



Praesideo PRS-CSM / PRS-CSRМ / PRS-CSKPM

Digital Public Address and Emergency Sound System



BOSCH

en **Installation and User Instructions**

Disclaimer

Although every effort has been made to ensure the information and data contained in these Installation and User Instructions is correct, no rights can be derived from the contents.

Bosch Security Systems disclaim all warranties with regard to the information provided in these instructions. In no event shall Bosch Security Systems be liable for any special, indirect or consequential damages whatsoever resulting from loss of use, data or profits, whether in action of contract, negligence or other tortious action, arising out of or in connection with the use of the information provided in these Installation and User Instructions.

Important Safeguards

Prior to installing or operating this product, always read the Important Safety Instructions which are available as a separate document and are packed with all units that can be connected to the mains.

FCC Requirements Class A

All Praesideo devices are verified to comply according 47 CFR subpart 15 B, Unintentional Radiators. Class A Digital device, peripherals and external switching power supplies.

NOTE:

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

FCC Notice

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

Modifications

Any modifications made to this device that are not approved by the manufacturer may void the authority granted to the user by the FCC to operate this equipment.

Canada

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

部件名称	有毒有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬(Cr6+)	多溴联苯 (PBB's)	多溴二苯 (PBDE's)
印制电路板	X	O	O	O	O	O
线缆	X	O	X	X	X	X
电子元件	X	O	X	X	O	O
塑料零件	O	O	O	O	X	X
装备配件	X	O	X	X	O	O
金属零件	X	O	X	X	O	O

O: 表示该有毒有害物质在该部件所有均质材料中的含量均在 SJ/T11363-2006 规定的限量要求以下。

X: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 SJ/T11363-2006 规定的限量要求。

Table of Contents

1 PRS-CSM Call Station Module	5
1.1 Introduction	5
1.2 Controls, connectors and indicators	6
1.2.1 Back-up supply/Buzzer (1)	7
1.2.2 Microphone/PTT key connection (2)	7
1.2.3 Loudspeaker/Control Inputs (3)	8
1.2.4 Headset/Volume control (4)	8
1.2.5 Control input/outputs (5, 6)	9
1.2.6 Keypad interface (X143)	11
1.3 Installation	12
1.4 Technical Data	13
1.4.1 Physical characteristics	13
1.4.2 Climate conditions	13
1.4.3 EMC and Safety	13
1.4.4 Mean time between failures	13
1.4.5 System bus	13
1.4.6 Backup power supply	13
1.4.7 Microphone	13
1.4.8 Loudspeaker	13
1.4.9 Headset	14
1.4.10 Controls	14
1.4.11 Buzzer	14
2 PRS-CSR Remote Call Station Module	15
2.1 Introduction	15
2.2 Controls, connectors and indicators	16
2.2.1 Back-up supply/Buzzer (1)	17
2.2.2 Microphone/PTT key connection (2)	17
2.2.3 Loudspeaker/Control inputs (3)	17
2.2.4 Headset/Volume control (4)	18
2.2.5 Control input/outputs (5, 6)	19
2.2.6 Keypad interface (X1)	21
2.3 Installation	22
2.4 Technical Data	23
2.4.1 Physical characteristics	23
2.4.2 Climate conditions	23
2.4.3 Electromagnetic compatibility	23
2.4.4 Mean time between failures	23
2.4.5 Call station interface	23
2.4.6 Backup power supply	23
2.4.7 Microphone	23
2.4.8 Loudspeaker	23
2.4.9 Headset	24
2.4.10 Controls	24
2.4.11 Buzzer	24
3 PRS-CSKPM Call Station Keypad Module	25
3.1 Introduction	25

3.2	Controls, connectors and indicators	26
3.2.1	Key inputs (1)	27
3.2.2	Control outputs (2)	27
3.2.3	Keypad interface (X5, X6)	28
3.2.4	ID selector (S9)	29
3.3	Installation	30
3.3.1	Connecting the PRS-CSKPM to other modules	31
3.4	Technical data	32
3.4.1	Physical characteristics	32
3.4.2	Climate conditions	32
3.4.3	EMC and Safety	32
3.4.4	Mean time between failures	32
3.4.5	System bus	32

1 PRS-CSM Call Station Module

1.1 Introduction

The PRS-CSM Call Station Module can be used to make custom-made call stations (e.g. an emergency call station). The module uses a built-in limiter and speech filter for improved intelligibility. The module has a metal housing for easy mounting and stacking in cabinets, and screw connectors for easy interconnection to microphone, loudspeaker, switch and indicators. See figure 1.1 for a block diagram of the call station module.

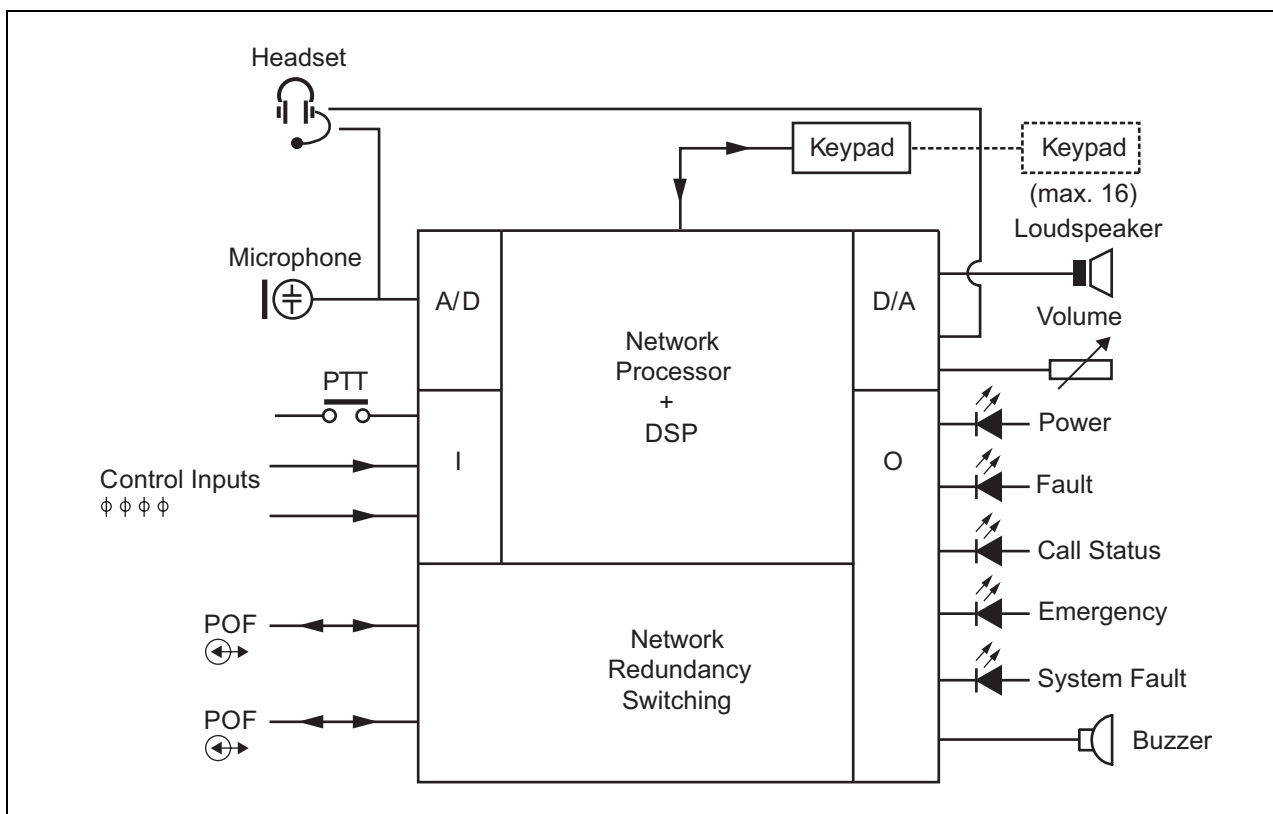


figure 1.1: Block diagram PRS-CSM

1.2 Controls, connectors and indicators

The call station module contains the following connections (see figure 1.2 and figure 1.3):

- 1 Back-up supply/Buzzer - Besides powering the call station module via the system network connector (7), it can also be powered externally from a back-up power supply via this connector (see section 1.2.1). On this connector also a buzzer can be connected.
- 2 Microphone/PTT key - The microphone input is used to connect a microphone and a Press-To-Talk (PTT) switch (see section 1.2.2).
- 3 Loudspeaker/Control Inputs - The loudspeaker is meant for listening to chimes, pre-recorded messages and alarms (see section 1.2.3) activated by a PTT key of the call station or one of its keypads (see section 47.3.3 of the IUI Praesideo 4.0). This connector also provides
- 4 Headset/Volume control potentiometer - This connector provides the possibility to connect a headset and a volume control potentiometer to the call station module (see section 1.2.4). This potentiometer also controls the volume of a loudspeaker connected to 3.
- 5, 6 Control input/outputs - The control input and five control outputs on these two connectors act in a similar way as the PTT key and LEDs on the LBB4430/00 Call Station Basic (see section 1.2.5).
- 7 System bus - Two system bus connectors to connect the call station module to other Praesideo equipment. Both connectors are interchangeable.

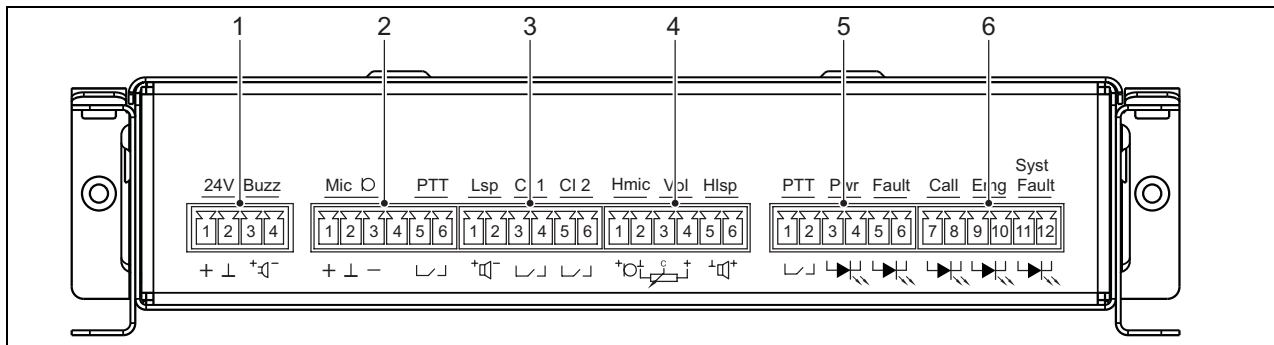


figure 1.2: PRS-CSM installer front view

i Note
All cables connected to 1 to 6 must be less than 3 meter in length.

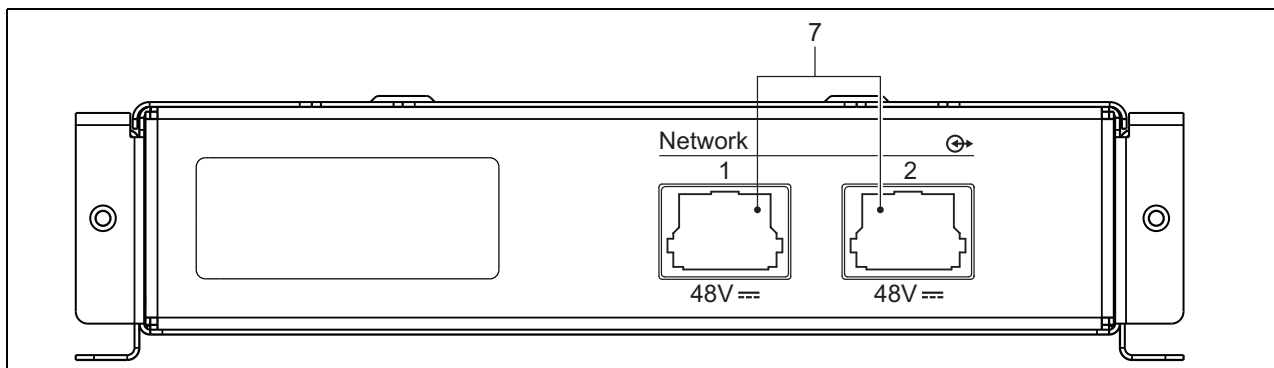


figure 1.3: PRS-CSM system front view

1.2.1 Back-up supply/Buzzer (1)

This 4-pin connector provides the input for a backup power supply and a buzzer. Typically a 24V supply is used, but a voltage in the range 18..56V is allowed. A buzzer can be connected here for fault and alarm notification. A low voltage type buzzer must be used that can operate on 3V. Suitable models are the Mallory PK-20A35EWQ or Alan Butcher Components ABI-004-RC.

table 1.1: Back-up supply/buzzer connector details

Pin	Signal
1	Back-up supply (+)
2	Back-up supply (GND)
3	Buzzer (+)
4	Buzzer (-)

1.2.2 Microphone/PTT key connection (2)

This 6-pin connector provides the connection for a microphone and a PTT key. The following dynamic microphones are suited for use with the module:

- LBB9081 Hand-held Dynamic Microphone (including resistors for switch supervision).
- LBB9082 Gooseneck Dynamic Microphone.

table 1.2: Microphone/PTT key connector details

Pin	Signal
1	Mic +
2	GND
3	Mic -
4	--- not connected ---
5	PTT input contact
6	GND

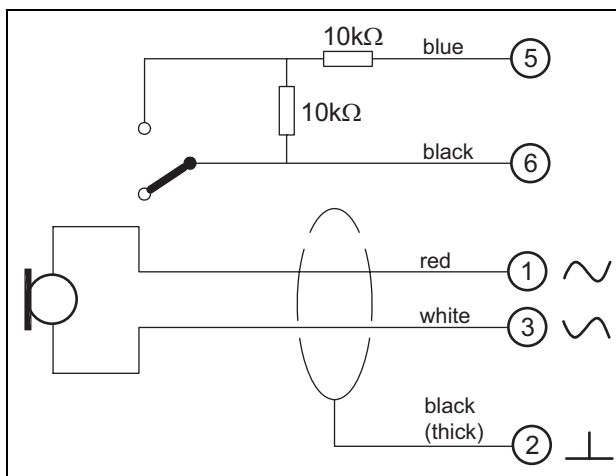


figure 1.4: LBB9081 connection diagram

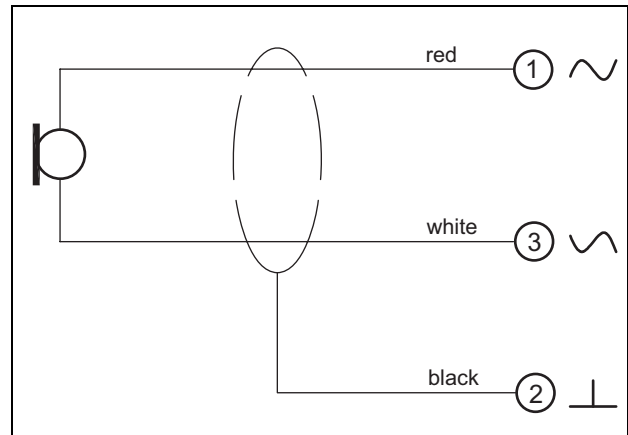
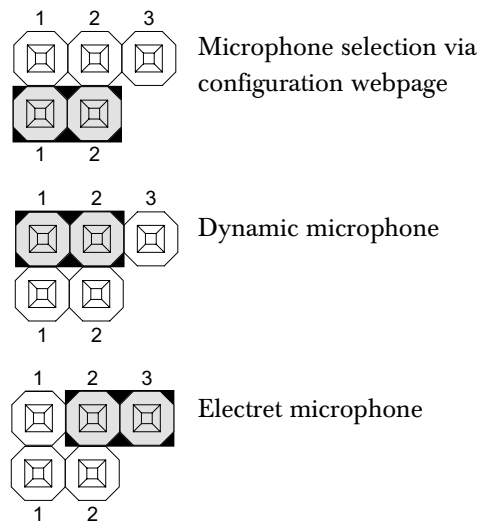


figure 1.5: LBB9082 connection diagram

For the selection of the microphone type, a jumper on X149/X150 is used. To get access to this jumper, remove the top cover (see also section 3.3). For the location of X149 and X150 on the PCB see figure 1.13. Jumper settings:



1.2.3 Loudspeaker/Control Inputs (3)

This 6-pin connector provides the connection to a loudspeaker and to two control inputs.

table 1.3: Loudspeaker/ Control Input connector details

Pin	Signal
1	Speaker +
2	Speaker -
3	Control input 1
4	Return control input 1
5	Control input 2
6	Return control input 2

The control inputs can be configured to act on contact make or on contact break (see section 43.4.7 of the IUI Praesidio 4.0). It is also possible to supervise the cables for short-circuits and open connections (see figure 1.6 and figure 1.7). Whether a control input is actually supervised or not is defined in the configuration.

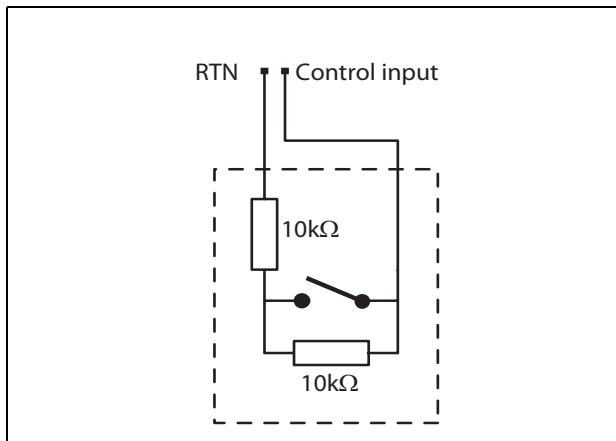


figure 1.6: Supervised control input

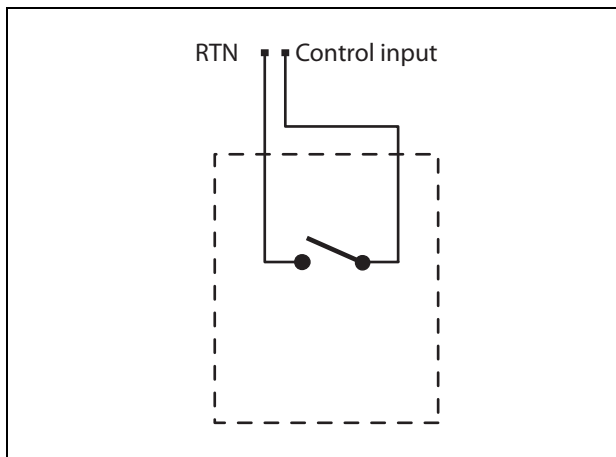


figure 1.7: Non-supervised control input



Warning

Do not connect DC or AC signals to the control inputs, otherwise the input circuit may be damaged. Only use voltage-free contacts.



Note

Do not combine control input wires of multiple control inputs (e.g. do not use a common return wire).

1.2.4 Headset/Volume control (4)

This 6-pin connector provides the connection to the headset and the volume control. This volume control also controls the volume of the loudspeaker connected to connection 3.

A linear potentiometer R (typical value: 100 kohm) is used to create a control voltage from the supply voltage. If a volume control is not needed, pin 2 and 3 must be connected to each other. The volume level of the earphone or loudspeaker is then at its maximum.

table 1.4: Headset/Volume Control connector details

Pin	Signal
1	Headset (mic +)
2	GND (mic -)
3	Volume control voltage
4	3.3 V supply output
5	GND (earphone -)
6	Earphone +

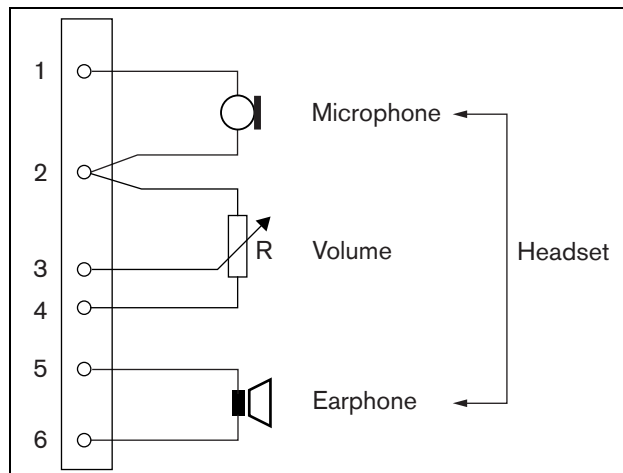


figure 1.8: Headset connection diagram

1.2.5 Control input/outputs (5, 6)

These two 6-pin connectors provide the connection of one control input for the PTT key and five control outputs for indicator LEDs.

table 1.5: Control inputs/outputs connector details

Pin	Signal
1	PTT input contact
2	GND
3	LED Power Indicator +/anode
4	LED Power Indicator -/cathode
5	LED Fault Indicator +/anode
6	LED Fault Indicator -/cathode
7	LED Call Status Indicator +/anode
8	LED Call Status Indicator -/cathode
9	LED Emergency Indicator +/anode
10	LED Emergency Indicator -/cathode
11	LED System Fault Indicator +/anode
12	LED System Fault Indicator -/cathode



Warning

Do not connect DC or AC signals to the control inputs, otherwise the input circuit may be damaged. Only use voltage-free contacts.

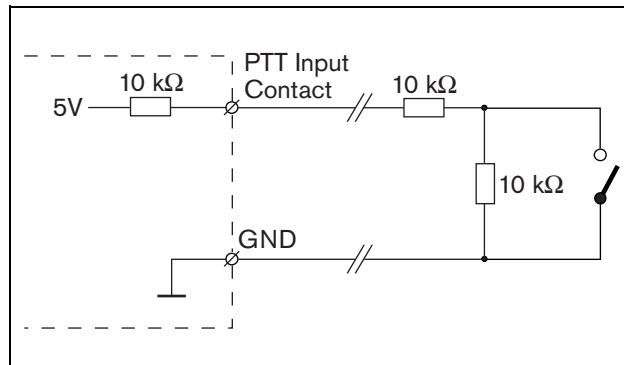


figure 1.9: Press-to-talk (PTT) key

The PTT input contact on this connector is in parallel with the PTT input contact on connector 2. Use only one of them.

See figure 1.9 for a connection diagram. The two resistors must be placed in the circuit, because the contact is always supervised by the system software.

In figure 1.10 the LED driver circuit is shown.

Typical colors for the indicator LEDs are:

- Green for power and call status indicators;
- Yellow for fault and system fault indicators;
- Red for the emergency indicator.

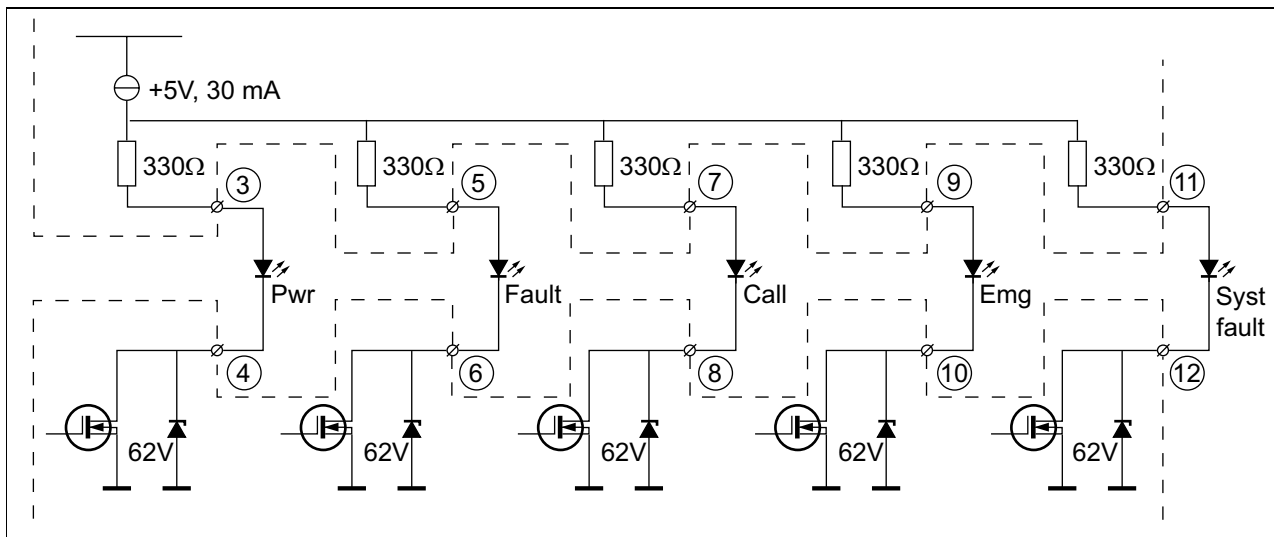


figure 1.10: Internally powered LEDs

- Pwr: Power indicator
- Fault: Fault indicator
- Call: Call status indicator
- Emg: Emergency indicator
- Syst Fault: System fault indicator

It is also possible to connect an externally powered lamp or LED (see figure 1.11), or an externally powered relay (see figure 1.12). Use pin 2 of connector 5 as GND.

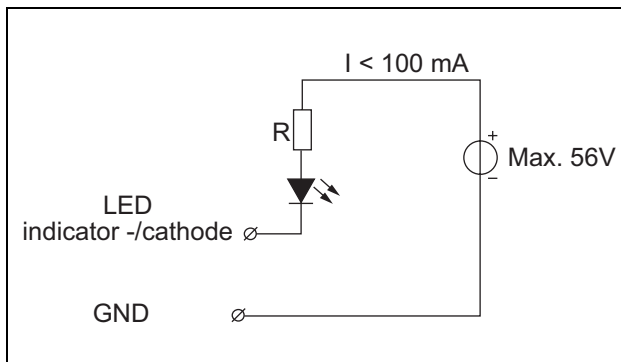


figure 1.11: Externally powered LED

The value of resistor R in figure 1.10 depends on the voltage of the external source, the forward voltage of the LED and the current flowing through the LED:

$$R = \frac{V_{source} - V_{forward}}{I}$$

For example, the voltage of the external source is 24 V, the forward voltage of the LED is 2 V and the current flowing through the LED is 10 mA, then:

$$R = \frac{24 - 2}{10 \cdot 10^{-3}} = 2200 \text{ } (\Omega)$$

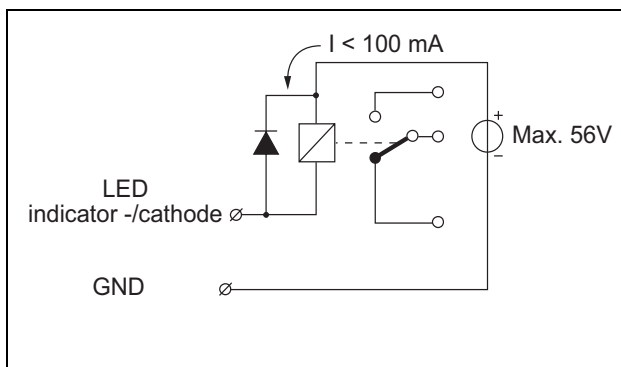


figure 1.12: Externally powered relay

1.2.6 Keypad interface (X143)

Additional keypads or keypad modules can be connected to this call station module via a 16-position flatcable, connected to X143. This flatcable is supplied with each keypad or keypad module.

Up to 16 keypads and/or keypad modules can be connected in series (loop through). See also section 3.3

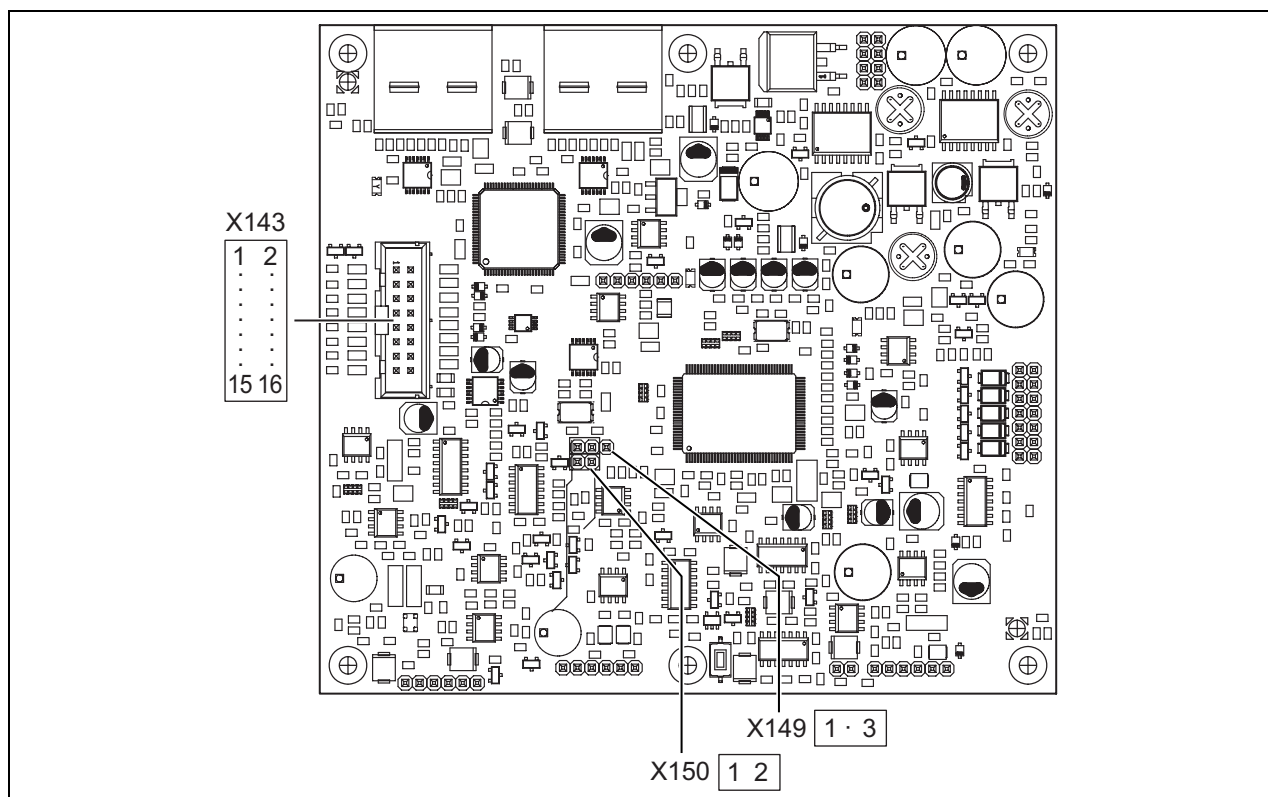


figure 1.13: Component side PCB of the PRS-CSM

1.3 Installation

The call station module is fitted with brackets and screw holes for easy installation. See figure 1.14.

Make sure to leave enough space for the cables and the connectors.

Especially the minimum bend radius of the Praesideo network cables must be observed (see section 31.6 of the IUI Praesidio 4.0).

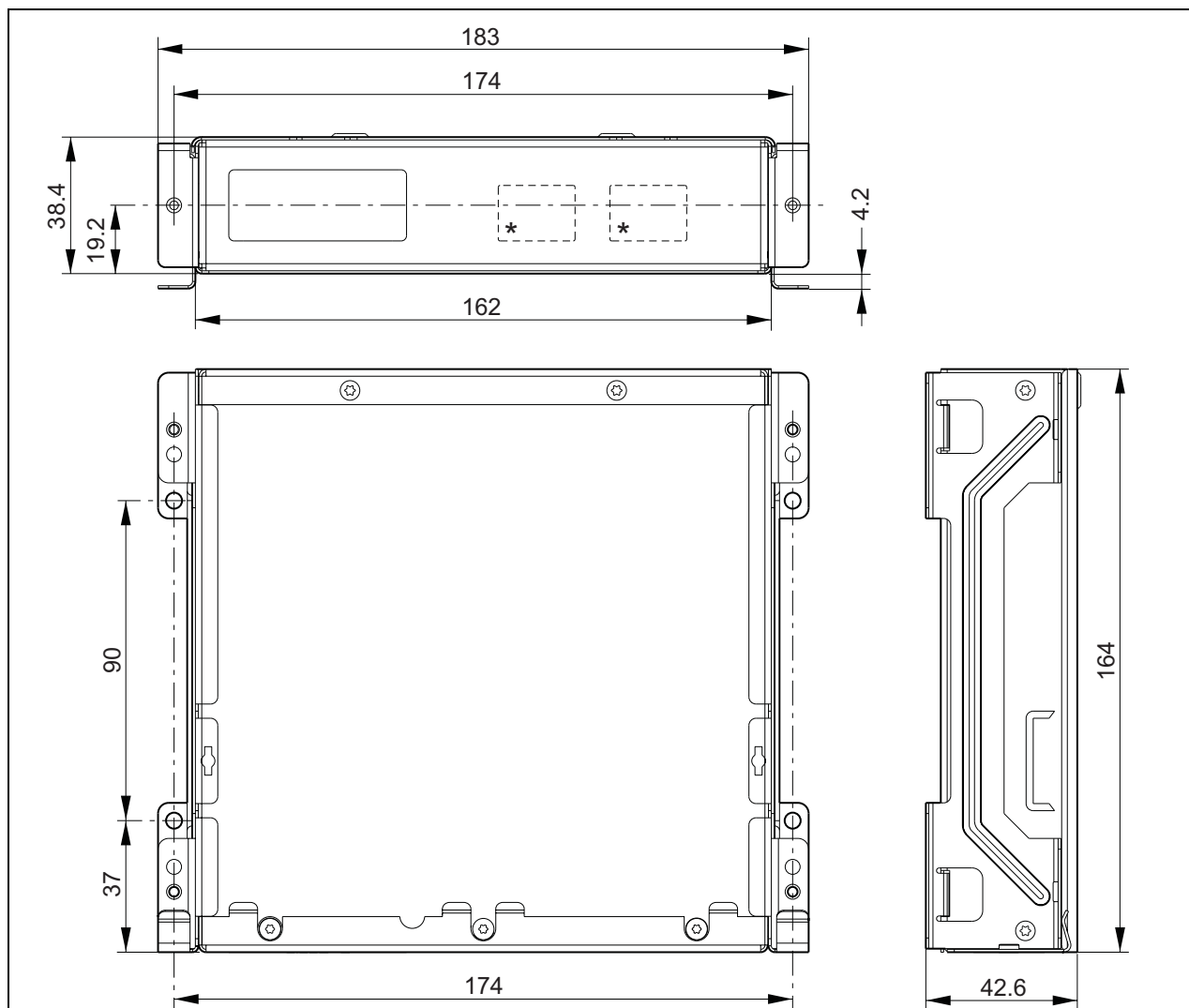


figure 1.14: PRS-CSM installation dimensions

*: the exact layout depends on the module type

1.4 Technical Data

1.4.1 Physical characteristics

Dimensions (H x W x D):

43 x 183 x 164 mm

Weight:

0.8 kg

1.4.2 Climate conditions

Temperature:

-5 to +55 °C (operating, guaranteed)

-15 to +55 °C (operating, sample tested)

-20 to +70 °C (non-operating)

Relative humidity:

15 to 90%, non-condensing (operating)

5 to 95%, non-condensing (non-operating)

Air pressure:

600 to 1100 hPa

1.4.3 EMC and Safety

Electromagnetic compatibility:

EN55103-1/FCC-47 part 15B

EN55103-2

EN50121-4

EN50130-4

Electrical safety:

IEC60065 (CB-scheme)

EN60065

Approvals:

CE marking

EN60849, EN54-16 and ISO7240-16

IEC60945

1.4.4 Mean time between failures

Expected lifetime:

50,000 hours at +55 °C

MTBF:

500,000 hours

(based on real warranty return rate data)

1.4.5 System bus

Power supply via network:

18 to 56V (DC)

No fault reporting when >20V

Network power consumption:

6.2 W (excluding keypads)

1.4.6 Backup power supply

Backup voltage:

18 to 56 V(DC)

No fault reporting when > 20 V

Backup current:

max. 2 A (with maximum number of keypads)

1.4.7 Microphone

Microphone input sensitivity:

-55 dBV (balanced)

Input control range:

-7 to 8 dB

S/N:

min. 60 dB at rated sensitivity

Headroom:

min. 30 dB at rated sensitivity

Bandwidth:

340 to 14000 Hz (-3 dB ref. 1 kHz)

Supervision limits:

180 to 14000 ohm (dynamic microphone)

0.2 to 4.8 mA (electret microphone)

1.4.8 Loudspeaker

Impedance:

8 to 32 ohm

Signal/Noise ratio:

typical 80 dB \pm 3 dB at max. output

Output power:

typical 100 mW, max. 300 mW

1.4.9 Headset

Mic. input sensitivity:	-44 dBV
Input sensitivity control range:	-7 to 8 dB
Microphone current for headset detection:	0.15 to 0.8 mA
Signal/Noise:	60 dB at rated sensitivity (microphone) 80 dB (earphone)
Earphone impedance:	min. 16 ohm (typical 32 W)
Crosstalk (earphone to microphone):	max. -40 dB
Bandwidth:	340 to 14000 Hz (-3dB ref. 1 kHz)
Output power:	0.1 to 30 mW (typical 1 mW)
Volume control voltage:	0 to 3.3 V

1.4.10 Controls

Loudspeaker and headset volume	
Volume control voltage:	0 to 3.3 V
Control input 1, 2 and PTT input contact	
Resistance detection (supervision enabled):	
Cable short circuit	< 2.5 kohm
Contact closed	7.5 kohm to 12 kohm
Contact open	17.5 kohm to 22 kohm
Cable broken	> 27 kohm
Resistance detection (supervision disabled):	
Contact closed	< 12 kohm
Contact open	> 17.5 kohm
Control outputs	
Output type:	open collector/drain
Internal output supply current:	max. 10 mA (per pin) max. 30 mA (in total max. 3 LEDs are simultaneously on)
Output voltage:	max. 56 V (per pin)
Output sink current:	max. 100 mA per output switch pin

1.4.11 Buzzer

Buzzer voltage:	3.3V
------------------------	------

2 PRS-CSRSM Remote Call Station Module

2.1 Introduction

The PRS-CSRSM Remote Call Station Module can be used to make custom-made remote call stations (e.g. a remote emergency call station). The module uses a built-in limiter and speech filter for improved intelligibility. The module has a metal housing for easy mounting and stacking in cabinets, and screw connectors for easy interconnection to microphone, loudspeaker, switch and indicators. See figure 2.1 for a block diagram of the remote call station module.

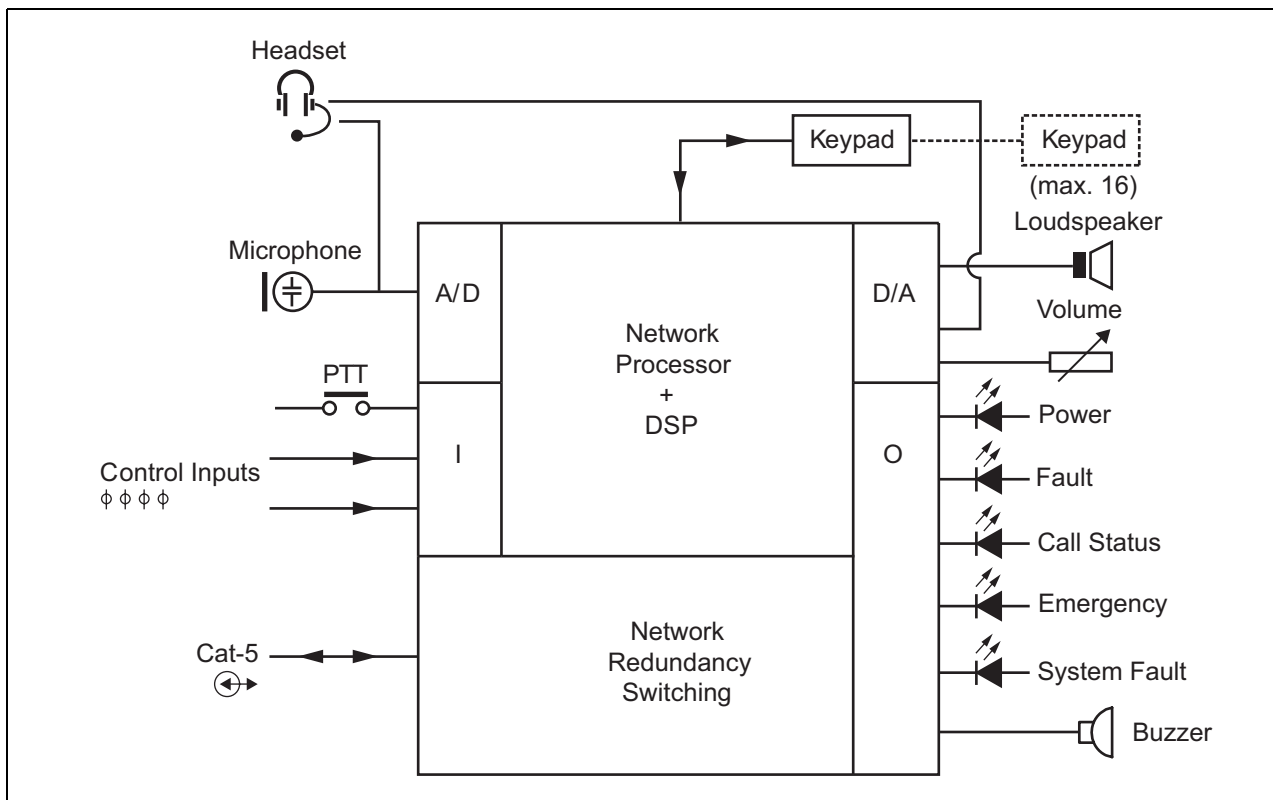


figure 2.1: Block diagram PRS-CSRSM

2.2 Controls, connectors and indicators

The remote call station module contains the following connections (see figure 2.2 and figure 2.3):

- | | |
|--|--|
| <ol style="list-style-type: none"> 1 Back-up supply/Buzzer - Besides powering the call station module via the system network connector (7), it can also be powered externally from a back-up power supply via this connector (see section 2.2.1). On this connector also a buzzer can be connected. 2 Microphone/PTT key - The microphone input is used to connect a microphone and a Press-To-Talk (PTT) switch (see section 2.2.2) 3 Loudspeaker/Control Inputs - The loudspeaker is meant for listening to chimes, pre-recorded messages and alarms (see section 2.2.3) activated by a PTT key of the call station or one of its keypads (see section 47.3.3 of the IUI Praesideo 4.0). This connector also provides | <ol style="list-style-type: none"> 4 Headset/Volume control potentiometer - This connector provides the possibility to connect a headset and a volume control potentiometer to the call station module (see section 2.2.4). This potentiometer also controls the volume of a loudspeaker connected to 3. 5, 6 Control input/outputs - The control input and five control outputs on these two connectors act in a similar way as the PTT key and LEDs on the LBB4430/00 Call Station Basic (see section 2.2.5). 7 PRS-CSI connection - An RJ45 connector to connect the remote call station module to a call station interface via a straight Cat-5 cable. 8 Factory test connector. |
|--|--|

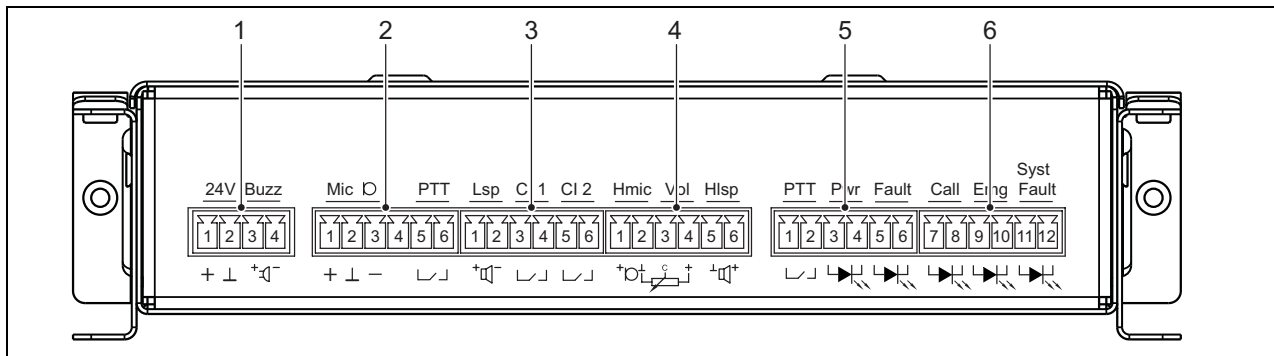


figure 2.2: PRS-CSR installer front view

Note
All cables connected to 1 to 6 must be less than 3 meter in length.

Caution
Do not connect the connector 7 to any Telecom or Ethernet network. This connection is dedicated for PRS-CSI only.

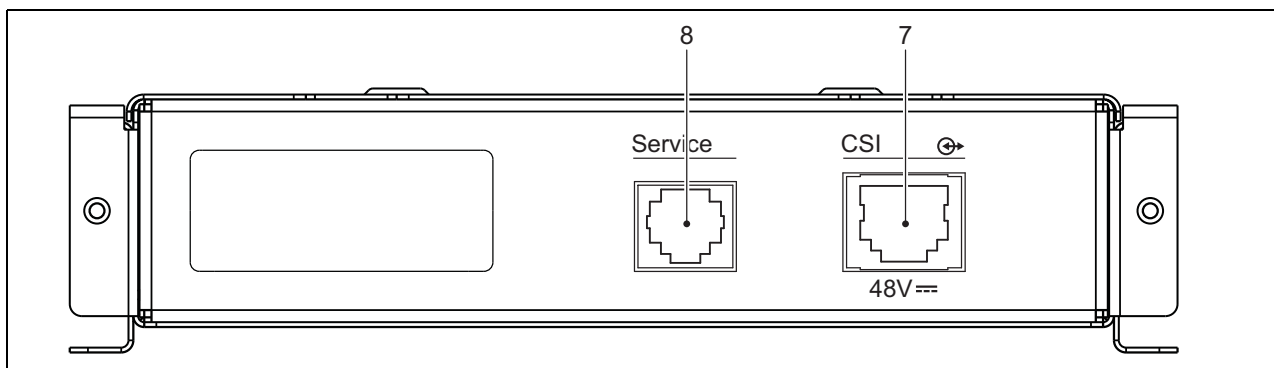


figure 2.3: PRS-CSR system front view

2.2.1 Back-up supply/Buzzer (1)

This 4-pin connector provides the input for a backup power supply and a buzzer. Typically a 24V supply is used, but a voltage in the range 18..56V is allowed. A buzzer can be connected here for fault and alarm notification. A low voltage type buzzer must be used that can operate on 3V. Suitable models are the Mallory PK-20A35EWQ or Alan Butcher Components ABI-004-RC.

table 2.1: Back-up supply/buzzer connector details

Pin	Signal
1	Back-up supply (+)
2	Back-up supply (GND)
3	Buzzer (+)
4	Buzzer (-)

2.2.2 Microphone/PTT key connection (2)

This 6-pin connector provides the connection for a microphone and a PTT key. The following dynamic microphones are suited for use with the module:

- LBB9081 Hand-held Dynamic Microphone (including resistors for switch supervision).
- LBB9082 Gooseneck Dynamic Microphone.

table 2.2: Microphone/PTT key connector details

Pin	Signal
1	Mic +
2	GND
3	Mic -
4	--- not connected ---
5	PTT input contact
6	GND

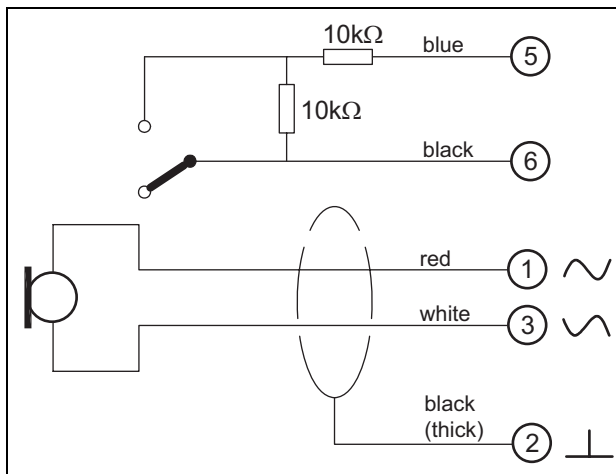


figure 2.4: LBB9081 connection diagram

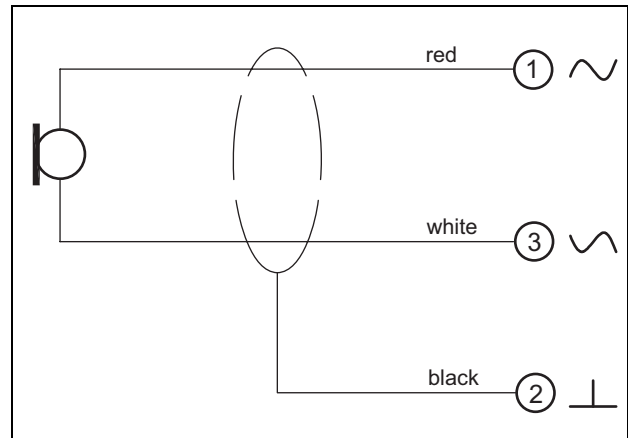
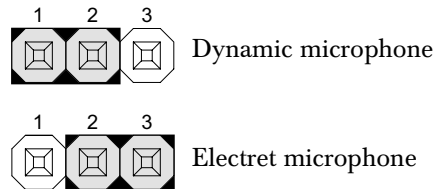


figure 2.5: LBB9082 connection diagram

For the selection of the microphone type, a jumper on X300 is used. To get access to this jumper, remove the top cover (see also section 3.3). For the location of X300 on the PCB see section 2.2.6.

Jumper settings:



2.2.3 Loudspeaker/Control inputs (3)

This 6-pin connector provides the connection to a loudspeaker and to two control inputs.

table 2.3: Loudspeaker/ Control Input connector details

Pin	Signal
1	Speaker +
2	Speaker -
3	Control input 1
4	Return control input
5	Control input 2
6	Return control input

The control inputs can be configured to act on contact make or on contact break (see section 4.3.4.7 of the IUI Praesideo 4.0). It is also possible to supervise the cables for short-circuits and open connections (see figure 2.6 and figure 2.7). Whether a control input is actually supervised or not, is defined in the configuration.

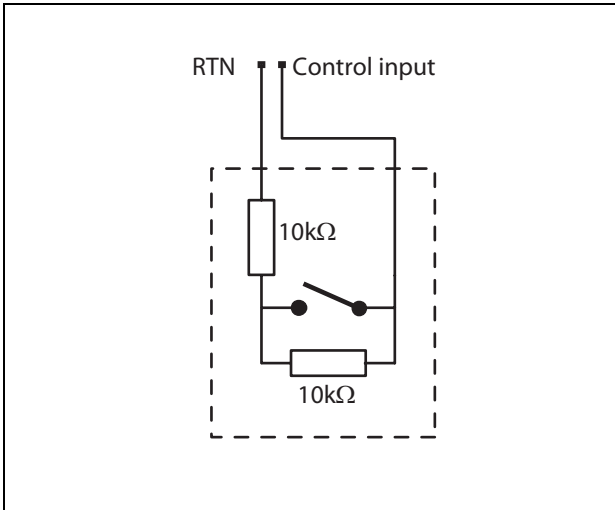


figure 2.6: Supervised control input

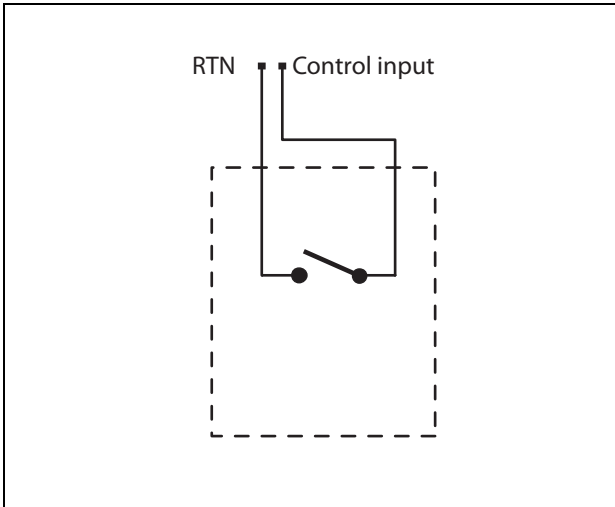


figure 2.7: Non-supervised control input

Warning
Do not connect DC or AC signals to the control inputs, otherwise the input circuit may be damaged. Only use voltage-free contacts.

Note
Do not combine control input wires of multiple control inputs (e.g. do not use a common return wire).

2.2.4 Headset/Volume control (4)

This 6-pin connector provides the connection to the headset and the volume control. This volume control also controls the volume of the loudspeaker connected to connection 3.

A logarithmic potentiometer R (typical value: 100 kohm) is used to attenuate the audio signal.

If a volume control is not needed, pin 3 and 4 must be connected to each other. The volume level of the earphone or loudspeaker is then at its maximum.

table 2.4: Headset/Volume Control connector details

Pin	Signal
1	Headset (mic +)
2	GND (mic -)
3	Audio-in from volume control
4	Audio-out to volume control
5	GND (earphone -)
6	Earphone +

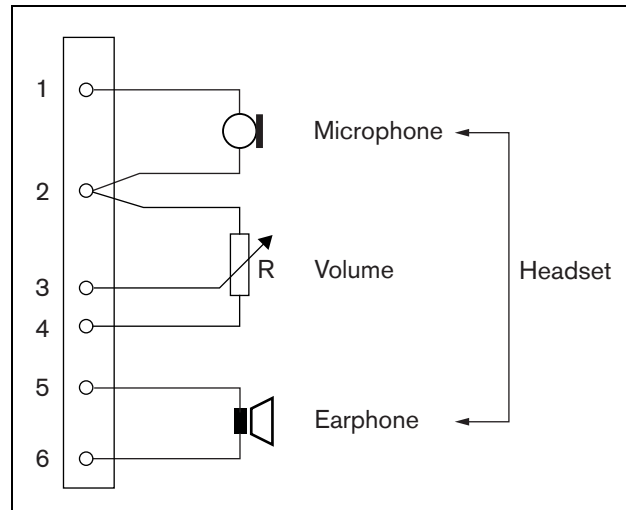


figure 2.8: Headset connection diagram

2.2.5 Control input/outputs (5, 6)

These two 6-pin connectors provide the connection of one control input for the PTT key and five control outputs for indicator LEDs.

table 2.5: Control inputs/outputs connector details

Pin	Signal
1	PTT input contact
2	GND
3	LED Power Indicator +/anode
4	LED Power Indicator -/cathode
5	LED Fault Indicator +/anode
6	LED Fault Indicator -/cathode
7	LED Call Status Indicator +/anode
8	LED Call Status Indicator -/cathode
9	LED Emergency Indicator +/anode
10	LED Emergency Indicator -/cathode
11	LED System Fault Indicator +/anode
12	LED System Fault Indicator -/cathode



Warning

Do not connect DC or AC signals to the control inputs, otherwise the input circuit may be damaged. Only use voltage-free contacts.

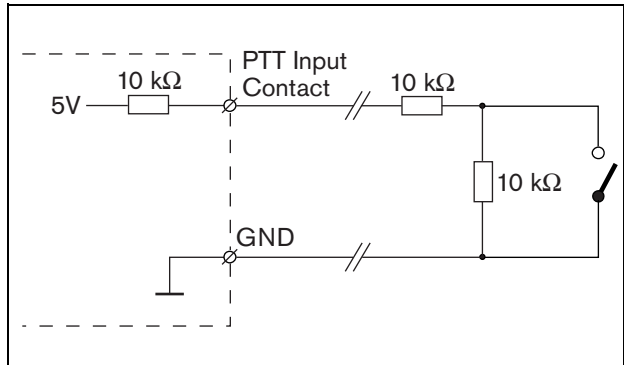


figure 2.9: Press-to-talk (PTT) key

The PTT input contact on this connector is in parallel with the PTT input contact on connector 2. Use only one of them.

See figure 2.9 for a connection diagram. The two resistors must be placed in the circuit, because the contact is always supervised by the system software.

In figure 2.10 the LED driver circuit is shown.

Typical colors for the indicator LEDs are:

- Green for power and call status indicators;
- Yellow for fault and system fault indicators;
- Red for the emergency indicator.

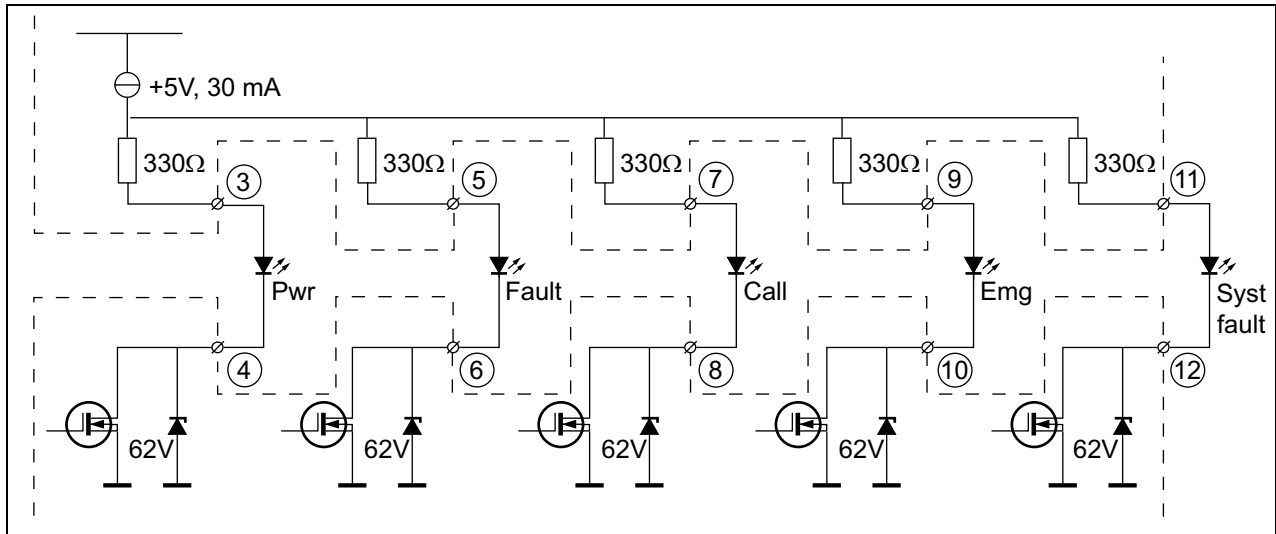


figure 2.10: Internally powered LEDs

- Pwr: Power indicator
- Fault: Fault indicator
- Call: Call status indicator
- Emg: Emergency indicator
- Syst Fault: System fault indicator

It is also possible to connect an externally powered lamp or LED (see figure 2.11), or an externally powered relay (see figure 2.12). Use pin 2 of connector 5 as GND.

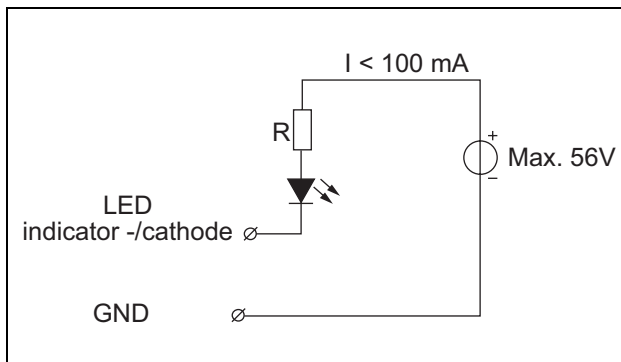


figure 2.11: Externally powered LED

The value of resistor R in figure 2.10 depends on the voltage of the external source, the forward voltage of the LED and the current flowing through the LED:

$$R = \frac{V_{source} - V_{forward}}{I}$$

For example, the voltage of the external source is 24 V, the forward voltage of the LED is 2 V and the current flowing through the LED is 10 mA, then:

$$R = \frac{24 - 2}{10 \cdot 10^{-3}} = 2200 (\Omega)$$

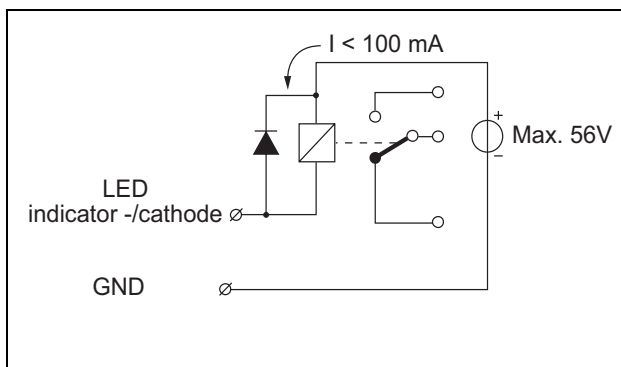


figure 2.12: Externally powered relay

2.2.6 Keypad interface (X1)

Additional keypads or keypad modules can be connected to this call station module via a 16-position flatcable, connected to X1. This flatcable is supplied with each keypad or keypad module.

Up to 16 keypads and/or keypad modules can be connected in series (loop through). See also section 3.3.

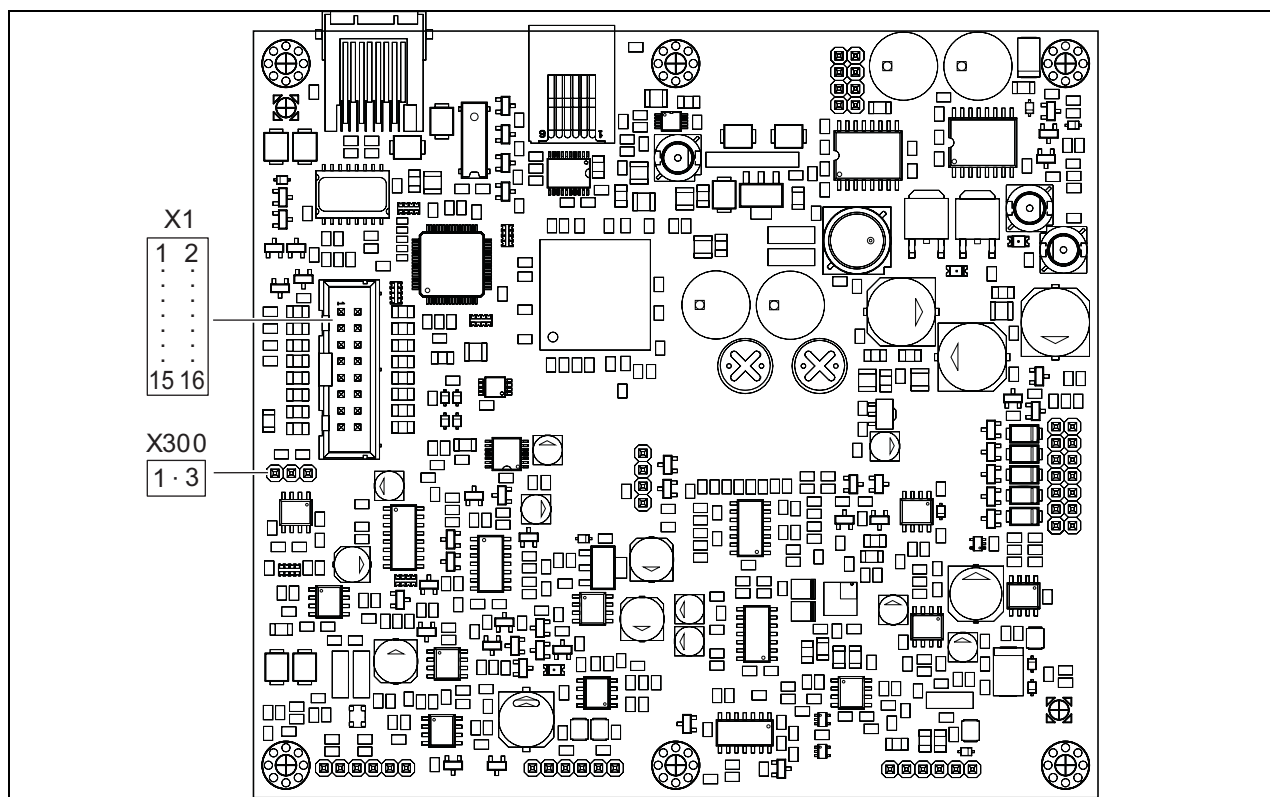


figure 2.13: Component side PCB of the PRS-CSR

2.3 Installation

The remote call station module is fitted with brackets and screw holes for easy installation. See figure 2.14. Make sure to leave enough space for the cables and the connectors.

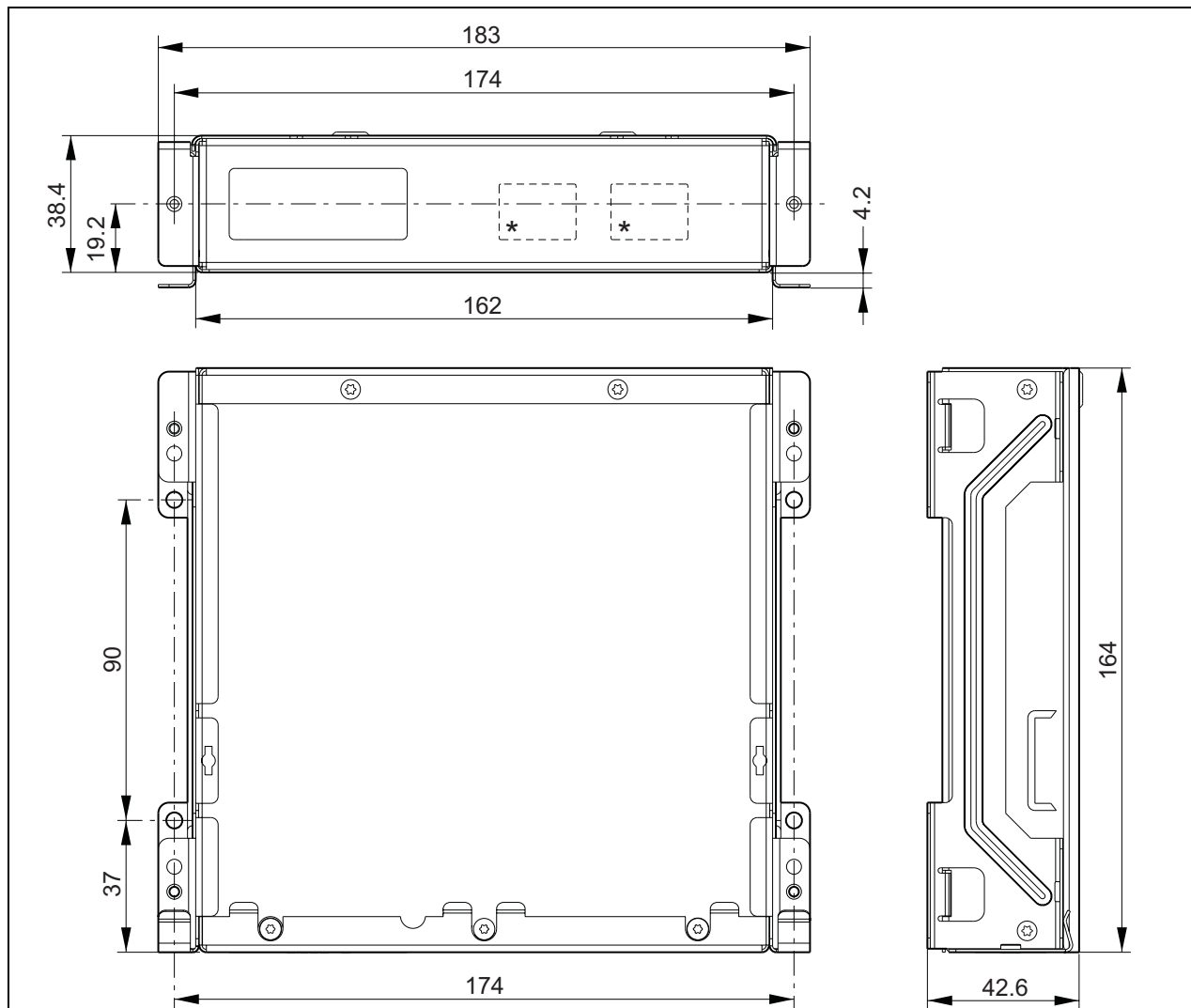


figure 2.14: PRS-CSR installation dimensions

* the exact layout depends on module type

2.4 Technical Data

2.4.1 Physical characteristics

Dimensions (H x W x D):

43 x 183 x 164 mm

Weight:

0.8 kg

2.4.2 Climate conditions

Temperature:

-5 to +55 °C (operating, guaranteed)

-15 to +55 °C (operating, sample tested)

-20 to +70 °C (non-operating)

Relative humidity:

15 to 90%, non-condensing (operating)

5 to 95%, non-condensing (non-operating)

Air pressure:

600 to 1100 hPa

2.4.3 Electromagnetic compatibility

Electromagnetic compatibility:

EN55103-1/FCC-47 part 15B

EN55103-2

EN50121-4

EN50130-4

Electrical safety:

IEC60065 (CB-scheme)

EN60065

Approvals:

CE marking

EN60849, EN54-16 and ISO7240-16

IEC60945

2.4.4 Mean time between failures

Expected lifetime:

50,000 hours at +55 °C

MTBF:

500,000 hours

(based on real warranty return rate data)

2.4.5 Call station interface

Connector:

RJ45

Cable type:

Cat-5 (4x twisted pair, straight)

Maximum cable length:

1000 m

Power supply via network:

18 to 56 V(DC)

No fault reporting when >20V

Network power consumption:

4 W at 48 V (excluding keypads)

2.4.6 Backup power supply

Backup voltage:

18 to 56 V(DC)

No fault reporting when > 20 V

Backup current:

max. 2 A (with maximum number of keypads)

2.4.7 Microphone

Microphone input sensitivity:

-55 dBV (balanced)

Input control range:

-7 to 8 dB

S/N:

min. 60 dB at rated sensitivity

Headroom:

min. 30 dB at rated sensitivity

Bandwidth:

340 to 14000 Hz (-3dB ref. 1 kHz)

Supervision limits:

180 to 14000 ohm (dynamic microphone)

0.2 to 4.8 mA (electret microphone)

2.4.8 Loudspeaker

Impedance:

8 to 32 ohm

Signal/Noise ratio:
typical 80 dB \pm 3 dB at max. output
Output power:

typical 100 mW, max. 300 mW

2.4.9 Headset

Mic. input sensitivity:	-44 dBV
Input sensitivity control range:	-7 to 8 dB
Microphone current for headset detection:	> 0.15 mA
Signal/Noise:	60 dB at rated sensitivity (microphone) 80 dB (earphone)
Earphone impedance:	min. 16 ohm (typical 32 W)
Crosstalk (earphone to microphone):	max. -40 dB
Bandwidth:	340 to 14000 Hz (-3dB ref. 1 kHz)
Output power:	0.1 to 30 mW (typical 1 mW)

2.4.10 Controls

Loudspeaker and headset volume	
Volume control potentiometer:	100 kohm logarithmic (typical)
Control input 1, 2 and PTT input contact	
Resistance detection (supervision enabled):	
Cable short circuit	< 2.5 kohm
Contact closed	7.5 kohm to 12 kohm
Contact open	17.5 kohm to 22 kohm
Cable broken	> 27 kohm
Resistance detection (supervision disabled):	
Contact closed	< 12 kohm
Contact open	> 17.5 kohm
Control outputs	
Output type:	open collector/drain
Internal output supply current:	max. 10 mA (per pin) max. 30 mA (in total max. 3 LEDs are simultaneously on)
Output voltage:	max. 56 V (per pin)
Output sink current:	max. 100 mA per output switch pin

2.4.11 Buzzer

Buzzer voltage:	3.3V
------------------------	------

3 PRS-CSKPM Call Station Keypad Module

3.1 Introduction

The PRS-CSKPM Call Station Keypad Module can be used to add keys and indicators to a custom-made call station based on the PRS-CSM (see section 1) or the PRS-CSR (see section 2). The module has a metal housing for easy mounting and stacking in cabinets, and screw connectors for easy interconnection to switches and indicators. See figure 3.1 for a block diagram of the call station keypad module.

For each key input, two LEDs are available as status indicators (LED1 and LED2).

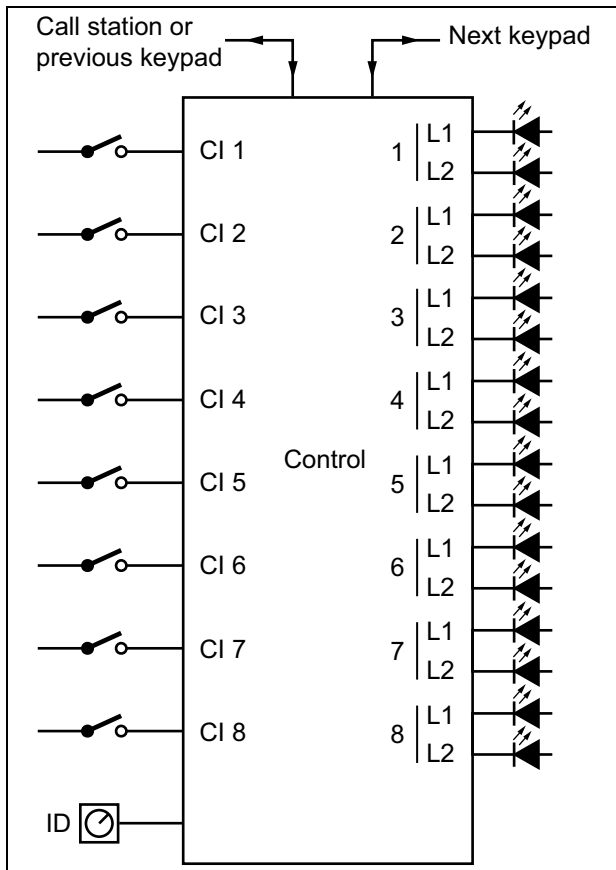


figure 3.1: Block diagram

3.2 Controls, connectors and indicators

The call station keypad module contains the connections (see figure 3.2):

1 Key inputs - The key inputs act in a similar way as the keys on the

LBB4432/00 Call Station Keypad (see section 3.2.1).
 2 Control outputs - The control outputs act in a similar way as the LEDs on the LBB4432/00 Call Station Keypad (see section 3.2.2).

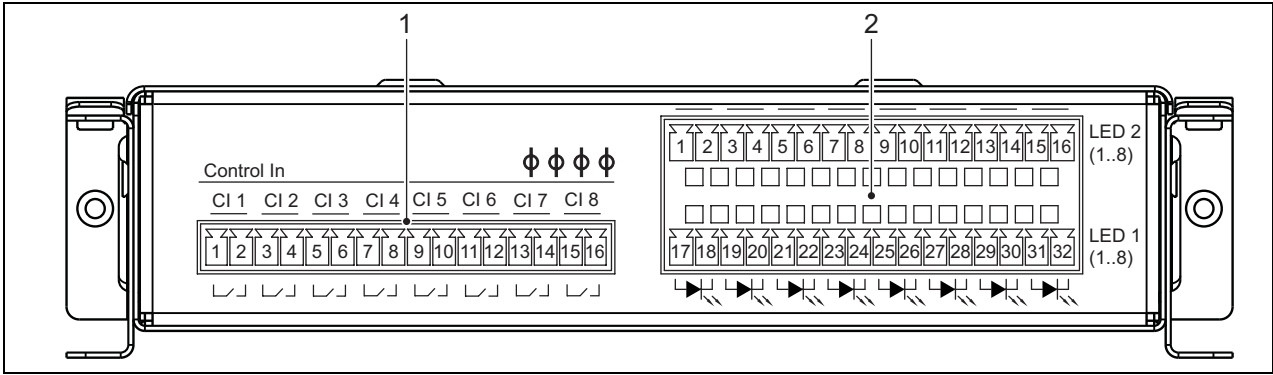



figure 3.2: PRS-CSKPM installer front view



Caution
 Disconnect the system cable from the call station (module) and back-up supplies before you connect a keypad to it. Connecting a keypad to a powered (remote) call station can damage the (remote) call station.

3.2.1 Key inputs (1)

The interface for key inputs consists of a connector with 16 positions. These control inputs are not supervised.

table 3.1: Control inputs connector details

Pin	Signal
1	Key input 1, contact
2	Key input 1, return
3	Key input 2, contact
4	Key input 2, return
5	Key input 3, contact
6	Key input 3, return
7	Key input 4, contact
8	Key input 4, return
9	Key input 5, contact
10	Key input 5, return
11	Key input 6, contact
12	Key input 6, return
13	Key input 7, contact
14	Key input 7, return
15	Key input 8, contact
16	Key input 8, return

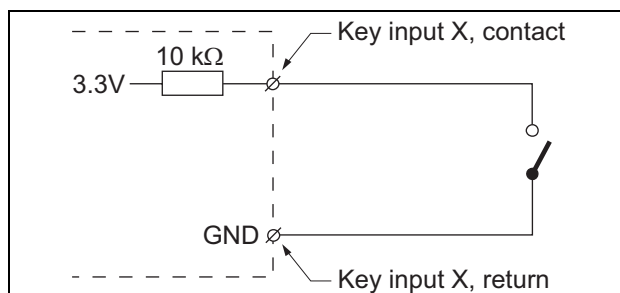


figure 3.3: Input connection diagram

3.2.2 Control outputs (2)

The interface for indicators consists of a double row connector with 2 x 16 positions.

table 3.2: X810 connector details

Pin	Signal
Top row	
1	LED 2 indicator 1 +/anode
2	LED 2 indicator 1 -/cathode
3	LED 2 indicator 2 +/anode
4	LED 2 indicator 2 -/cathode
5	LED 2 indicator 3 +/anode
6	LED 2 indicator 3 -/cathode
7	LED 2 indicator 4 +/anode
8	LED 2 indicator 4 -/cathode
9	LED 2 indicator 5 +/anode
10	LED 2 indicator 5 -/cathode
11	LED 2 indicator 6 +/anode
12	LED 2 indicator 6 -/cathode
13	LED 2 indicator 7 +/anode
14	LED 2 indicator 7 -/cathode
15	LED 2 indicator 8 +/anode
16	LED 2 indicator 8 -/cathode
Bottom row	
17	LED 1 indicator 1 +/anode
18	LED 1 indicator 1 -/cathode
19	LED 1 indicator 2 +/anode
20	LED 1 indicator 2 -/cathode
21	LED 1 indicator 3 +/anode
22	LED 1 indicator 3 -/cathode
23	LED 1 indicator 4 +/anode
24	LED 1 indicator 4 -/cathode
25	LED 1 indicator 5 +/anode
26	LED 1 indicator 5 -/cathode
27	LED 1 indicator 6 +/anode
28	LED 1 indicator 6 -/cathode
29	LED 1 indicator 7 +/anode
30	LED 1 indicator 7 -/cathode
31	LED 1 indicator 8 +/anode
32	LED 1 indicator 8 -/cathode

These outputs are used for the indication of the zone status. See sections 47.3.32 and 47.3.33 of the IUI Praesideo 4.0 for detailed information.

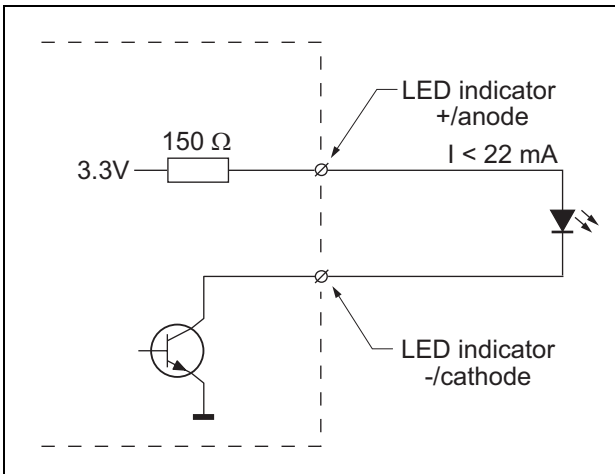


figure 3.4: Internally powered LED

By replacing the LED with an optocoupler, external loads can be switched, powered from an external power supply.



Note

The maximum total load for all control outputs together should be <64 mA.

3.2.3 Keypad interface (X5, X6)

A keypad module can be connected to a call station or a call station module, or connected to a previous keypad module. For the interconnection a 16-position flatcable is used, supplied with the keypad module. Up to 16 keypads and/or keypad modules can be connected in series (loop through).

The connectors X5 and X6 are in parallel, so either one of them can be used as incoming or outgoing interconnection.

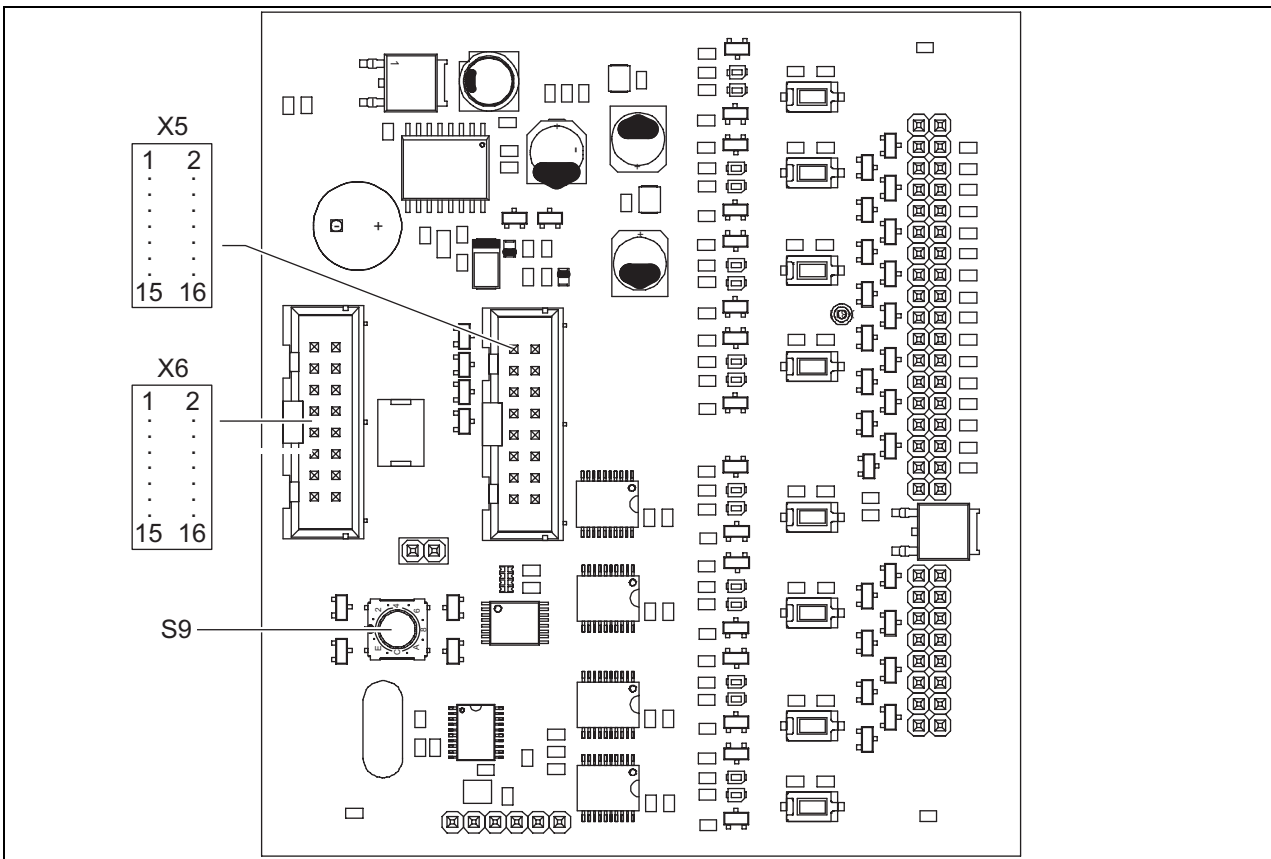


figure 3.5: Component side PCB of the PRS-CSKPM

3.2.4 ID selector (S9)

It is possible to connect:

- Up to 16 call station keypads to a (remote) call station.
- Up to 15 call station keypads and one numeric keypad (PRS-CSNKP) to a (remote) call station.

For communication between the call station and its keypads, the correct ID must be assigned to each keypad using the ID selector (see figure 3.5, no. S9 and figure 3.6).

The ID of a keypad depends on its position in the array of keypads. The first keypad has ID 0, the next 1, and so on up to F for the sixteenth keypad (hexadecimal notation).

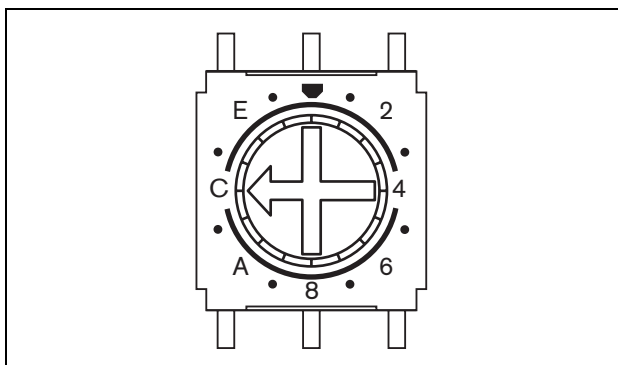


figure 3.6: ID selector

3.3 Installation

The call station module is fitted with brackets and screw holes for easy installation. See figure 3.7.

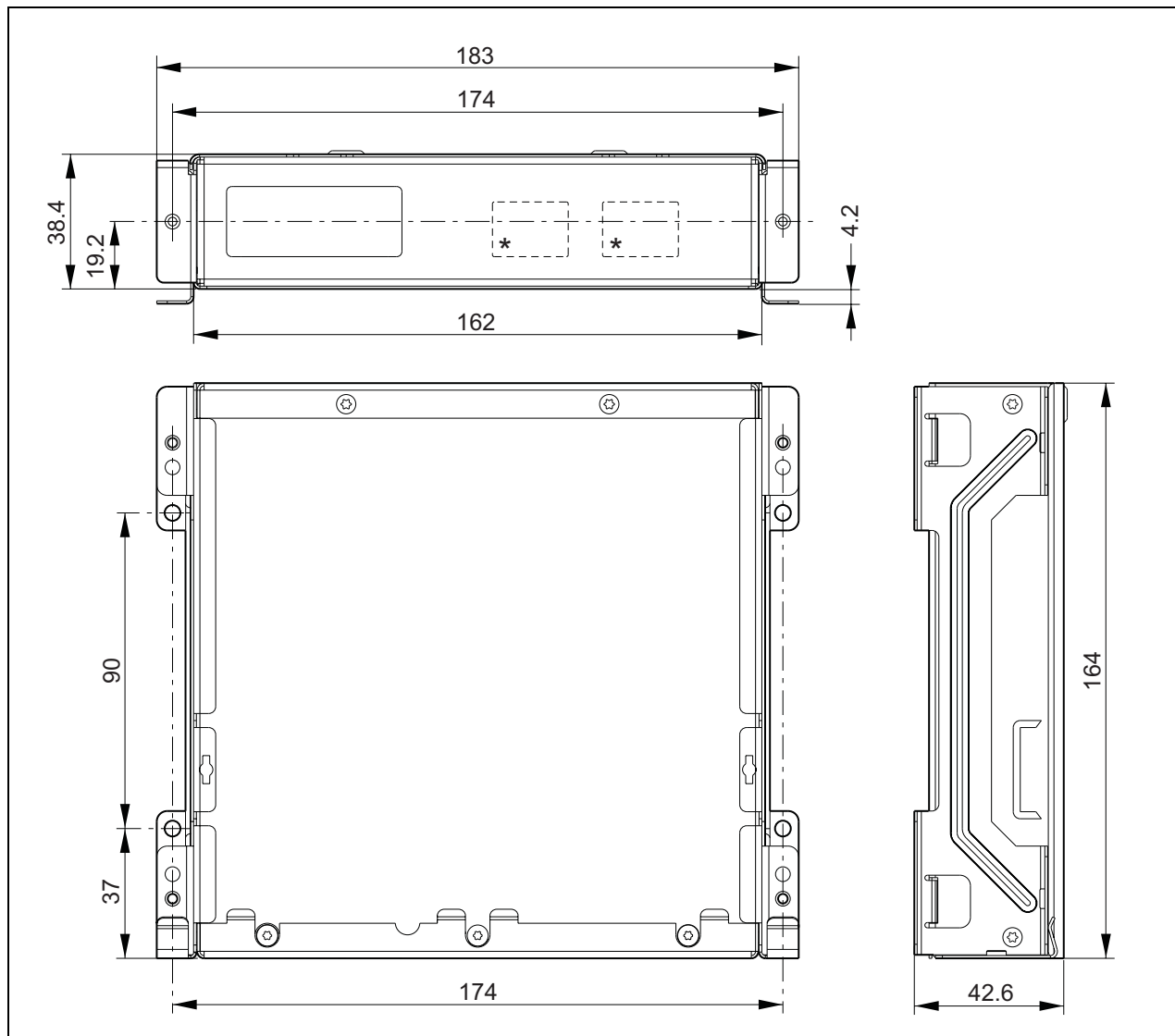


figure 3.7: PRS-CSKPM installation dimensions

* Exact layout depends on module type

3.3.1 Connecting the PRS-CSKPM to other modules

To connect a keypad module to an other module:

- 1 Remove the screws (A) of each module and slide the top cover (B) off (see figure 3.8).
Make sure that you keep the screws (A) for later use.

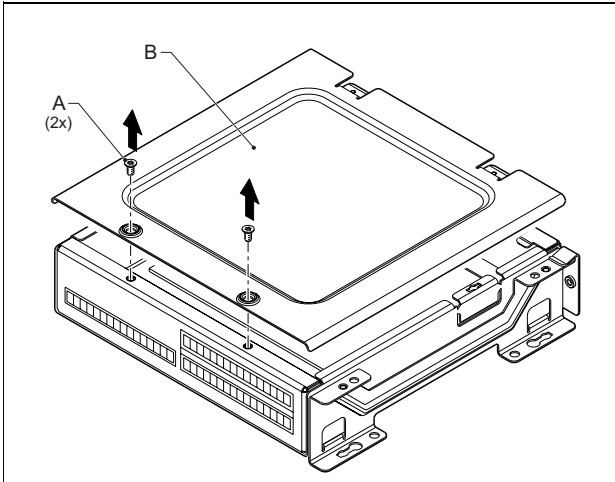


figure 3.8: Module cover removal

- 2 Remove the cable entry knock-outs (C) for the grommets in the modules (see figure 3.9). This depends on the way you want to position the modules (stacked, see figure 3.10 or next to each other, see figure 3.12).
- 3 Put the grommet (D) on the flatcables (E).
- 4 Connect the flatcable to the PCB.

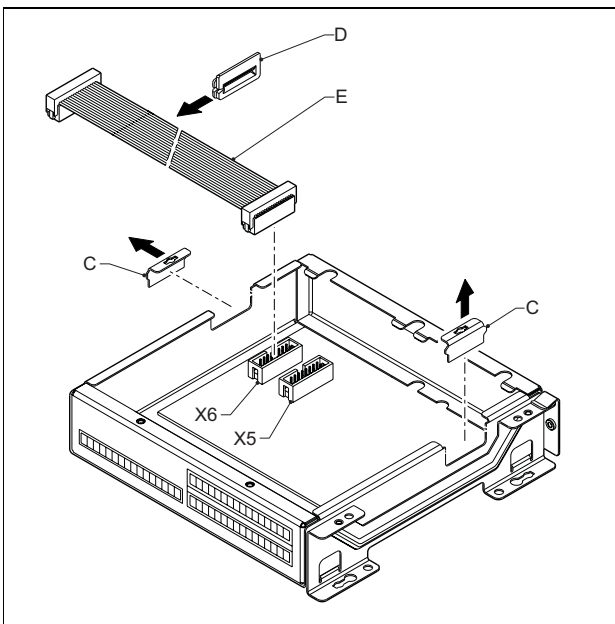


figure 3.9: Knock-out removal

- 5 Guide the flatcable to the other module (see figure 3.10 or figure 3.12) and insert the grommet into the knock-out hole.
- 6 Connect the flatcable to the other PCB.

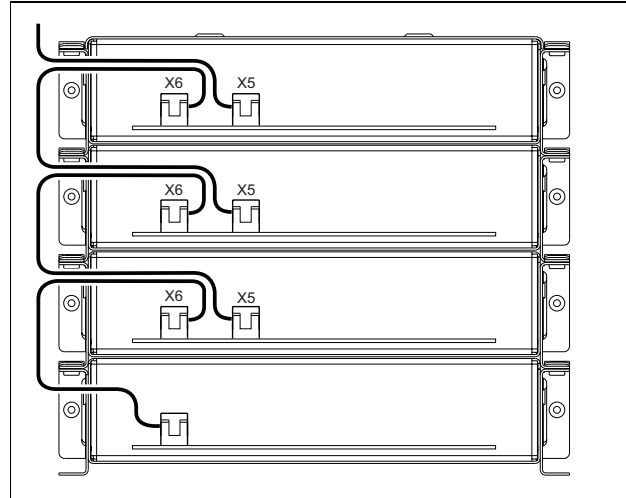


figure 3.10: Flatcable guidance (stacked modules)

- 7 Put the upper module on top of the lower module (see figure 3.11).
Slide the upper module into the spring clamp (F)
- 8 Place and tighten the screws (A)
Use the screws of the cover that you removed.
- 9 Install the cover on the upper module.

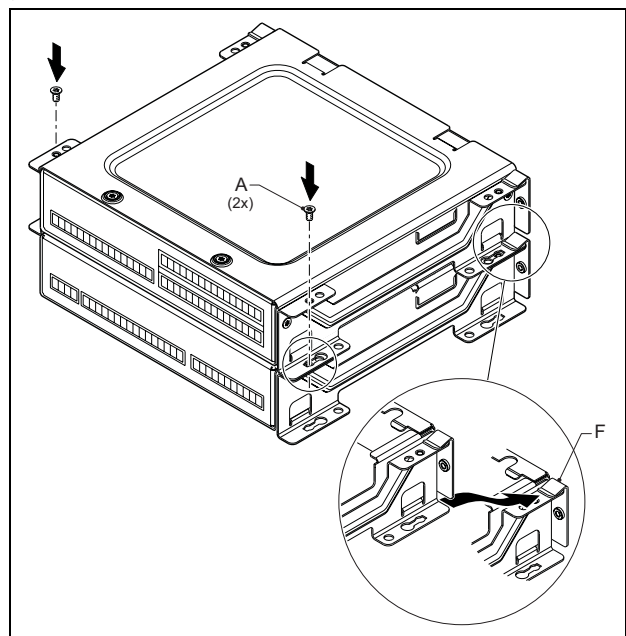


figure 3.11: Module stacking

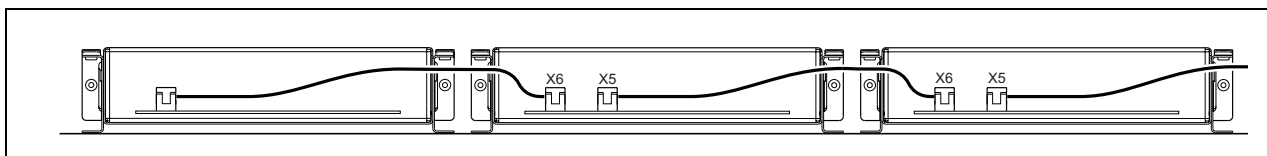


figure 3.12: Flatcable guidance (modules next to each other)

When the modules are not stacked, but mounted next to each other, put the top covers back on all modules (see figure 3.12).

3.4 Technical data

3.4.1 Physical characteristics

Dimensions (H x W x D):

43 x 183 x 164 mm

Weight:

0.8 kg

Max. flat cable length:

5 m (for all keypads together)

Max. wire length:

5 m (for all inputs and outputs)

3.4.2 Climate conditions

Temperature:

-5 to +55 °C (operating, guaranteed)

-15 to +55 °C (operating, sample tested)

-20 to +70 °C (non-operating)

Relative humidity:

15 to 90%, non-condensing (operating)

5 to 95%, non-condensing (non-operating)

Air pressure:

600 to 1100 hPa

3.4.3 EMC and Safety

Electromagnetic compatibility:

EN55103-1/FCC-47 part 15B

EN55103-2

EN50121-4

EN50130-4

Electrical safety:

IEC60065 (CB-scheme)

EN60065

Approvals:

CE marking

EN60849, EN54-16 and ISO7240-16

IEC60945

3.4.4 Mean time between failures

Expected lifetime:

50,000 hours at +55 °C

MTBF:

500,000 hours

(based on real warranty return rate data)

3.4.5 System bus

Power supply via network:

18 to 56V (DC)

No fault reporting when >20V

Network power consumption:

1.2 W

Bosch Security Systems B.V.

Torenallee 49

5617 BA Eindhoven

The Netherlands

www.boschsecurity.com

© Bosch Security Systems B.V., 2013