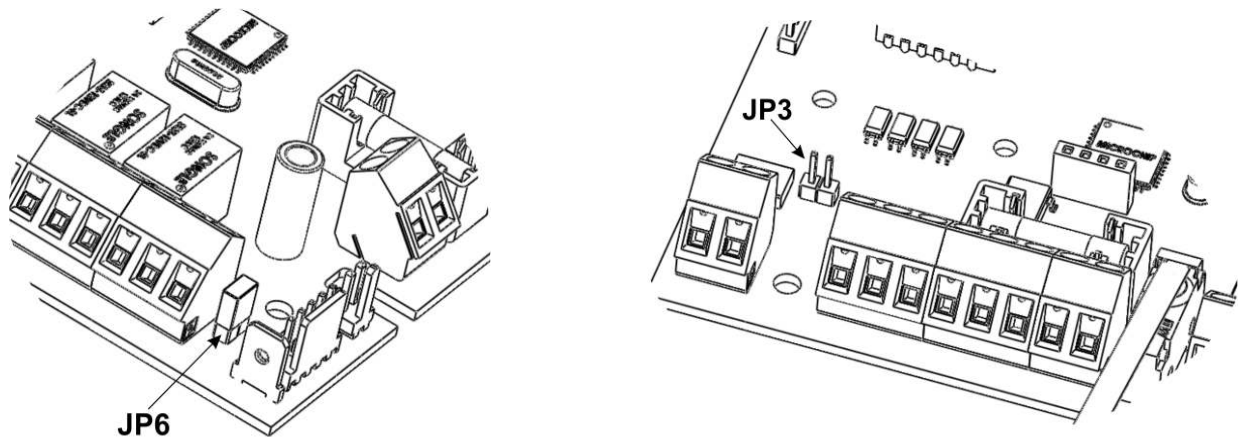
The power supply on board, has a charging circuit with a battery charge test and functionality test. In bus mode, the concentrators (only ALM-68145) have power supply test and status batteries always active. In case of failure, is reported directly to the central ALM-6800 through the bus, the number of the concentrator with the bad power supply. You can, however, use any other power supply 12V 1.5 A minimum of any brand by purchasing the only fiber concentrator power module and supervised ALM-6814. In this case it is not possible to check the presence of 230Vac and efficiency of the battery.



Fuse F1

Fuse 1A fast type, for auxiliary power supply protection. Replace with same value only.

JP6 e JP3 Jumpers

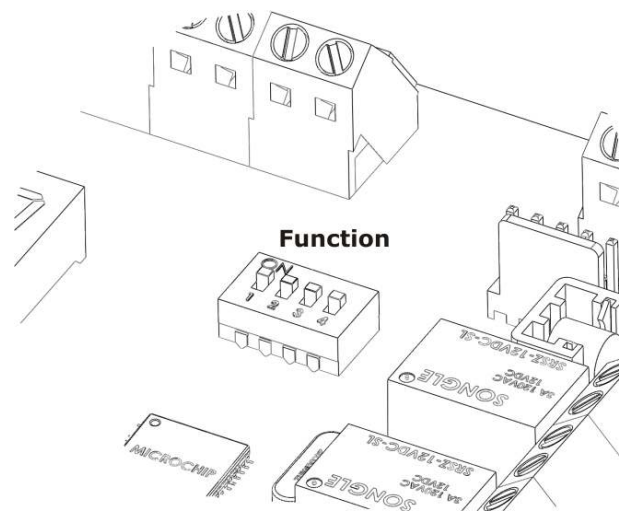


JP3: Activate the line termination. It should be activated only if requested by the Technical Service MARSS

JP6: Enable the power on of the concentrator in stand-alone mode. In BUS mode the jumper must be removed.

Dip-switch SW2 Function

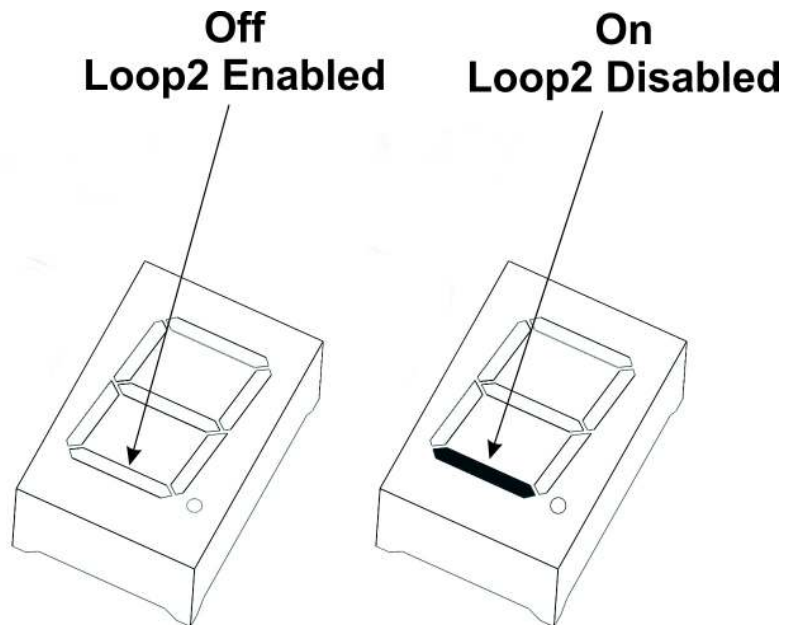
The dip-switch SW2 has 6 microswitches. Microswitch 2 is not used



The microswitch **1** is used to disable the loop fiber 2. This function is used when we use fiber loop 1 only.

Microswitch 1 ON => Loop2 Disabled (Segment on Display on)

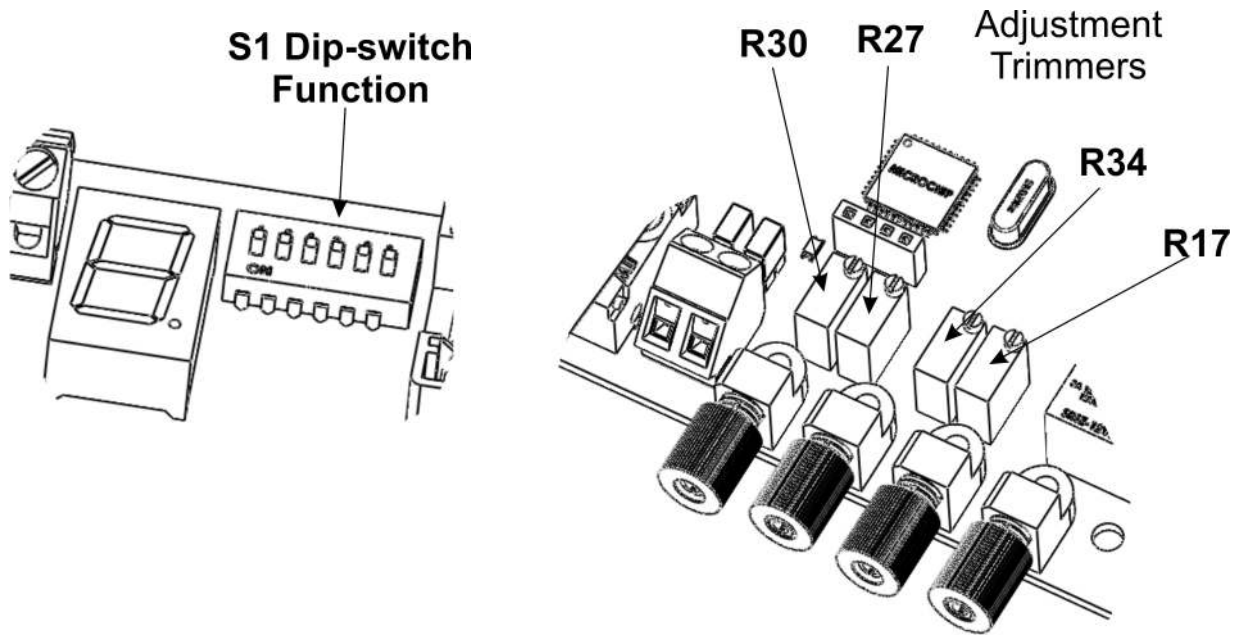
Microswitch 1 OFF => Loop2 Enabled (Segment on Display off)



The microswitches **3, 4, 5** and **6** are used to activate the control and calibration of the reading of the fiber. This way you can be sure of the best read / signal transmission through the fiber.

Loop fiber adjustment ALM-6815 and ALM-6814

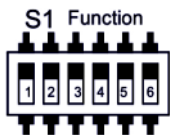
After installation of the fiber (see page 26 for connecting and passing fiber) and the concentrator module, both loop fiber must be calibrated. To do this, we use the microswitches 3, 4, 5, 6 on dip-switch function and trimmer R30, R27, R34 and R17.



Dip-switches and trimmers needed for calibration

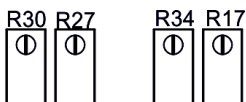
S1 Dip-switch

- **switch3** enabling calibration loop1
- **switch4** enabling calibration loop2
- **switch5** enabling fine calibration loop1
- **switch6** enabling fine calibration loop2



Adjustment trimmers

- **R30** Primary calibration loop1
- **R27** Fine calibration loop1
- **R34** Primary calibration loop2
- **R17** Fine calibration loop2



Note: If you use only the loop1 is not necessary to calibrate the Loop2

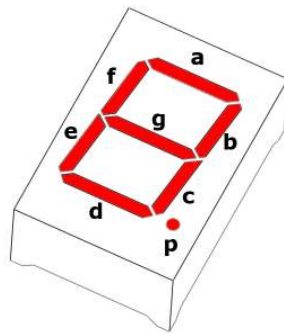
Fiber loop calibration

For the *primary calibration of the loop fiber* proceed as follows. On dip-switch "Function":

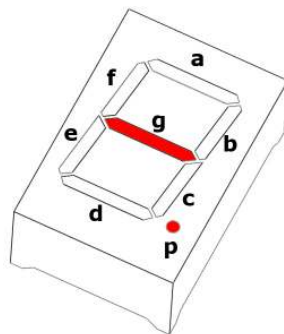


1. Ensure that the microswitch **3**, **4**, **5** and **6** are **OFF**;
2. Turn **ON** the microswitch **3** to enable adjustment of **loop1**;
Adjust the trimmer **R30** until you see on the display, the value close to **5**. To do this bring the value of reading on the display **5** and then adjust back around a quarter of the trimmer. The display will have to remains displayed the number **5** and **not 4**.
3. Return to **OFF** the microswitch **3**;
4. Turn **ON** the microswitch **4** to enable adjustment of **Loop2**;
Adjust the trimmer **R34** until you see on the display, the value close to **5**. To do this bring the value of reading on the display **5** and then adjust back around a quarter of the trimmer. The display will have to remains displayed the number **5** and **not 4**.
5. Return to **OFF** the microswitch **4**.

Once you have the value close to 5 with the primary regulation loop of fiber is possible to switch to *fine calibration*. Proceed as follows:

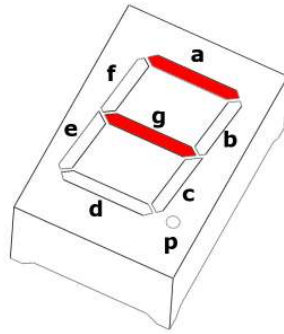


1. Ensure that the microswitch **3**, **4**, **5** and **6** are **OFF**;
2. Turn **ON** the microswitch **5** to enable the fine calibration of **loop1**;
 - Adjust the trimmer **R27** until you see on the display

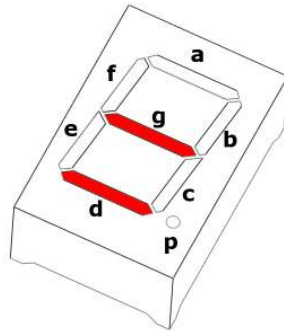


The segments "g" e "p" indicate the optimal adjustment of the fiber loop.

When adjusting the trimmer, the segment "a" and the segment "d" indicate whether it is increasing or decreasing the value of reading. In detail:



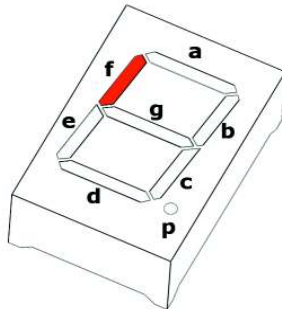
The segment "a" blinks during adjustment if the value of reading increases.



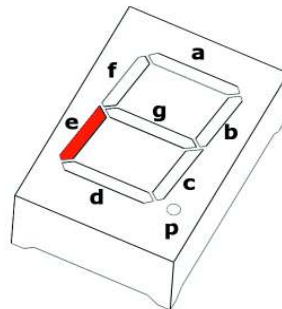
The segment "d" blinks during adjustment if the value of reading decreases.

Too high or too low value in reading are identified with the segments "f" and "e" turned on

too high value

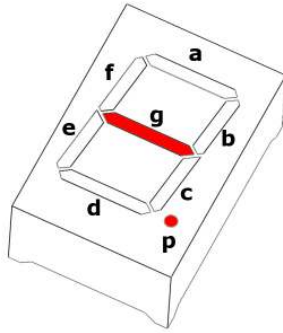


too low value

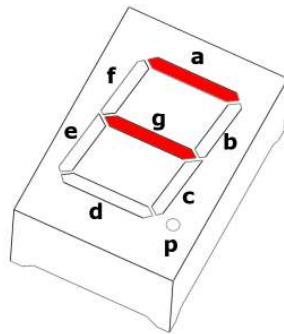


3. Turn **OFF** the microswitch **5**;

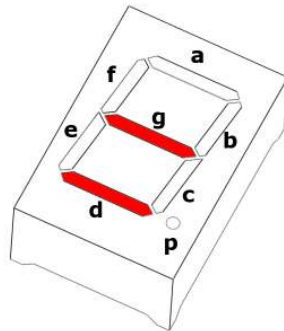
4. Turn **ON** the microswitch **6** to enable fine calibration of **loop2**;
 - Adjust the trimmer **R17** until you see on the display



The segments "g" e "p" indicate the optimal adjustment of the fiber loop. When adjusting the trimmer, the segment "a" and the segment "d" indicate whether it is increasing or decreasing the value of reading. In detail:



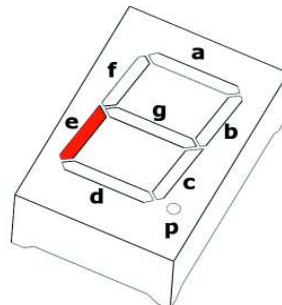
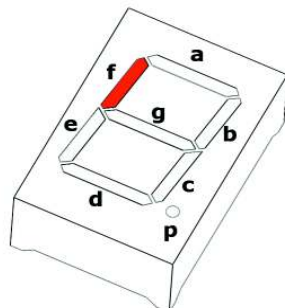
The segment "a" blinks during adjustment if the value of reading increases.



The segment "d" blinks during adjustment if the value of reading decreases.

too high value

too low value



Too high or too low value in reading are identified with the segments "f" and "e" turned on

5. Turn **OFF** the microswitch **6**.

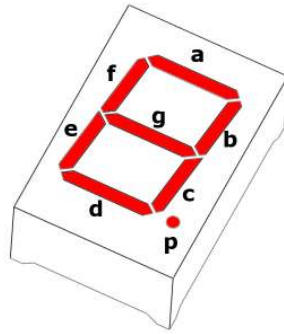
The adjustment of the fiber loop is completed. *After making adjustments, be sure that the*

microswitch 3, 4, 5 and 6 are OFF. Then press the "reset" button P1 to activate the calibration. After the initial test of about 10sec, the concentrator will be active.

Note: After adjustment, bringing the microswitch 3 or 4 in ON, you will see the value 4. There is no need to calibrate again. The microprocessor adjusts the values of optimal reading value obtained during the primary and fine adjustment.

During normal operation of the concentrator, the display must be completely powered down. The only segment that can be displayed is the "d" that remains on when you exclude the Loop2 through the microswitch of the dip-switch "Function".

Possible views of the display in addition to those listed are:



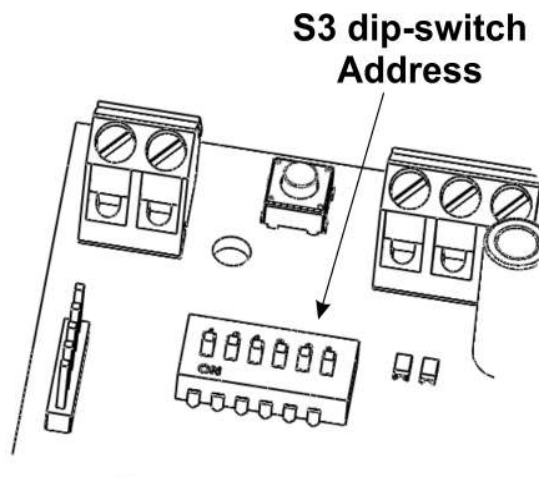
Segment "f" or "e" on: Loop1 out of alignment. Repeat the calibration procedure as described for the loop1.

Segment "b" or "c" on: Loop2 out of alignment. Repeat the calibration procedure as described for the Loop2.

Note: When the segment "d" is on indicates that the Loop2 is disabled.

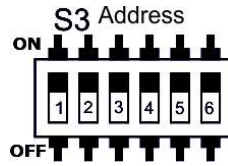
Dip-switch S3 Address microswitches 1, 2, 3, 4, 5, 6

The concentrator module, in addition to being used in standalone mode, can be connected in bus mode, and be managed by the central unit ALM-6800. In this way you can manage from a single central, up to 48 concentrator connected on a single RS-485 bus. In this mode each concentrator must have its own unique ID address.



The table below shows all the combinations for addressing the concentrator module.

Remember that the addressing operation, is performed with concentrator module in Off.



Address	Dip-6	Dip-5	Dip-4	Dip-3	Dip-2	Dip-1
00 (not used)	OFF	OFF	OFF	OFF	OFF	OFF
01	OFF	OFF	OFF	OFF	OFF	ON
02	OFF	OFF	OFF	OFF	ON	OFF
03	OFF	OFF	OFF	OFF	ON	ON
04	OFF	OFF	OFF	ON	OFF	OFF
05	OFF	OFF	OFF	ON	OFF	ON
06	OFF	OFF	OFF	ON	ON	OFF
07	OFF	OFF	OFF	ON	ON	ON
08	OFF	OFF	ON	OFF	OFF	OFF
09	OFF	OFF	ON	OFF	OFF	ON
10	OFF	OFF	ON	OFF	ON	OFF
11	OFF	OFF	ON	OFF	ON	ON
12	OFF	OFF	ON	ON	OFF	OFF
13	OFF	OFF	ON	ON	OFF	ON
14	OFF	OFF	ON	ON	ON	OFF
15	OFF	OFF	ON	ON	ON	ON
16	OFF	ON	OFF	OFF	OFF	OFF
17	OFF	ON	OFF	OFF	OFF	ON
18	OFF	ON	OFF	OFF	ON	OFF
19	OFF	ON	OFF	OFF	ON	ON
20	OFF	ON	OFF	ON	OFF	OFF
21	OFF	ON	OFF	ON	OFF	ON
22	OFF	ON	OFF	ON	ON	OFF
23	OFF	ON	OFF	ON	ON	ON
24	OFF	ON	ON	OFF	OFF	OFF
25	OFF	ON	ON	OFF	OFF	ON
26	OFF	ON	ON	OFF	ON	OFF
27	OFF	ON	ON	OFF	ON	ON
28	OFF	ON	ON	ON	OFF	OFF
29	OFF	ON	ON	ON	OFF	ON
30	OFF	ON	ON	ON	ON	OFF
31	OFF	ON	ON	ON	ON	ON
32	ON	OFF	OFF	OFF	OFF	OFF
33	ON	OFF	OFF	OFF	OFF	ON
34	ON	OFF	OFF	OFF	ON	OFF
35	ON	OFF	OFF	OFF	ON	ON
36	ON	OFF	OFF	ON	OFF	OFF
37	ON	OFF	OFF	ON	OFF	ON
38	ON	OFF	OFF	ON	ON	OFF
39	ON	OFF	OFF	ON	ON	ON
40	ON	OFF	ON	OFF	OFF	OFF
41	ON	OFF	ON	OFF	OFF	ON
42	ON	OFF	ON	OFF	ON	OFF
43	ON	OFF	ON	OFF	ON	ON
44	ON	OFF	ON	ON	OFF	OFF
45	ON	OFF	ON	ON	OFF	ON
46	ON	OFF	ON	ON	ON	OFF
47	ON	OFF	ON	ON	ON	ON
48	ON	ON	OFF	OFF	OFF	OFF

Addressing the concentrator will be disabled automatically the stand-alone mode and reset button P1 functionality. In case of block of the concentrator module, is possible to reset by switch off the power supply and switch on after a few seconds. To reactivate the stand-alone mode, turn all the addressing microswitches (1, 2, 3, 4, 5, 6) to OFF witch concentrator switched off.

Jumper JP3

Use only if requested by the technical department MARSS

Seven Segments Display

The 7-segment display on board shows which loop fiber signalling cut or torsion alarm. The messages displayed are:



Fiber Loop1 in alarm

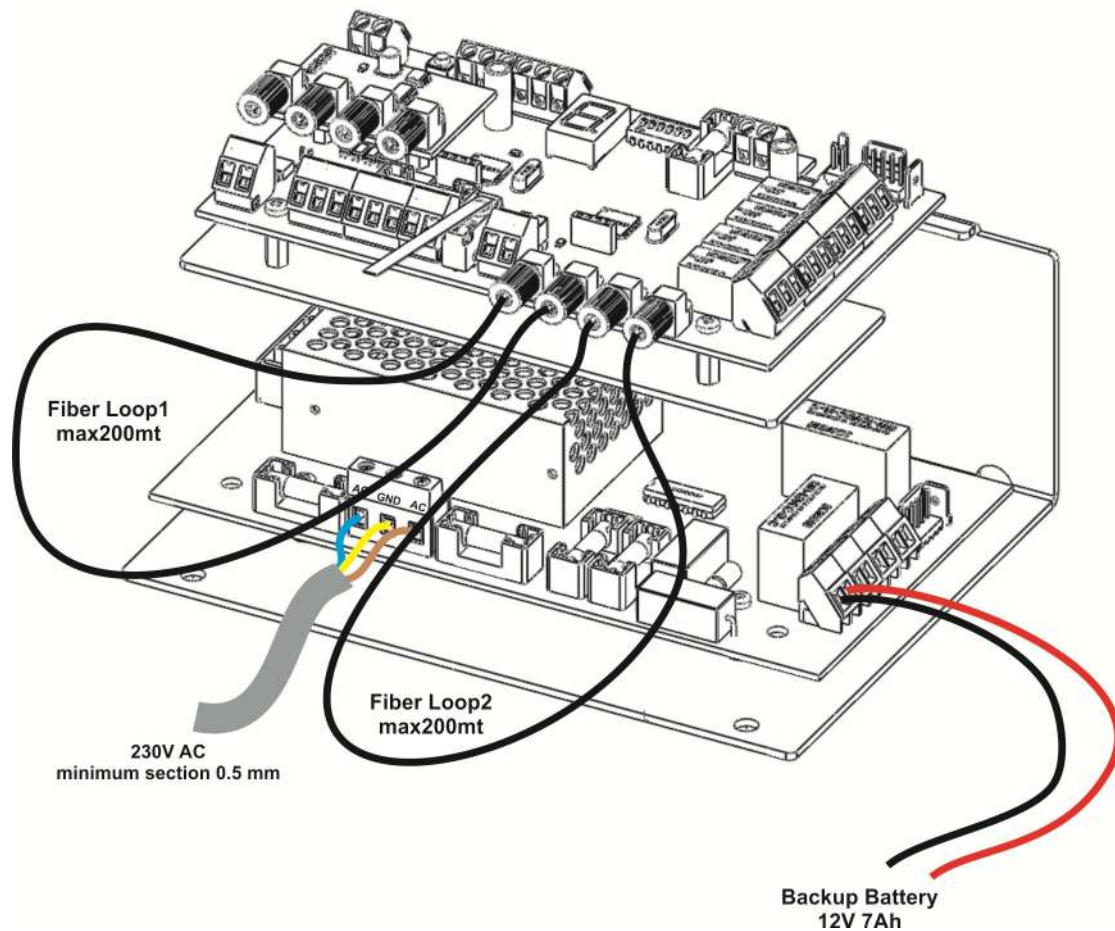


Fiber Loop1 in alarm

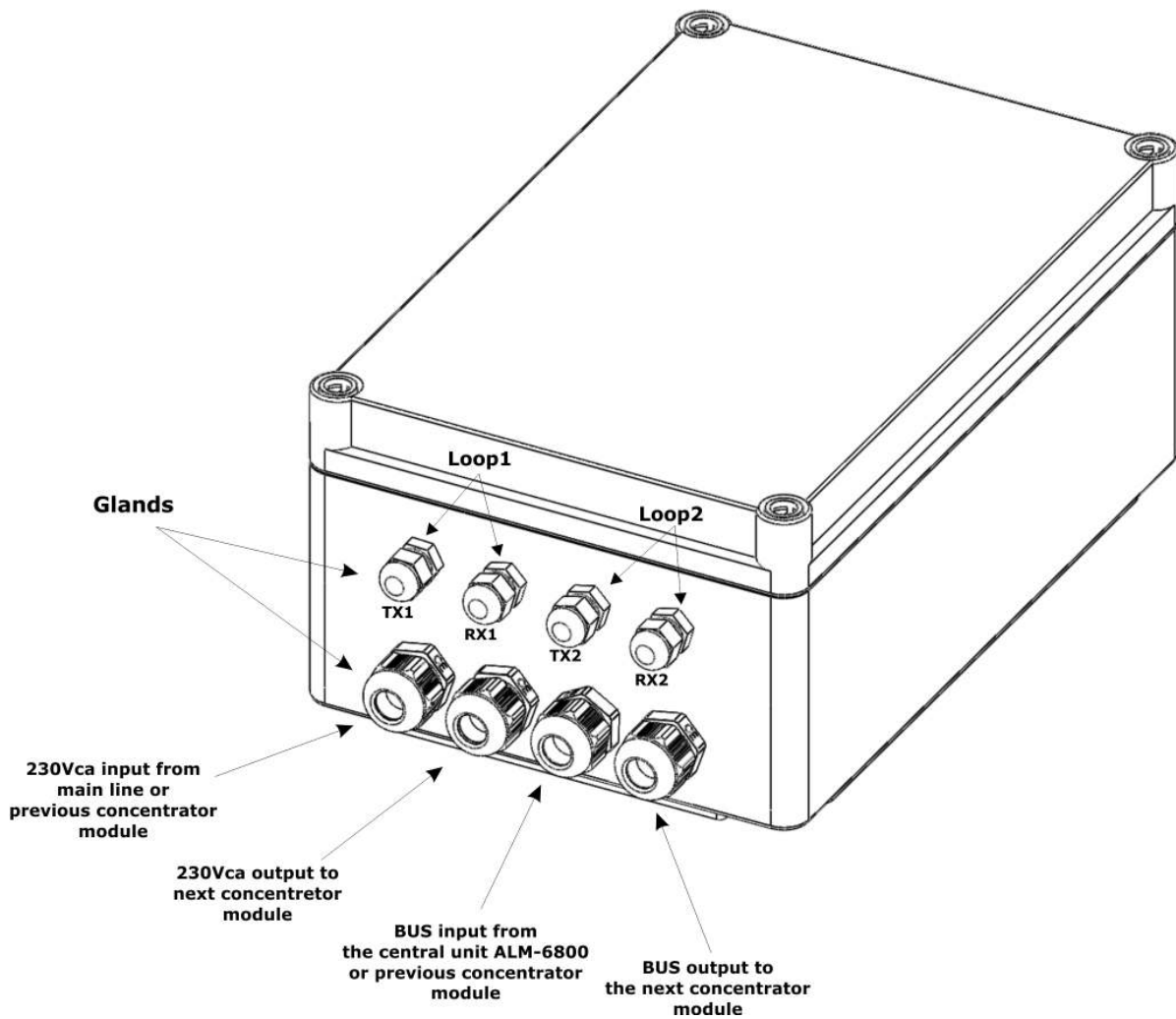


Segment ON Loop2 disabled. Segment OFF Loop2 activated.

Wiring inside the container

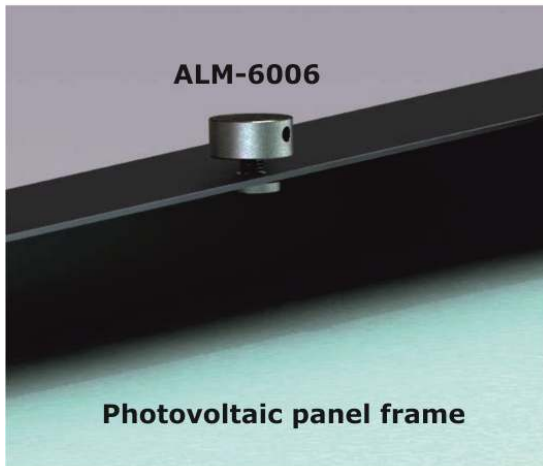


Cable gland on the container

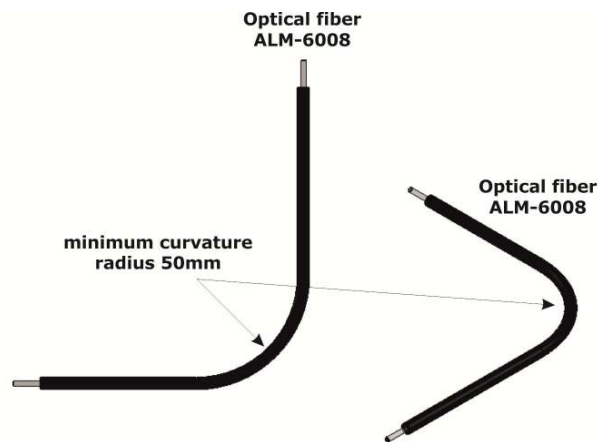
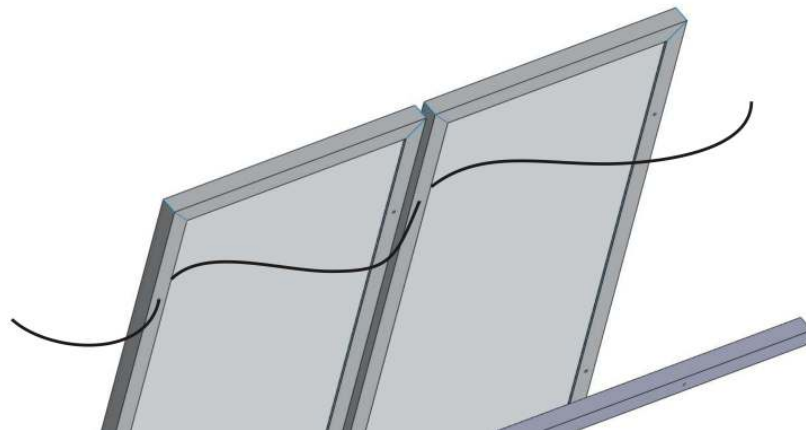


Note: The optical fiber must be passed through the four cable gland of the container. After installation of the fiber, the cable glands must be tightened.

Connection and passing of the optical fiber with ALM-6006 (MARSS Patent)

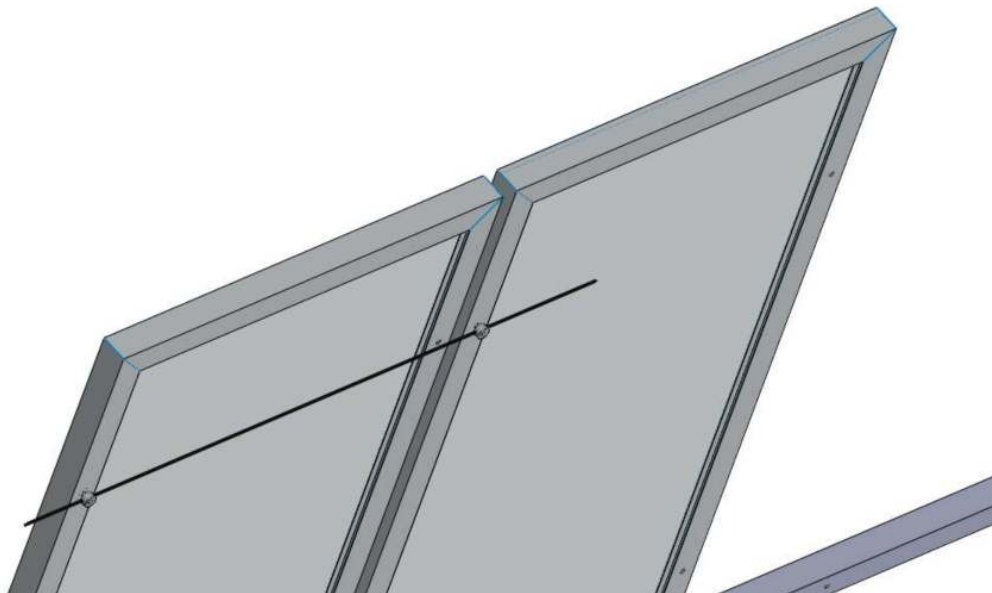
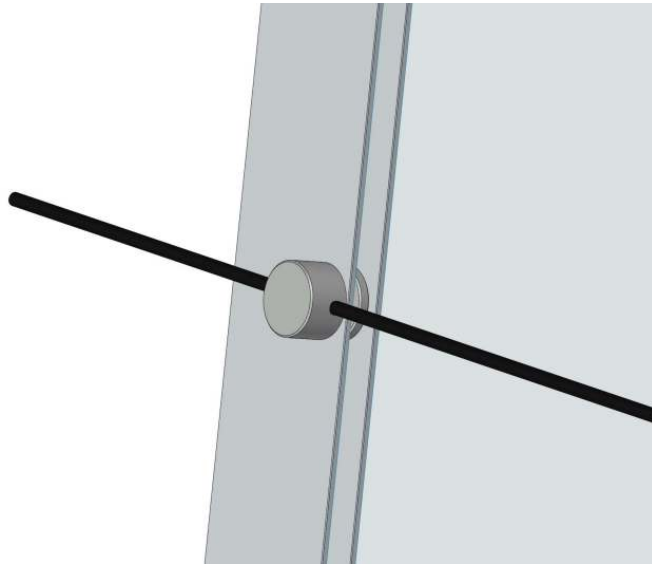


Most photovoltaic panels have holes on the frame that are often not used. Through these holes you can make it through the optical fiber, but with the risk of getting too tight curves that can drastically affect the transmission of optical signal. The passage of the fiber in this case, presents many difficulties and risks of excessive abrasion of the fiber.



The ALM-6006 is designed to facilitate the installation of optical fiber through the panels and won several advantages:

- 70% reduction of time installing the fiber optic
- Installation of the fiber with precision
- Mechanical protection of the panel



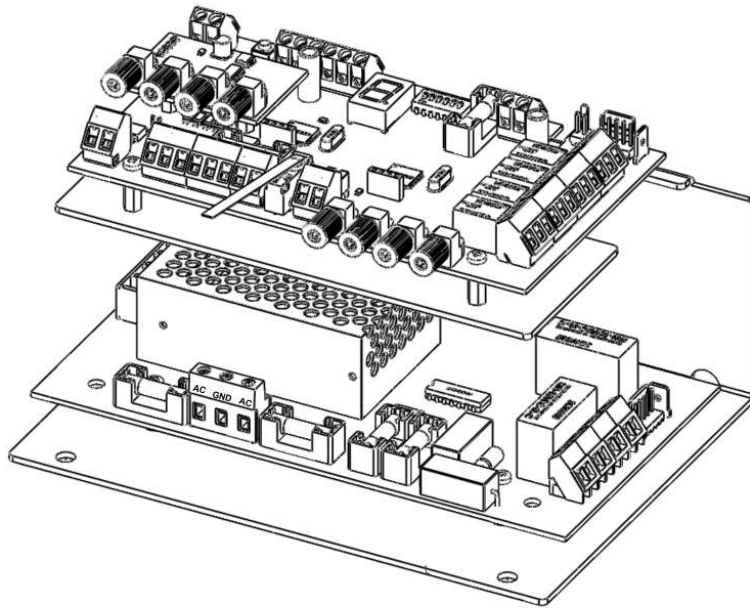
Minimum curvature of the fiber

The minimum radius for sending and reading of the optical signal through the fiber, must be greater than or equal to 50mm. A curvature with radius smaller, in addition to causing damage to the fiber with the inevitable replacement of the same, will dramatically reduce the transmission and reception of the signal, causing alarm cut fiber signaling.

The optimal reading of signal through the fiber, is calibrated to a maximum length of about 200m. If you use longer lengths, the transmission / read signal may be less than the threshold value set on the concentrator module. In this way will be possible false alarm cut fiber signaling. Therefore, the plastic optical fiber (ALM-6008) is supplied in reels of 200 meters.

The fiber can be fixed with cable ties and making sure that all the curves that will be available during installation, can be as "soft" (50mm radius).

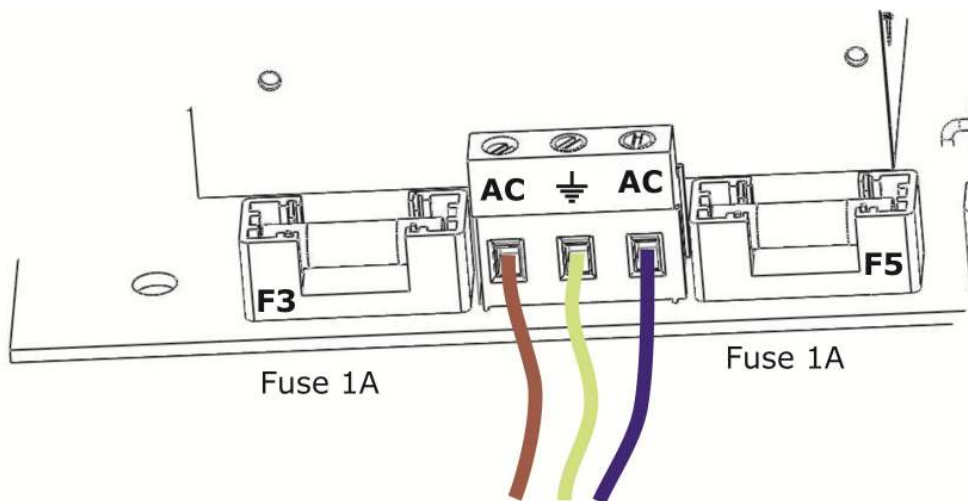
Power Supply features (ALM-6815 model only)



Terminal blocks on power supply module

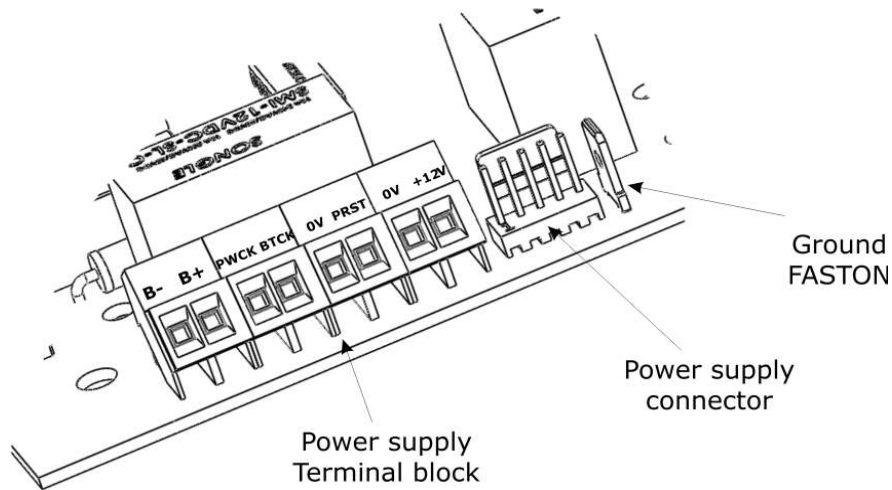
230Vac terminal block

7.62 mm pitch terminal block for connecting the voltage 230V AC 50Hz. The 230V line is protected by two fast fuses 1A (F3, F5). Replace fuses F3 and F5 only with equal values, and use cables with a minimum section of 0.5 mm.



Important: All concentrators must be grounded via terminal supply 230Vac. If not connected, it could cause damage due to lightning or surges.

Power Supply connection



The concentrator is powered by the 5-pin connector. On board power supply is also an 8-pin terminal block.

Terminal Block	Description
B-	Negative of backup Battery
B+	Positive of backup Battery
PWCK	230Vac failure Open collector output
BTCK	Backup Battery failure Open collector output
PRST	Input reset via BUS
+12V	Auxiliary output 12V <u>max500mA</u>

Autonomy of operation with battery backup

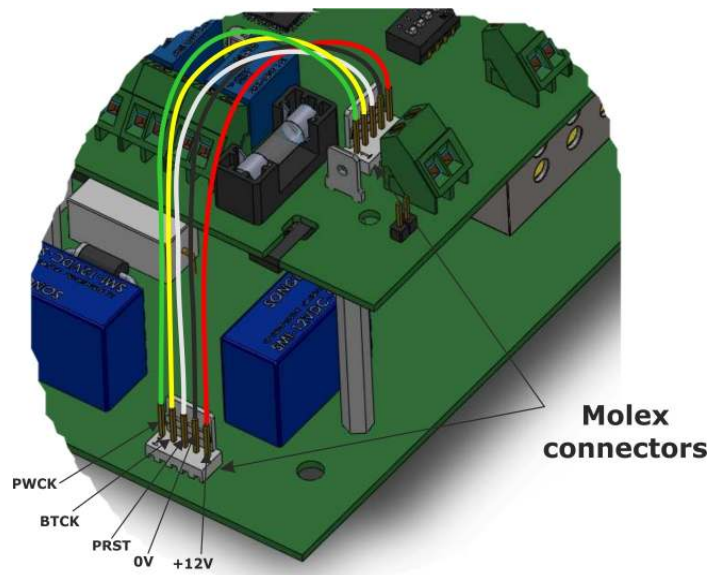
The operating autonomy in standby with battery 12V 7Ah tested in the absence of 230V is 60 hours (with battery efficient). The data refer to the concentrator module ALM-6815 with the supervised power supply module.

Note: The autonomy of operation with battery depends on:

- **The type of battery used;**
- **The condition of the battery used (recommended periodic replacement of batteries within 2 years and not beyond, from the installation);**
- **From load applied to terminal +12 V (500mA max).**

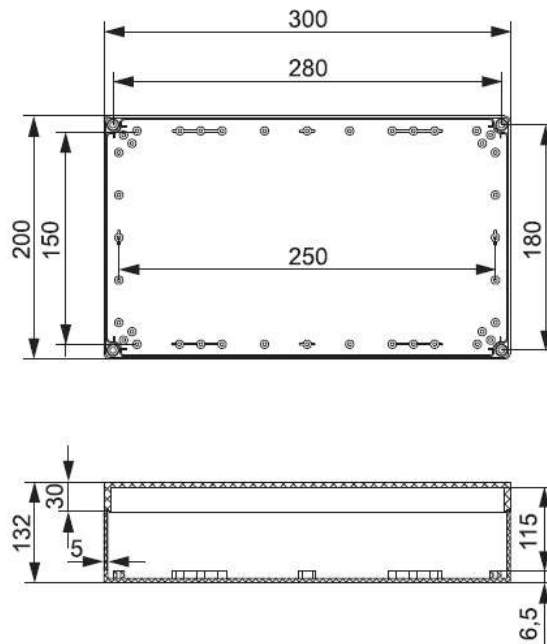
Features the switching power supply on board

- Input Voltage 88 ~ 264VA
- Frequency 47 ~ 63Hz
- Output Voltage 15V (13.5 ~ 16.5V adjustable)
- Maximum current 1.7 A
- Rated power 25W
- Dimensions 78x51x28mm
- Operating temperature -20 ° C ~ 70 ° C
- Working Humidity 20 ~ 90%
- Protection Overcurrent and overvoltage protection on input and output



TECHNICAL SPECIFICATIONS

- N.ro Loop on board: 2 (Loop 1, Loop 2)
- Manageable fiber optic loop: Max 200 (mt)
- Manageable type optical fiber: Fiber optic plastic model The ALM-6008
- Loop Alarm outputs: 2 (Loop 1, Loop 2)
- Auxiliary outputs: 3 (power failure, battery failure, tampering)
- Power supply: 230 Vac, 50Hz
- Backup Power: Battery 12Vdc / 1.2 Ah
- Consumption in stand-by (not in alarm): 80mA max
- Consumption for both loops in Alarm: 100mA max
- Average time on battery power: > 8 hours in alarm
- Dimensions (mm) (WxHxD): 200x300x132



Note:

Note:

A series of 24 horizontal lines provided for handwritten notes.



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MANUFACTURERS DECLARATION OF CONFORMITY



The company **MARSS srl**,
Via Cavallo, 73 - 73030 Tiggiano (Le)


Declares under its own responsibility that the

product	Module for optical fiber with torsion, 12 Vcc
model	ALM-6814
product	Module for optical fiber with torsion, 220 V.
model	ALM-6815

complies to the essential requirements of **Electromagnetic and Security Compatibility** of the European Directives 2004/108/EC (EMC) and 2006/95/CE (EMC) and than is in conformity with the harmonized norms EN 50130-4, EN 61000-6-3, EN 60950.

The compliance with these essential requirements is evidenced by affixing the "**CE**" logo on "product and / or the packaging and instructions for use"

Tiggiano, April 6th, 2011
(Place, Data)


Marss srl
Legal Representative
Ippazio Martella

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