Honeywell

Safety Manager
Release 162

Hardware Reference

EP-SM.MAN.6284

Issue 2.1 | December 2023

- Original Instructions -

5 Chassis

This chapter describes the following chassis:

Chassis		See
General info about chassis		General info about chassis
Safety Manager		
CPCHAS-0001	Chassis for redundant or non-redundant Controller (Safety Manager)	CPCHAS-0001
IOCHAS-0001S	IO Chassis for non-redundant IO modules (Safety Manager)	IOCHAS-0001S
IOCHAS-0001R	IO chassis for redundant IO modules (Safety Manager)	IOCHAS-0001R
Safety Manager A.R.T.		
CPCHAS-0002	Chassis for redundant Controller (Safety Manager A.R.T.)	CPCHAS-0002
IOCHAS-0002S	IO Chassis for non-redundant IO modules (Safety Manager A.R.T.)	IOCHAS-0002S
IOCHAS-0002R	IO chassis for redundant IO modules (Safety Manager A.R.T.)	IOCHAS-0002R
Safety Manager		
CPCHAS-0003	Chassis for redundant or non-redundant Controller (Safety Manager)	CPCHAS-0003
IOCHAS-0003S	IO Chassis for non-redundant IO modules (Safety Manager)	IOCHAS-0003S
IOCHAS-0003R	IO chassis for redundant IO modules (Safety Manager)	IOCHAS-0003R

5.4 IOCHAS-0001R

IO chassis for redundant IO modules (Safety Manager)

5.4.1 Description

The IOCHAS-0001R is a chassis for up to 9 pairs of redundant IO modules.

It consists of the following components:

Components of the IOCHAS-0001R[1] V1.0

Component	Amount	Description	See
IO housing	1	19 inch mechanical case including cover plates for up to 18 IO modules	IO Housing
IO-0001	2	IO Extender modules, slot 20 and 21	IO-0001
Blind front	1		

Components of the IOCHAS-0001R[1] CCV1.0

Component	Amount	Description	See
IO housing	1	19 inch mechanical case including cover plates for up to 18 IO modules	IO Housing
IO-0001	2	IO Extender modules, slot 20 and 21	IO-0001
Blind front	1		

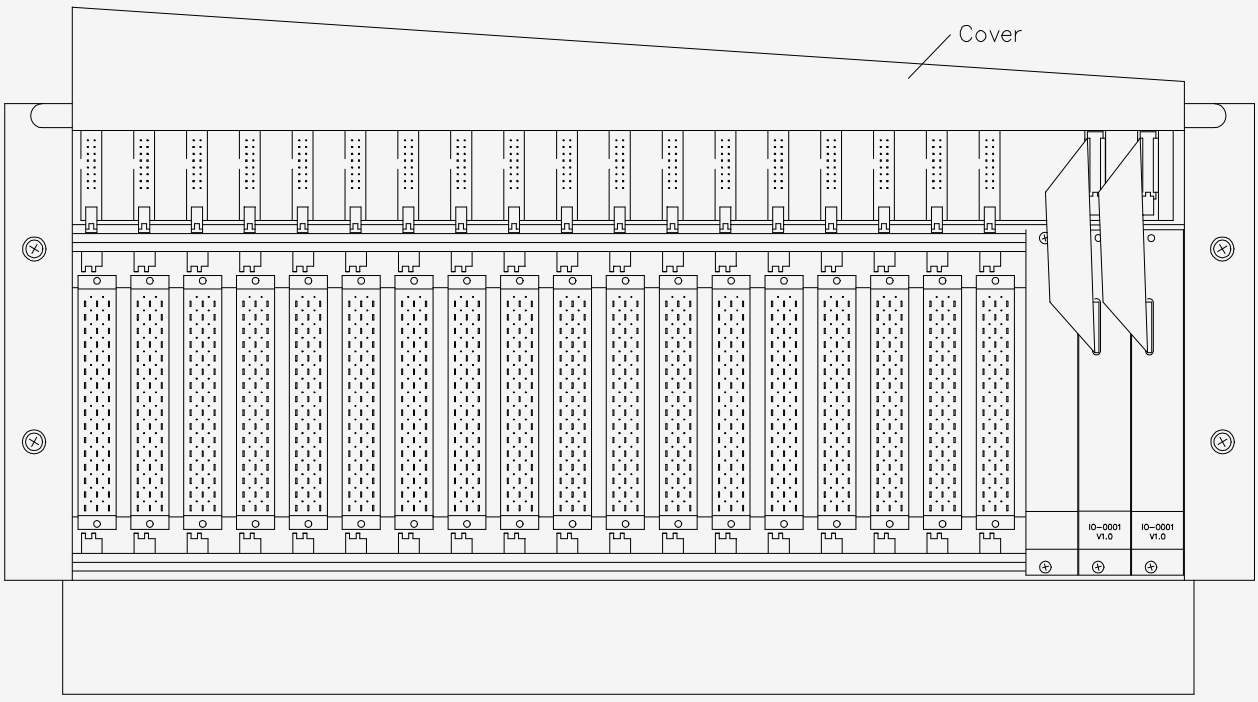


Figure 5-13: Front view of an empty IOCHAS-0001R

The above figure shows the front side of an empty IOCHAS-0001R with the front cover raised.

A 19" chassis has 21 slots for modules (each 4TE wide). These slots are numbered 1 to 21, starting at the left-hand side of the chassis. In the IOCHAS-0001R, slots 1 to 18 are available for IO modules. They are configured in pairs.

The IO modules in the odd numbered slots (and the IO-0001 in slot 20) are controlled by Control Processor 1.

The IO modules in the even numbered slots (and the IO-0001 in slot 21) are controlled by Control Processor 2.

Slot 19 cannot be used.

Slot 20 and slot 21 contain the IO-0001 modules.

5.4.2 IO Housing

The IO housing is specifically designed for Safety Manager.

It is a 19" based housing.

A cover plate assembly at the front of the chassis shields the flatcables of the IO modules. This cover can be swung upwards to access the flatcables. To swing the cover upwards, unlock it by moving the two locking slides horizontally towards the middle of the chassis. The backside of the IO cover assembly provides room for a tag number assignment drawing.

The backside of the IO housing is covered by an IO back cover plate that can be removed by rotating the half-turn locking screw anti-clockwise (see the below figure).

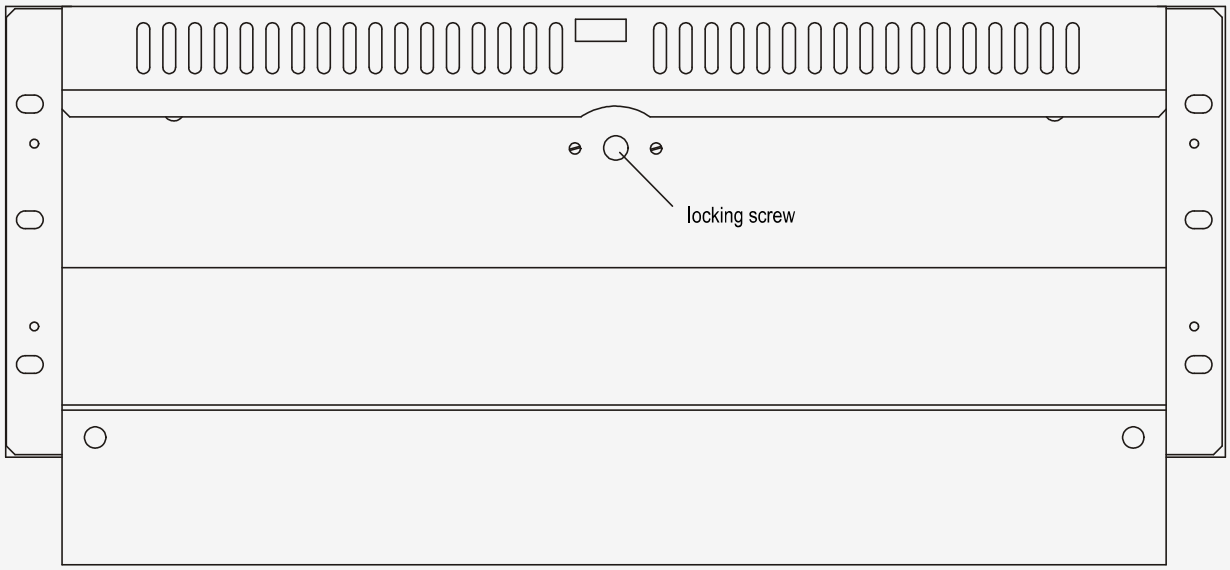


Figure 5-14: Back view of a closed IOCHAS-0001R

Attention:
The IO back cover plate will be completely removed from the IO chassis after the locking screw has been turned. Be careful not to drop it.

IO cable clamp support (with tie wrap) at the back of the IO housing leads all cables towards the side of the IO chassis.

5.4.3 IO Backplane for redundant IO: IOB-0001R

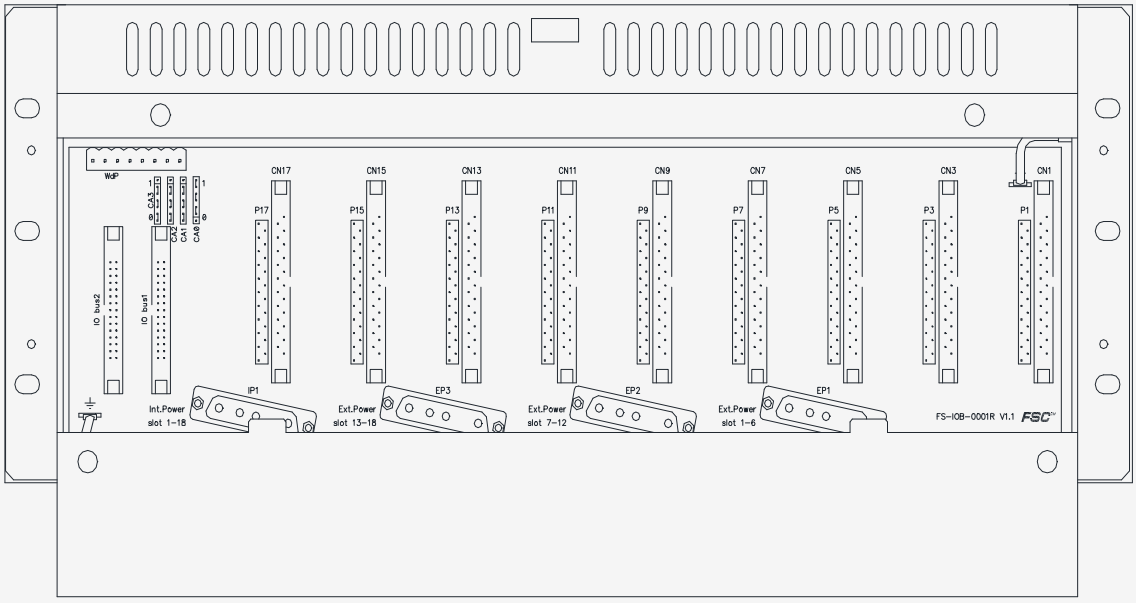


Figure 5-15: Back view of an open IOCHAS-0001R

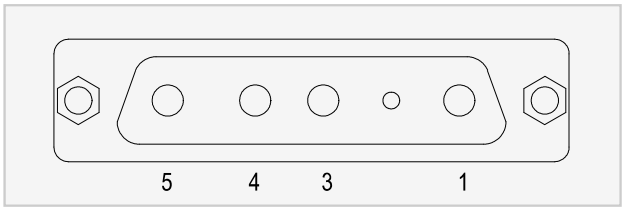
Connectors on the IOB-0001R

Connector	Amount	Description	See
Front side			
48-pin female chassis connector	18	For IO modules, slot 1 to 18	Input modules Output modules
48-pin female chassis connector	2	For IO extender IO-0001, slot 20 and 21	IO-0001
Back side			
IO bus1	1	Connector for IO bus to Control Processor 1	IOBUS-CPIO
IO bus2	1	Connector for IO bus to Control Processor 2	IOBUS-CPIO
CN1, CN3, CN5, CN7, CN9, CN11, CN13, CN15 and CN17	9	For system interconnection cables SICC-0001/Lx or SICP-0001/Lx, slot 1, 3, 5, 7, 9, 11, 13, 15 and 17	SICP-0001/Lx SICP-0001/Lx
P1, P3, P5, P7, P9, P11, P13, P15 and P17	9	For IO converter modules, slot 1, 3, 5, 7, 9, 11, 13, 15, and 17	Input converter modules Output converter modules
IP1	1	For internal power, slot 1 to 18	Cable: PDC-IOSET, see PDC-IOSET
EP1	1	For external power, slot 1 to 6	Cable: PDC-IOSET, see PDC-IOSET
EP2	1	For external power, slot 7 to 12	Cable: PDC-IOSET, see PDC-IOSET
EP3	1	For external power, slot 13 to 18	Cable: PDC-IOSET, see PDC-IOSET

Connector	Amount	Description	See
CA0 to CA3	4	Jumpers for defining the IO chassis address	Address settings
WdP	1	For watchdog and 5 V power signal, connects to Controller backplane	Refer chassis IO "Back view of an open IOCHAS-0001R" on page 100
			Cable: PDC-IOR05, see PDC-IOR05.

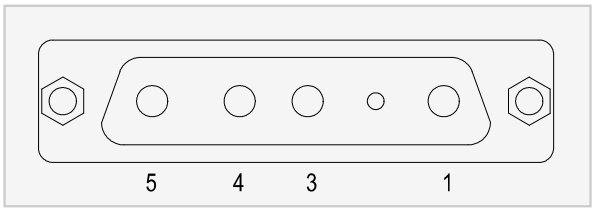
5.4.3.1 Pin allocation

The back view and pin allocation of the Internal Power connector IP1 is:



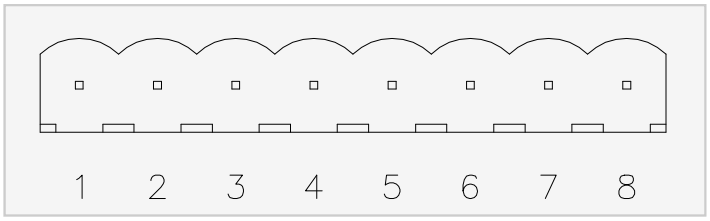
	IP1
1	IP slot 1, 3, 5, 7, 9, 11, 13, 15 and 17
3	0 V
4	0 V
5	IP slot 2, 4, 6, 8, 10, 12, 14, 16 and 18

The back view and pin allocation of the External Power connectors EP1, EP2 and EP3 are:



	EP3	EP2	EP1
1	EP slot 13, 15, 17	EP slot 7, 9, 11	EP slot 1, 3, 5
3	0 V	0 V	0 V
4	0 V	0 V	0 V
5	EP slot 14, 16, 18	EP slot 8, 10, 12	EP slot 2, 4, 6

The back view and pin allocation of the WdP connector is:



	WdP
1	5V of CP2, slot 2, 4, 6, 8, 10, 12, 14, 16, 18 and 21
2	WD of CP2, slot 2, 4, 6, 8, 10, 12, 14, 16 and 18
3	ground
4	nc
5	nc
6	ground
7	5V of CP1, slot 1, 3, 5, 7, 9, 11, 13, 15, 17 and 20
8	WD of CP1, slot 1, 3, 5, 7, 9, 11, 13, 15 and 17

The pin allocation of each respective input and output module can be found in the module datasheet.

The figure on the next page shows the pin mapping from an IO chassis connector at the front to both a SIC cable (CNx) connector and a converter (Px) connector at the back of the IO Chassis.

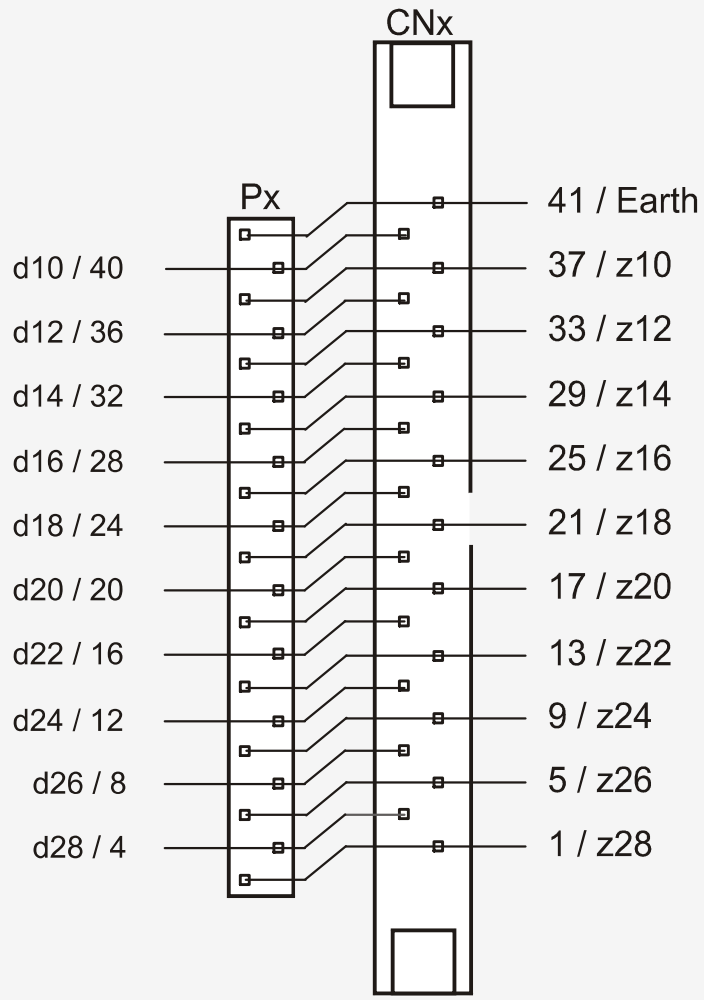


Figure 5-16: Pin mapping from IO connector to SIC cable (CNx) and converter (Px) connector

5.4.4 Horizontal IO bus backplane for redundant IO:

Figure 6-17 shows a front view of a filled IOCHAS-0001R with the cover opened.

Figure 6-18 shows a front view of a filled IOCHAS-0001R with the cover closed.

The below table lists the connectors on the IOBUS-HBR.

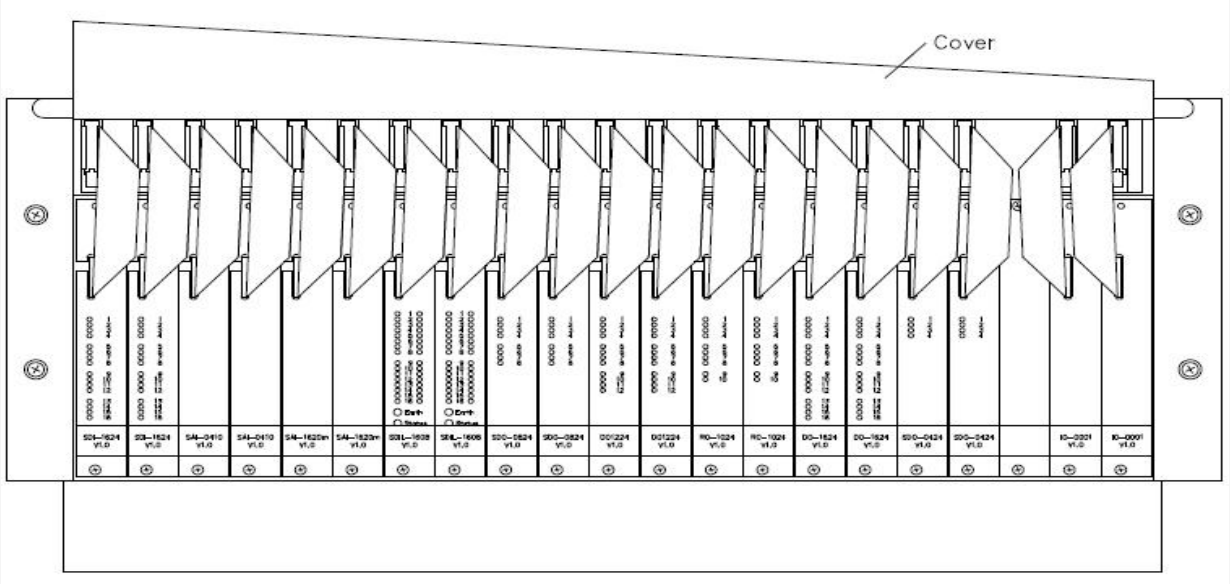


Figure 5-17: Front view of a filled, open IOCHAS-0001R

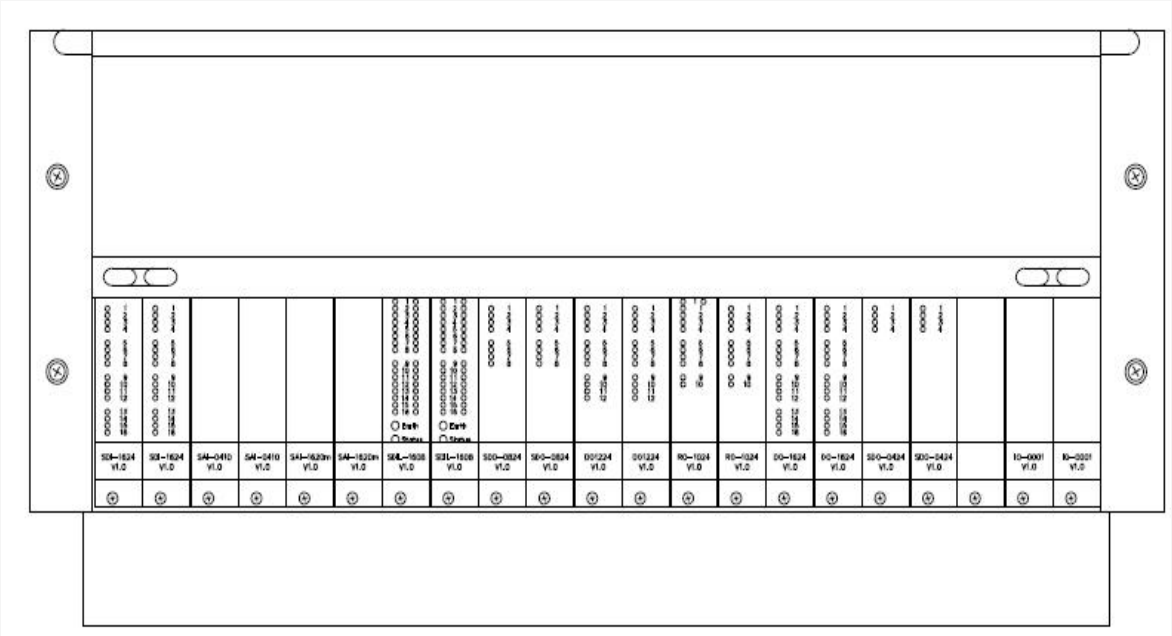


Figure 5-18: Front view of a filled, closed IOCHAS-0001R

Connectors on the Horizontal IO bus backplane

Connector	Amount	Description	See
Flatcable connector	18	Connectors for IO modules, slot 1 to 18	Input modules Output modules
Flatcable connector	2	Connector for IO extender IO-0001, slot 20 and 21	IO-0001
10-pin flatcable assembly	2	Flatcables to the connectors on the middle of the IO-0001 modules	IO-0001

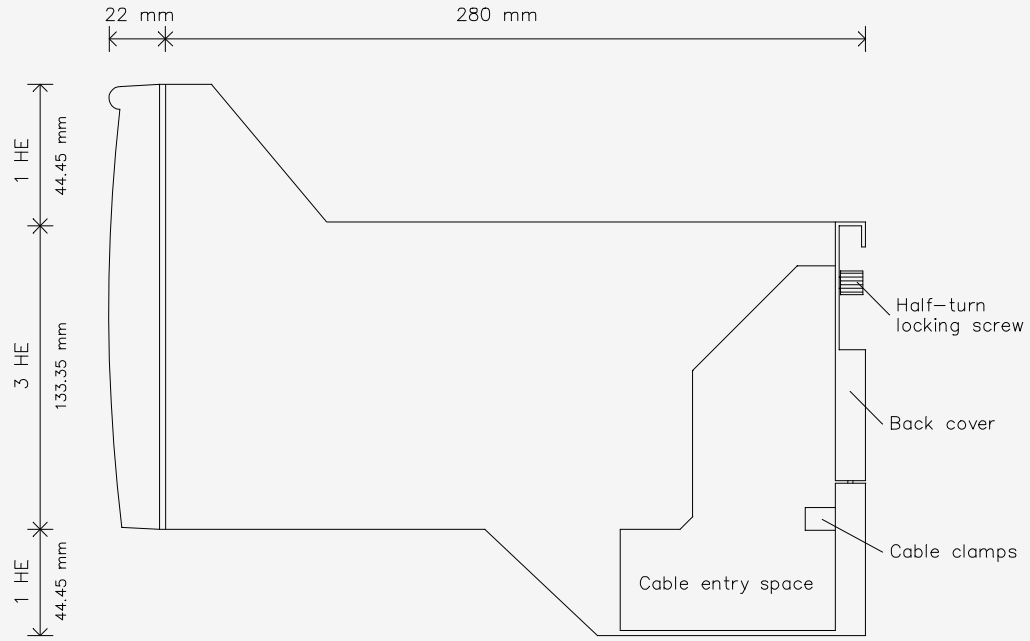


Figure 5-19: Side view of the IOCHAS-0001R

5.4.5 Technical data

General	Type numbers:	FS-IOCHAS-0001R FC-IOCHAS-0001R
	Approvals:	CE, UL, CSA, TUV, FM
Power consumption	5V-1:	35 mA (IO-0001 slot 20)
	5V-2:	35 mA (IO-0001 slot 21)
Dimensions	Height:	1 + 3 + 1 HE for first IO chassis 4 HE for every next IO chassis see "Side view of the IOCHAS-0001R" on page 106 44.5 + 133.4 + 44.5 mm 1.75 + 5.25 + 1.75 in
	Width:	482.6 mm, 19 in
	Depth:	280 mm, 11 in
	Weight:	8,5 kg