



MiniModules – Types of Housings

Version 01.00





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Become familiar with local regulations for separate collection of electrical and electronic equipment.

Follow local regulations and do not dispose of old equipment with household waste.



Contact information

CSM offers support for its products over the entire product life cycle. Updates for the individual components (e.g. documentation, configuration software and firmware) are made available on the CSM website. To keep up to date, it is therefore recommended that you check the download area of the CSM website for updates at least once a month.

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Contents

1 Introduction	1
1.1 Housing variants	1
1.2 GORE™ membrane	2
2 Housing overview	3
2.1 Case Small (CS)	3
2.1.1 Dimensions/Drillings	3
2.1.2 Modules in CS housing	3
2.2 Slide Case Small (SCS)	4
2.2.1 Dimensions/Drillings	4
2.2.2 Modules in SCS housing	4
2.3 Case Large (CL)	5
2.3.1 Dimensions/Drillings	5
2.3.2 Modules in CL housing	5
2.4 Slide Case Large (SCL)	6
2.4.1 Dimensions/Drillings	6
2.4.2 Modules in SCL housing	7
2.5 Tough Case Large (TCL)	8
2.5.1 Dimensions/Drillings	8
2.5.2 Modules in TCL housing	8
2.6 Case Extra Small (CXS)	9
2.6.1 Dimensions/Drillings	9
2.6.2 Modules in CXS housing	9
3 Installation of MiniModules	10
3.1 Mounting with screws	10
3.2 Mounting with cable connectors	10
3.3 Mounting angle and adapter plate for Slide Case modules	10
3.3.1 Mounting angle SCS	11
3.3.2 Mounting angle SCL	11
3.3.3 Adapter plates SCS/SCL and SCL/SCS	12
4 Attachement	13
4.1 List of figures	13
4.2 List of tables	13



1 Introduction

1.1 Housing variants


CSM MiniModules are available in **Standard** and **Slide Case** versions. Depending on the measurement module type, they are installed in a small housing (“Case Small”) or a large housing (“Case Large”). In addition, two special designs exist (for certain modules):

- ▶ **Tough Case Large:** This design was developed for use under particularly harsh environmental conditions.
- ▶ **Case Extra Small:** This extremely compact design was developed for use in very confined spaces.

Therefore MiniModules are available in a total of six different designs:

Designation	Code	Width	Height	Depth
Standard Case Small	CS	120 mm	33 mm	50 mm
Slide Case Small	SCS	120 mm	37 mm	
Standard Case Large	CL	200 mm	35 mm	
Slide Case Large	SCL	200 mm	40 mm	
Tough Case Large	TCL	230 mm	35 mm	
Case eXtra Small	CXS	93 mm	31 mm	46 mm

Tab. 1-1: Types of housings/designations

NOTICE!	
	<p>The width of HV measurement modules increases due to the ground connection.</p> <p>SCL: plus 3 mm, ground connection on the right side of the housing</p> <p>SCS/CS: plus 10 mm, ground connection on the left side of the housing</p>

Housing Depth

The specification “50 mm” or “46 mm” in table 1-1 corresponds to the depth of the module housing including a standard front panel or connector. The total depth of a MiniModule varies and depends, for example, on which connectors or sockets are used (see Fig. 1-1). For example, the total depth of the standard version of an ADMM 4 pro HS is 54 mm, while that of an HV THMM 4 is 75 mm.

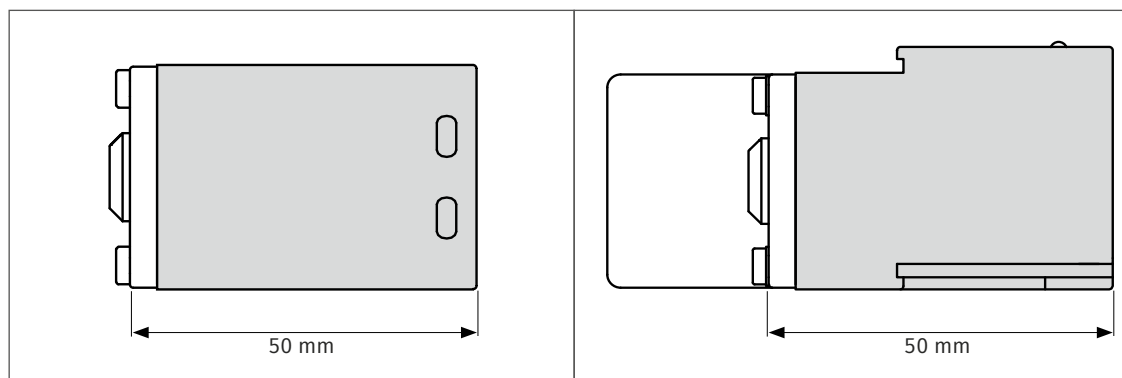


Fig. 1-1: Housing depth ADMM 4 pro HS (left) and HV THMM 4 (right)



1.2 GORE™ membrane

CSM MiniModules are provided with a GORE™ membrane and a venting groove. These are needed to regulate pressure and humidity. To ensure proper operation of the device, never block or clog the ventilation opening and venting groove in the back of the housing. If this happens, condensate can accumulate inside the housing and damage the measurement module.

The following figure shows ventilation opening (①) and venting groove (②) in the back of the MiniModule.

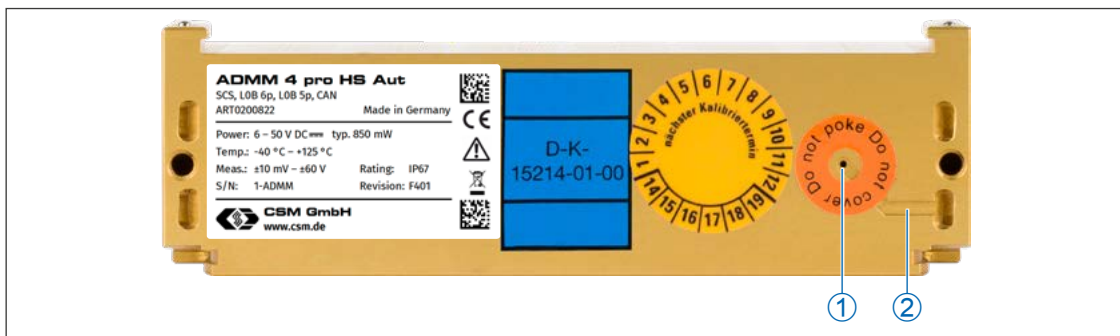




Fig. 1-2: MiniModule ADMM 4 pro HS (SCS), ventilation opening and venting groove in the back of the housing


NOTICE!	
	<p>The GORE™ membrane is required to regulate pressure and humidity.</p> <p>☞ Do not block the ventilation opening for the GORE™ membrane during installation.</p>
NOTICE!	
	<p>Depending of the module type the position of the ventilation opening varies. When mounting different MiniModules, make sure that the ventilation openings/venting grooves are not blocked or obstructed.</p> <p>☞ Consider the position of the ventilation opening in the back of the housing!</p>



2 Housing overview

2.1 Case Small (CS)

2.1.1 Dimensions/Drillings

NOTICE!	
	<p>The width of HV measurement modules in CS increases by 10 mm due to the ground connection on the left side of the housing.</p>

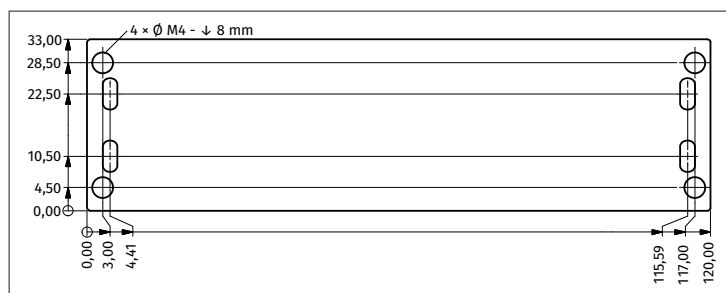


Fig. 2-1: Back of the housing, Case Small (CS)

2.1.2 Modules in CS housing


Description	Remark
ADMM 4 classic HS / AD4 MC10	
ADMM 4 pro HS / AD4 pro MC10	
CNT4 evo	
CNTMM 4 classic	Discontinued
CNTMM 4 pro	Discontinued
HV ADMM 2LI+	Width: 130 mm
HV ADMM 4LI	Width: 130 mm
HV PTMM 2	Width: 130 mm
HV THMM 4	Width: 130 mm
PTMM 4	Discontinued
PTMM 4 evo	
THMM 8 classic	
THMM 8 pro	

Tab. 2-1: MiniModules in Case Small (CS)



2.2 Slide Case Small (SCS)

2.2.1 Dimensions/Drillings

NOTICE!	
	<p>The width of HV measurement modules in SCS increases by 10 mm due to the ground connection on the left side of the housing.</p>

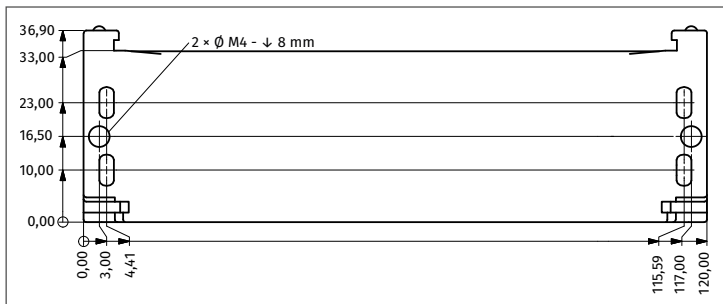


Fig. 2-2: Back of the housing, Slide Case Small (SCS)

2.2.2 Modules in SCS housing

Description	Remark
ADMM 4 classic HS / AD4 MC10	
ADMM 4 pro HS / AD4 pro MC10	
CNT4 evo	
CNTMM 4 classic	Discontinued
CNTMM 4 pro	Discontinued
HV ADMM 2LI+	Width: 130 mm
HV ADMM 4LI	Width: 130 mm
HV PTMM 2	Width: 130 mm
HV THMM 4	Width: 130 mm
PTMM 4	Discontinued
PTMM 4 evo	
THMM 8 classic	
THMM 8 pro	

Tab. 2-2: MiniModules in Slide Case Small (SCS)



2.3 Case Large (CL)

2.3.1 Dimensions/Drillings

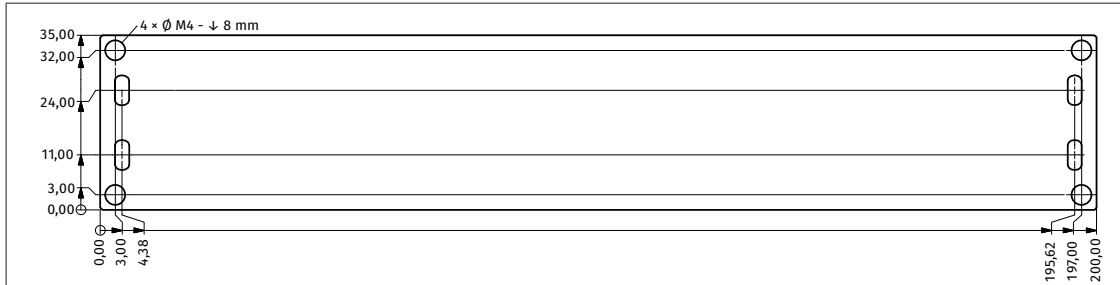


Fig. 2-3: Back of the housing, Case Large (CL)

2.3.2 Modules in CL housing

Description	Remark
ADMM 8 classic / AD8 MC2	
ADMM 8 pro / AD8 pro MC2	
ADMM 8 pro2 / AD8 MD2	
ECAT ADMM 4	Discontinued
ECAT ADMM 4 HS100	Discontinued
ECAT ADMM 4 HS800	Discontinued
ECAT STGMM 6	
OUTMM 4	
OUTMM 8	
PCMM	
PTMM 8 evo	
STGMM 6 pro HS	
THMC 16	
THMM 16 classic	
THMM 16 pro	
XCP-Gateway Basic	Discontinued
XCP-Gateway +CAN	Discontinued

Tab. 2-3: MiniModules in Case Large (CL)



2.4 Slide Case Large (SCL)

2.4.1 Dimensions/Drillings

NOTICE!	
	The width of HV measurement modules in SCL increases by 3 mm due to the ground connection on the left side of the housing.

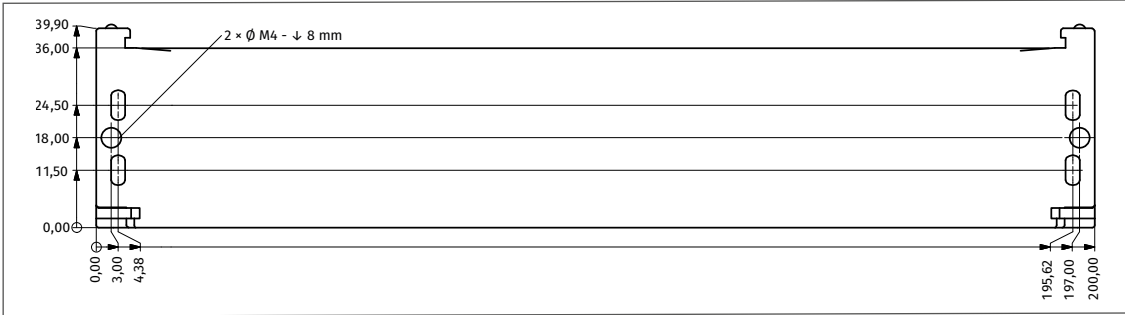


Fig. 2-4: Back of the housing, Slide Case Large (SCL)



2.4.2 Modules in SCL housing

Description	Remark
AD4 IE100	
AD4 IG100	
AD4 OG10 / OG100 / OG1000	
ADMM 8 classic / AD8 MC2	
ADMM 8 pro / AD8 pro MC2	
ADMM 8 pro2	
ECAT ADMM 4	Discontinued
ECAT ADMM 4 HS100 / AD4 OE100	
ECAT ADMM 4 HS800	Discontinued
ECAT STGMM 6	
HV AD4 OW1000	Width: 203 mm
HV AD4 XW1000	Width: 203 mm
OUTMM 4	
OUTMM 8	
PCMM	
PTMM 8 evo	
STGMM 6 pro HS	
THMC 16	
THMM 16 classic	
THMM 16 pro	
XCP-Gateway Basic	
XCP-Gateway +CAN	

Tab. 2-4: MiniModules in Slide Case Large (SCL)



2.5 Tough Case Large (TCL)

2.5.1 Dimensions/Drillings

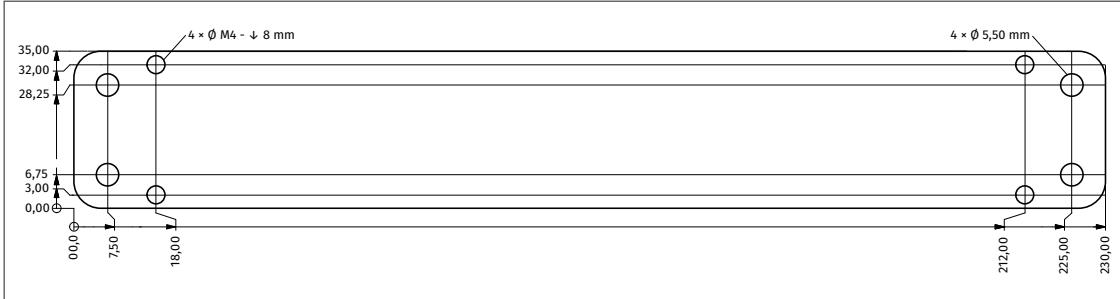


Fig. 2-5: Back of the housing, Tough Case Large (TCL)

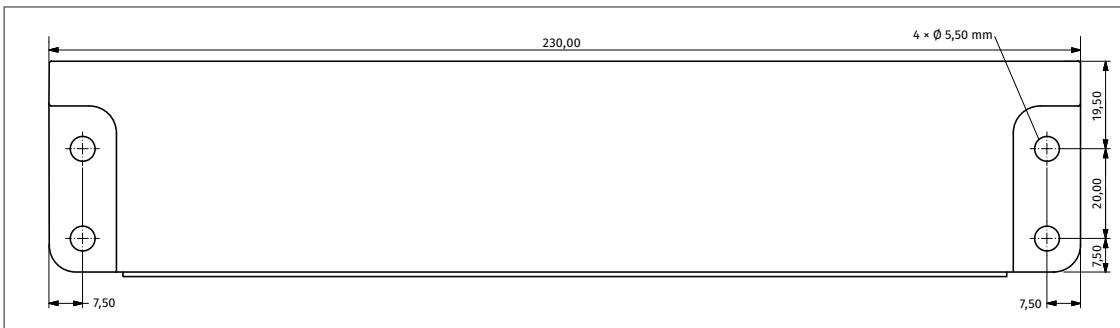


Fig. 2-6: Top view of a Tough Case Large (TCL)

2.5.2 Modules in TCL housing

Description	Remark
ADMM 8 pro / HE	
ECAT ADMM 4 / HE	
ECAT STGMM 6 / HE	
STGMM 6 pro HS / HE	
TH16 pro	
XCP-Gateway +CAN / HE	

Tab. 2-5: MiniModules in Tough Case Large (TCL)



2.6 Case Extra Small (CXS)

2.6.1 Dimensions/Drillings

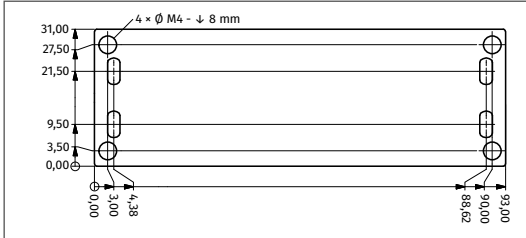


Fig. 2-7: Back of the housing, Case Extra Small (CXS)

2.6.2 Modules in CXS housing

Description	Remark
AD4 MX2	
ADMM 4	Discontinued
CNT4 pro	Discontinued
CNT4 evo	
CNTMM 4 classic	Discontinued
PTMM 4	Discontinued

Tab. 2-6: MiniModules in Case Extra Small (CXS)



3 Installation of MiniModules

3.1 Mounting with screws

MiniModules have threaded holes in the back of the module housing for mounting. The thread depth in the module is 8 mm. The screw length must be selected according to the thickness of the mounting material. Depending on the module version, either 2 (Slide Case housing) or 4 (standard housing) screws are required.

3.2 Mounting with cable connectors

Apart from the high voltage modules and measurement modules in the “Tough Case”, all MiniModules are equipped with cable connector eyelets that can be used to fasten the measurement module at the installation site. The maximum width of the cable connector is 4 mm.

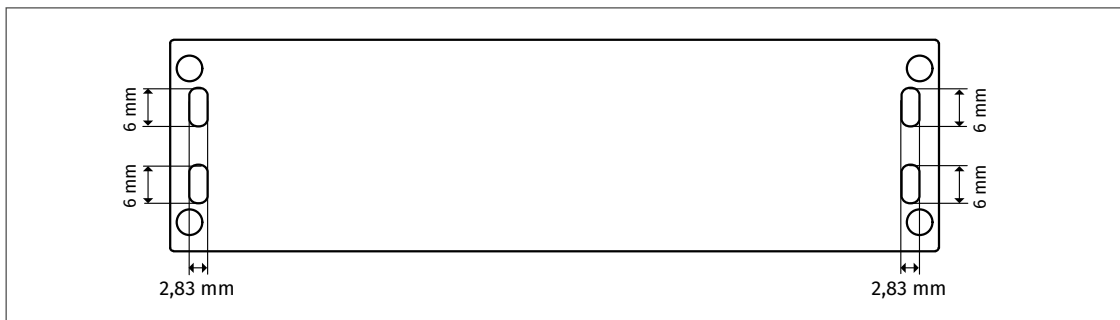


Fig. 3-1: Back of the housing (Case Small) with cable connector eyelets

3.3 Mounting angle and adapter plate for Slide Case modules

For MiniModules in Slide Case housings, the accessory range for CSM MiniModules offers special mounting angles and adapter plates that enable tool-free mounting of several measurement modules.

If several measurement modules are used in one application, Slide Case housings offer the advantage that not every measurement module has to be mounted individually. After mounting the first module, further measurement modules can be connected to each other via the guide rails on the upper side of the housing and the holders on the lower side of the housing. In this way compact measurement module packages can be formed without tools or mounting material.

To connect Slide Case housings of different sizes adapter plates are available. The first and the last module of a measurement module package are each fixed with a mounting angle.



3.3.1 Mounting angle SCS

Using a pair of mounting angle SCS female/male multiple MiniModules in Slide Case Small can be connected to each other without tools.

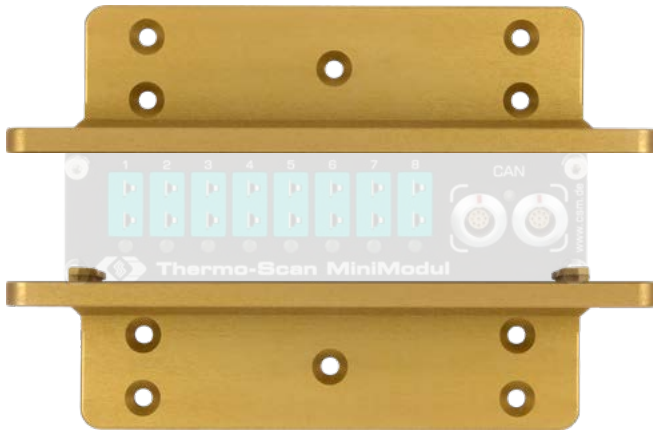


Fig. 3-2: Mounting angle SCS female/male for MiniModules in Slide Case Small

3.3.2 Mounting angle SCL

Accordingly a pair of mounting angle SCL female/male is required for MiniModules in Slide Case Large.



Fig. 3-3: Mounting angle SCL female/male for MiniModules in Slide Case Large



3.3.3 Adapter plates SCS/SCL and SCL/SCS

Using the adapter plates SCS/SCL or SCL/SCS differently-sized measurement modules in Slide Case housings can be connected to form a package of measurement modules.

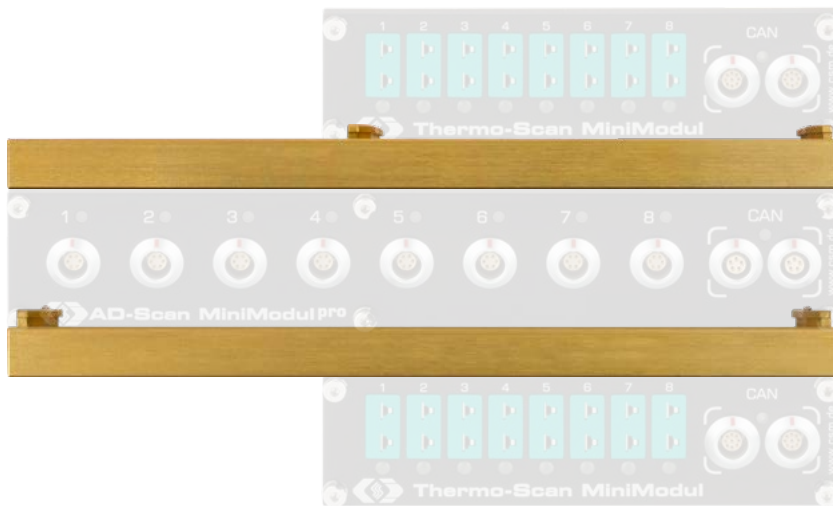


Fig. 3-4: Adapter plates SCL female on SCS male (top) and SCL male on SCS female (bottom)

- *Detailed information on mounting angles and adapter plates can be found in the data sheets "CAN Accessories" and "ECAT Accessories".*

4 Attachement

4.1 List of figures

Fig. 1-1:	Housing depth ADMM 4 pro HS (left) and HV THMM 4 (right)	1
Fig. 1-2:	MiniModule ADMM 4 pro HS (SCS), ventilation opening and venting groove in the back of the housing	2
Fig. 2-1:	Back of the housing, Case Small (CS)	3
Fig. 2-2:	Back of the housing, Slide Case Small (SCS)	4
Fig. 2-3:	Back of the housing, Case Large (CL)	5
Fig. 2-4:	Back of the housing, Slide Case Large (SCL)	6
Fig. 2-5:	Back of the housing, Tough Case Large (TCL)	8
Fig. 2-6:	Top view of a Tough Case Large (TCL).	8
Fig. 2-7:	Back of the housing, Case Extra Small (CXS).	9
Fig. 3-1:	Back of the housing (Case Small) with cable connector eyelets.	10
Fig. 3-2:	Mounting angle SCS female/male for MiniModules in Slide Case Small	11
Fig. 3-3:	Mounting angle SCL female/male for MiniModules in Slide Case Large.	11
Fig. 3-4:	Adapter plates SCL female on SCS male (top) and SCL male on SCS female (bottom)	12

4.2 List of tables

Tab. 1-1:	Types of housings/designations.	1
Tab. 2-1:	MiniModules in Case Small (CS)	3
Tab. 2-2:	MiniModules in Slide Case Small (SCS)	4
Tab. 2-3:	MiniModules in Case Large (CL)	5
Tab. 2-4:	MiniModules in Slide Case Large (SCL)	7
Tab. 2-5:	MiniModules in Tough Case Large (TCL)	8
Tab. 2-6:	MiniModules in Case Extra Small (CXS).	9



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