SIEMENS

SiPass integrated

AFO5100

Installation manual

Content

1 Output Point Module (AFO5100)

Fig. 1   Output Point Module

1.1 Product Description

The AFO5100 is an Output Point Module used as part of a Siemens integrated access control and security solution. It provides an interface between an Advanced Access Controller (ACC) and up to 16 input and 16 output devices.

The AFO5100 can operate as an interface to an elevator management system. Each OPM can enables access at up to 16 floors.

The instructions in this installation sheet describe how to mount and wire the AFO5100 inside a standard enclosure. For more information on wiring an OPM in an elevator system see the OPM User's Guide.

1.2 Product Numbers

6FL7820-8CC10   AFO5100 – Output Point Module and base-plate

1.3 Prerequisites

- Input Devices to be connected to the OPM
- Cabling (RS485)

1.4 Required Tools & Materials

- Medium-duty drill and associated drill-bits (if required)
- 4 mounting screws or standoffs (approx. 4mm)
- Flat-blade terminal screwdriver
- Wire cutters
- Cable strippers

1.5 Expected Installation Time

30 minutes

1.6 Mounting Instructions

1. Remove the AFO5100 from its carton and discard the packaging material.

2. Place the AFO5100 (base-plate) against the surface to which it is to be affixed and mark the location of the mounting holes.
    If being mounted within a cabinet, simply align the AFO5100 base-plate with the holes located on the cabinet backplane and proceed to step 3.
    It is recommended that you affix the AFO5100 in all four of the mounting locations.

    ⚠ **WARNING**   Do not apply power to the AFO5100 or associated components at this stage.

3. Select the appropriate drill bit according to the mounting surface / hole size and drill the holes in the locations marked (if required).

4. Fasten the AFO5100 base-plate to the surface using the correct type of screws or standoffs for the surface.

5. Connect the cabling to the AFO5100 PCB (as described in the next section titled 'Wiring').

6. Apply power to the AFO5100 and test its operation.
    This step may require installation and programming of the access control host software and download of the firmware instruction set.
    Alternatively, the firmware and configuration may be carried out using the FLN Field Service Tool.

1.7 Wiring

1. It is recommended that you wear a grounding strap while carrying out this procedure.

2. Connect all input devices to the INPUT ports.

3. Connect any devices to the OUTPUT ports.

4. Connect appropriate wiring to the FIRE OVERRIDE INPUT port if required.

> **i** Listed end-of-line resistors must be connected to the Fire Over-ride Input wires if you are implementing Enhanced Fire Over-ride. Enhanced mode requires the connection of 22Kohm supervision resistor circuits. Cable must be shielded and total cable run resistance must not exceed 100 Ohms. Cable shield must be unconnected at the device end and connected to the board ground at the OPM end.

5. Connect the next device in the Fire Override sequence to the FIRE OVER-RIDE OUTPUT port if required.

6. Connect the FLN wires (from the ACC) to the RS485 BUS port.

7. If the FLN cable is long or subject to high noise, ensure that the jumper across link LK28 (EOL) has been made. This applies <u>only</u> if the OPM is sitting at the end of a bus line.

8. Connect the active (+ve) and neutral (-ve) wires from the Power Supply Unit (PSU) to the POWER IN port. Ensure the polarity of the connection is made correctly.

9. Check all connections thoroughly.

10. Power can now be applied to the AFO5100.
    The following diagram displays the layout and dimensions of the AFO5100 with brace attached:

Siemens Building Technologies
Fire Safety & Security Products
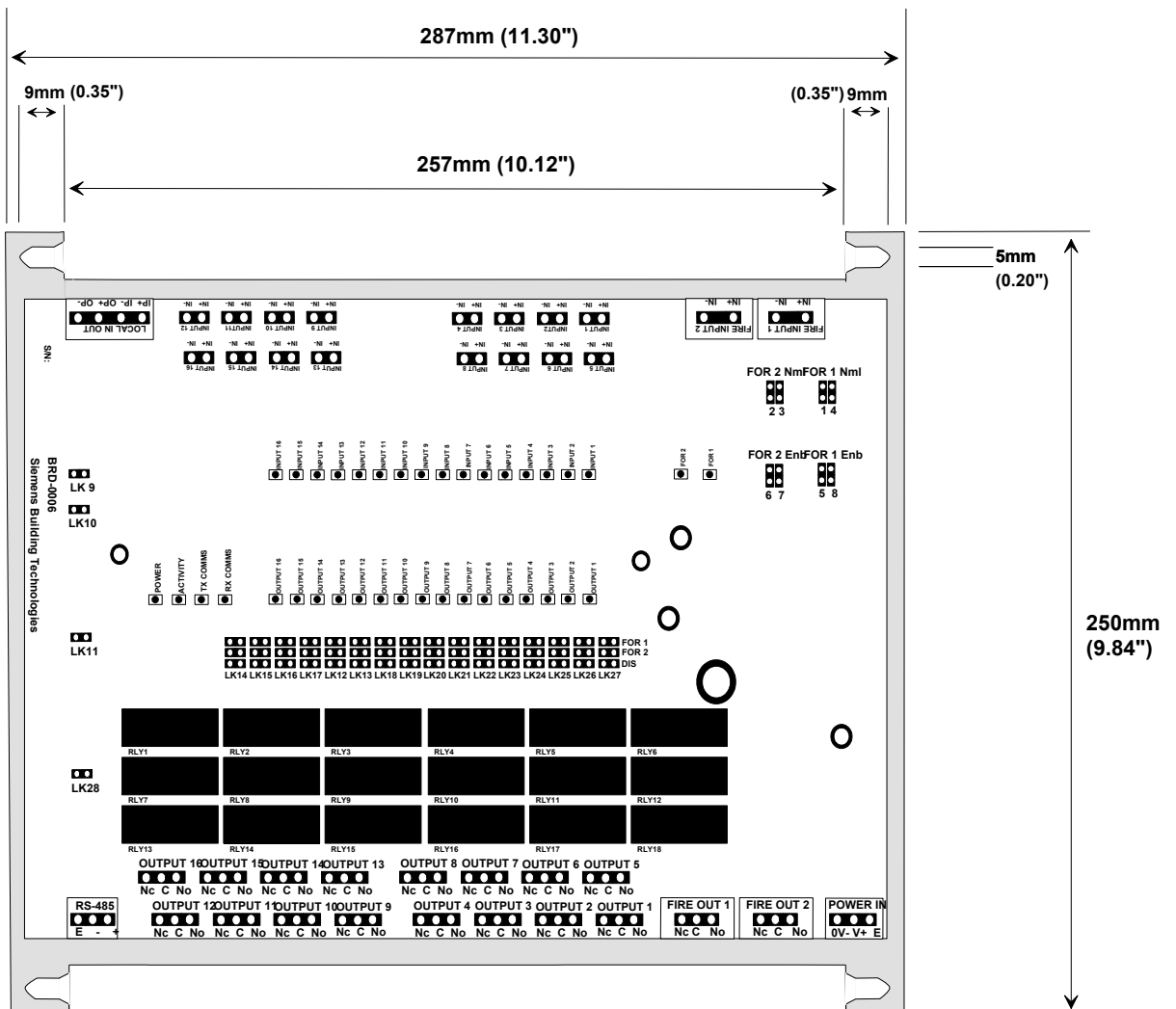
Output Point Module (AFO5100)

The following diagram displays the location of the ports on the AFO5100:
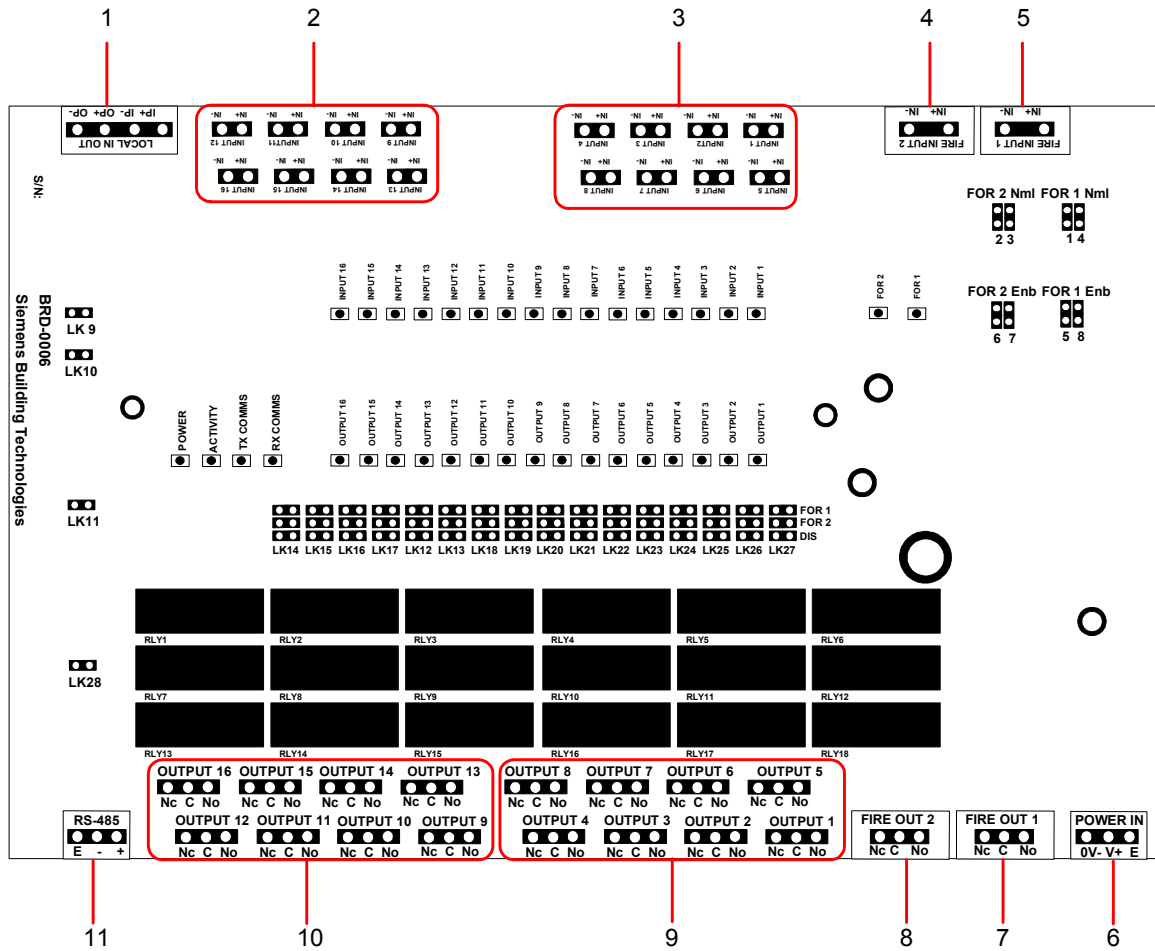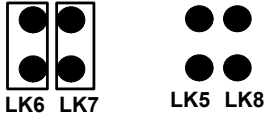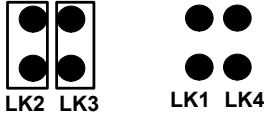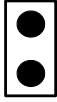
The following table provides a brief description of each port:

	Port Name	Brief Description
1	LOCAL IN OUT Tamper In/Out Port	Local input and output for tamper detection and alarm
2, 3	INPUT 1 – INPUT 16 Input Ports	Inputs for connection to monitoring and input devices
4, 5	FIRE INPUT Fire Over-ride Input Ports	Inputs for Fire Over-ride wiring
6	POWER IN	DC Power input
7, 8	FIRE OUT Fire Over-ride Output Port	Fire Over-ride for connecting devices in Fire Over-ride sequence
9, 10	OUTPUT 1 - OUTPUT 16 Output Ports	Auxiliary Relay-driven Outputs
11	RS485 BUS	RS485 communications port for connection to an ACC FLN channel

1.8   Links and Jumpers

The following table outlines the link settings for the AFO5100:

Link	Description	Value
LK5 + LK8 LK6 + LK7	These links control whether Fire Over-ride (FOR) activation is enabled. If the links are set to FOR operation, activation of the FOR input will cause the output relays to de-energize and to return to the NO position. If the links are set to the normal position, FOR input will have no effect on the state of the output relay.	Placing the jumper over both links enables Fire Over-ride for that input. Removing the jumpers disables Fire Over-ride. **FOR 2 enb** **FOR 1 enb** **LK6 LK7** **LK5 LK8** In the above diagram, FOR input 2 is enabled and FOR input 1 is disabled.
LK1 + LK4 LK2 + LK3	These links are used to configure the Fire Over-ride (FOR) mode to be used. The settings will determine whether the relay blocks on the OPM operate in Enhanced FOR mode or Normal.	Placing the jumper over both links indicates that the input will operate in FOR Normal Mode. Removing the jumpers indicates Enhanced mode. **FOR 2 nml** **FOR 1 nml** **LK2 LK3** **LK1 LK4** In the above diagram, FOR input 2 in set to Normal Mode and FOR input 1 is set to Enhanced mode.
LK9	LK9 affects the reset action when the RESET link (LK11) is set and the power turned on. See LK11 below for a description of how to reset the unit.	**LK9** If the jumper on Link 9 is set as shown, it is in "Full Reset" mode. **LK9** If the jumper on LK9 is taken off, it is in "Partial Reset" mode.
LK10	This link is a general purpose link that has been included for further enhancement of the system.	
LK11	Memory Clear and Reset Setting LK11 and turning the power off and on will reset the OPM. A full or partial reset will occur depending on whether LK9 has the jumper placed on or not. If LK9 is set to on, the OPM will fully reset and any firmware loaded into the memory will be erased. You will need to re-program the OPM with firmware again before it can operate. If LK9 is set to off, the microcontroller will be rebooted but the firmware will remain in memory.	

Link	Description	Value	
Links 12 – 27	These links control the Fire Over-ride activation for each individual relay output 1 – 16. Depending on where you place the link, the relay output will be activated from FOR input 1, FOR input 2, or FOR will be disabled for that output.	 In the above diagram, Output 1 (controlled by Link 27) is set to respond to FOR Input 1, Output 2 (Link 26) is set to respond to FOR Input 2, and Output 3 (Link 25) has FOR input disabled and will not be affected by changes in the state of the FOR inputs.	
LK28	EOL Termination (Bus) This link allows the RS485 BUS communications channel to be terminated in noisy or lengthy comms. Note: This link should only be set for units that are located at the end of bus lines.	RS485 BUS port not terminated. **EOL485** **LK28**	RS485 BUS port terminated. **EOL485** **LK28**

1.9   LEDs

The following table describes the operation of the LEDs located on the AFO5100:

LED	Brief Description
POWER	The POWER led is illuminated when power has been applied to the device.
ACTIVITY	The ACTIVITY led indicates that the AFO5100 is accessing information contained in its internal database or performing a routine operation. This LED also indicates whether the initial instruction set has been downloaded. If power is applied and the LED blinks quickly, the AFO5100 instruction set (firmware) needs to be downloaded. If the LED is blinking slowly, approximately once per second, a firmware set has already been downloaded.
Tx COMMS	The Transmission COMMS LED flashes when the OPM is sending data to the ACC to which it has been connected (via an FLN).
Rx COMMS	The Transmission COMMS LED flashes when the OPM is receiving data from the ACC to which it has been connected (via an FLN).
Inputs	The tricolor Input Port LEDs indicate the current status of the input port. See the table below for an explanation of the colors.
Outputs	Each Output Relay has a corresponding LED that is illuminated when the relay is activated.
Fire Over-ride	The Fire LED is illuminated when Fire Over-ride has been activated.

Each Fire Over-ride LED may be in one of three states as indicated by color. If the FOR Input port has not been wired for supervision, only the Normal Input states will be applicable.

LED Color	Fire Over-ride status
Red	Denotes FOR Tamper: Open or Closed
Green	Denotes FOR Normal: Closed
Orange	Denotes FOR Normal: Open (alarm)

1.10   Recommended Cable Specifications

The following table outlines the cable recommended for connection of an integrated security system:

Communication Type	Recommended Cable Specifications							
	Core	Pairs	AWG	Stranding	Wire Type	Insulation	Shield	Jacket
RS485	4	2	28	7 x 36	Tinned Copper	Foam Polyethylene	Aluminum foil- Polyester tape/ braided shield	PVC
	6	3	28	7 x 36	Tinned Copper	Foam Polyethylene	Aluminum foil- Polyester tape/ braided shield	PVC
	8	4	28	7 x 36	Tinned Copper	Foam Polyethylene	Aluminum foil- Polyester tape/ braided shield	PVC
RS232	4	2	24	7 x 32	Tinned Copper	Foam Polyethylene	Aluminum foil- Polyester tape/ no braid	PVC
	6	3	24	7 x 32	Tinned Copper	Foam Polyethylene	Aluminum foil- Polyester tape/ no braid	PVC
	8	4	24	7 x 32	Tinned Copper	Foam Polyethylene	Aluminum foil- Polyester tape/ no braid	PVC
RS422	4	2	24	7 x 32	Tinned Copper	Foam Polyethylene	Aluminum foil- Polyester tape/ no braid	PVC
	6	3	24	7 x 32	Tinned Copper	Foam Polyethylene	Aluminum foil- Polyester tape/ no braid	PVC
	8	4	24	7 x 32	Tinned Copper	Foam Polyethylene	Aluminum foil- Polyester tape/ no braid	PVC
RJ-45	8	4	24	Solid	Bare Copper	Polyethylene	Unshielded	PVC
	8	4	24	7 x 32	Tinned Copper	Polyethylene	Unshielded	PVC
RJ-12	8	4	24	Solid	Bare Copper	Polyethylene	Aluminum foil- Polyester tape/ no braid	PVC
	8	4	24	7 x 32	Tinned Copper	Polyethylene	Aluminum foil- Polyester tape/ no braid	PVC
Power (12/24 V DC)	2	1	18	19 x 30	Tinned Copper	Foam Polyethylene	Unshielded	PVC

> **i**   The previous table provides a guideline for selecting an appropriate cable type only. Other cable types are also compatible with the system and can be used to achieve the same results.

1.11   Programming and Firmware Download

The AFO5100 is programmed using the host software application via the ACC, or using the FLN Configurator Field Service Tool application. Please refer to the appropriate User's Guide for more Information.

> **i**   Information in this document is based on specifications believed correct at the time of publication. The right is reserved to make changes as design improvements are made.