
ES4105.2 Housing

User's Guide

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1 Introduction

This section contains information about the basic features and applications of the ES4105.2 Housing.

1.1 Features

The ES4105.2 Housing is a compact housing for VME boards. It has the following features:

- 10 slots
- standard VMEbus and VME64x boards
- slots for standard Eurocards (100 mm x 160 mm) separated at 4 HP intervals (22.3 mm)
- 160-pin backplane
- +3.3 V, +5 V, +12 V, and -12 V power supply
- power adapter with wide input voltage range
- fan
- Case with tip-up/carrying handle
- 4 U front panel height
- power switch and fault indications on the front panel



2 Functional Description

This section contains a detailed description of the features of the housing.

2.1 Display Elements

The front panel of the housing has four LEDs and a control lamp in the power switch that show you various operating and error statuses.

Display	Significance
Power Switch	Power supply switched on and power voltage applied.
+3.3 V	The supply voltage +3.3 V is active.
+5 V	The supply voltage +5 V is active.
+12 V	The supply voltage +12 V is active.
-12 V	The supply voltage -12 V is active.

Tab. 2-1 Display on the Front Panel

2.2 Slots

The ES4105.2 Housing provides 10 slots at intervals of 4 HP. The slots are designed for standard Eurocards in 100 mm x 160 mm size. The front panel height of the plug-in boards measures 3 U.

2.3 Backplane

The backplane of the housing has 160 pins. The pin allocation complies with the extended VMEbus standard VME64x. Both VME-standard boards and extended VME64x-standard boards can be inserted.

2.4 Power Supply Unit

The power supply unit provides the voltages +3.3 V, +5 V, +12 V, and -12 V. The power supply unit is designed as a wide range unit with an input voltage range of 100 V to 260 V and a frequency range of 50 Hz to 60 Hz. Its maximum power is 180 W. All output voltages are protected against overcurrent.

2.5 Ventilation Fan

The housing is equipped with one fan.

2.6 Fuses

The mains voltage is protected with two fuses (3.15 A slow). The fuses are integrated in the line connector (on the rear of the housing).

3 Operation

This section provides information about the installation and removal of the VMEbus boards, fuse replacement, and automatic overcurrent protection of the housing.

3.1 Installation of VMEbus Boards

Some VMEbus boards need to be configured before they can be installed. The corresponding information can be found in the manuals of the VMEbus board.

note

The boards may only be configured and installed at a workplace that is protected against electrostatic discharges.

To install a board:

1. Turn off the power to the housing. Check that all devices connected with the housing by cables have also been powered off.
2. If the slot in which you want to install the board is protected by a cover, remove this cover.
3. Insert the board into the slot. Make sure that the top and bottom of the board smoothly slide in the guide rails.
4. Push the board in until the connector securely locks into place.
5. Fasten the mounting screws for the front panel of the board.
6. Connect the required cables with the front panel connectors.

3.2 Removal of VMEbus Boards

note

The boards may only be removed at a workplace that is protected against electrostatic discharges.

To remove a board:

1. Turn off the power to the housing. Check that all devices connected with the housing by cables have also been powered off.

2. Disconnect all connectors from the board you want to remove.
3. Loosen the mounting screws at the top and bottom edge of the board's front panel.
4. Grasp the handle of the board and pull the board carefully out.
5. Insert the board into its storage package or an anti-static bag.
6. Secure the slot with a protective cover.

3.3 Fuse Replacement

The power supply line of the built-in AC unit is protected by two 3.15 A fuses. Both the neutral wire and the phase wire have their own fuse.

To replace the fuses for the built-in AC unit:

1. Turn off the power to the housing. Check that all devices connected with the housing by cables have also been powered off.
2. Disconnect the power cable of the housing from the rubber socket.
3. Unlock the fuse holder (in the mains connector) with a screw-driver.
4. Replace the defective fuse with a new fuse rated 3.15 A (slow), 250V.
5. Reinsert the fuse holder.
6. Reconnect the power cable.

3.4 Automatic Overcurrent Protection

The built-in AC unit of the housing is equipped with an automatic overcurrent protection. If the AC unit detects an overcurrent condition for an output voltage, it shuts down all outputs. The corresponding front panel LED goes dark. The AC unit's overcurrent protection can be reset by briefly powering it off.

To reset the automatic overcurrent protection:

1. Turn off the power to the housing.
2. Wait approximately one minute.

3. Turn the power to the housing back on.

note

If the automatic overcurrent protection cannot be reset, check the fuses at the rear of the housing. A main fuse is defective if the control lamp in the power switch remains dark even when power has been switched on.

4 Connectors

This section contains information about the pin allocation of the connectors.

4.1 VME64x

The boards are connected using 160-pin VG multi-point connectors. The pins in rows a, b, and c correspond to the standard VMEbus.

Pin	Row z	Row a	Row b	Row c	Row d
1	MPR	D00	/BBSY	D08	VPC
2	GND	D01	/BCLR	D09	GND
3	MCLK	D02	/ACFAIL	D10	+V1
4	GND	D03	/BG0IN	D11	+V2
5	MSD	D04	/BG0OUT	D12	RsvU
6	GND	D05	/BG1IN	D13	-V1
7	MMD	D06	/BG1OUT	D14	-V2
8	GND	D07	/BG2IN	D15	RsvU
9	MCTL	GND	/BG2OUT	GND	/GAP
10	GND	SYSCLK	/BG3IN	/SYSFAIL	/GA0
11	/RESP	GND	/BG3OUT	/BERR	/GA1
12	GND	/DS1	/BR0	/SysReset	+3.3 V
13	RsvBus	/DS0	/BR1	/LWORD	/GA2
14	GND	/WRITE	/BR2	AM5	+3.3 V
15	RsvBus	GND	/BR3	A23	/GA3
16	GND	/DTACK	AM0	A22	+3.3 V
17	RsvBus	GND	AM1	A21	/GA4
18	GND	/AS	AM2	A20	+3.3 V
19	RsvBus	GND	AM3	A19	RsvBus
20	GND	/IACK	GND	A18	+3.3 V
21	RsvBus	/IACKIN	SERA	A17	RsvBus
22	GND	/IACKOUT	SERB	A16	+3.3 V
23	RsvBus	AM4	GND	A15	RsvBus
24	GND	A07	/IRQ7	A14	+3.3 V
25	RsvBus	A06	/IRQ6	A13	RsvBus

Tab. 4-1 Pin Allocation VME64x

Pin	Row z	Row a	Row b	Row c	Row d
26	GND	A05	/IRQ5	A12	+3.3 V
27	RsvBus	A04	/IRQ4	A11	LI-/I
28	GND	A03	/IRQ3	A10	+3.3 V
29	RsvBus	A02	/IRQ2	A09	LI-/O
30	GND	A01	/IRQ1	A08	+3.3 V
31	RsvBus	-12 V	+5 V Stby	+12 V	GND
32	GND	+5 V	+5 V	+5 V	VPC

Tab. 4-1 Pin Allocation VME64x (cont.)

4.2

Battery Ground

The GND of the VMEbus can be connected with an external ground (-UBatt) via the two two-pin Lemo connectors on the back of the chassis.

The pin assignment is as follows:

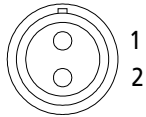


Fig. 4-1 Connector of "Battery Ground"

Pin	Function	Pin	Function
1	n.c.	2	-UBatt

Tab. 4-2 Pin Allocation of "Battery Ground"

5 Technical Data

This section contains the technical data of the ES4105.2 Housing in tabular form.

General Data

Mechanical structure	Case with tip-up/carrying handle
Slots	10 slots at 4 HP intervals for standard Eurocards (100 mm x 160 mm)

Mechanical Data

Height	4 U (177.2 mm)
Width	42 HP + 22.04 mm (235.4 mm)
Depth	310.0 mm

Power Supply Unit

Output voltages DC	+3.3 V, 15 A max. +5 V, 20 A max. +12 V, 3 A max. -12 V, 3 A max.
Input voltage	100 V to 240 V 50 Hz to 60 Hz
Power	180 W max.
Fuses	two fuses 3.15 A slow

Backplane

Standard	VME64x
Number of pins	160 per slot
Compatibility	Standard VMEbus VME64x
Termination	Passive

Additional Connectors

Battery Ground	on the rear of the housing
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Fan

Quantity	1
Mode	permanent
Air flow, free air	84 m ³ /h

Environmental Conditions

Operating temperature	0 °C to 70 °C (32 °F to 158 °F)
Storage temperature	-55 °C to +85 °C (-67 °F to 185 °F)
Operating humidity	0 to 95%, non-condensing

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