

ES1395.1 Load Conditioning Board

User's Guide



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Contents

1	Features	5
1.1	Configuring the Battery Voltage	7
1.2	Resistor in the Signal Path	8
1.3	Fuses	8
1.4	Addressing the LEDs	9
2	Connectors on the Front Panel	11
2.1	Load Channels	11
2.2	Battery Node Connector	11
3	Technical Data	13
4	ETAS Contact Addresses	15
	Index	17

1 Features

The ES1395.1 Load Conditioning Board is used to simulate pull-up/pull-down loads (ignition signals etc.).

The following figure shows the front panel of the ES1395.1.

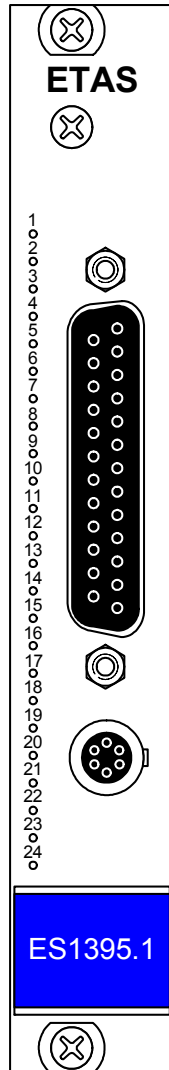


Fig. 1-1 Front Panel of the ES1395.1 Load Conditioning Board

Fig. 1-2 shows a simplified schematic of the 24 channels.

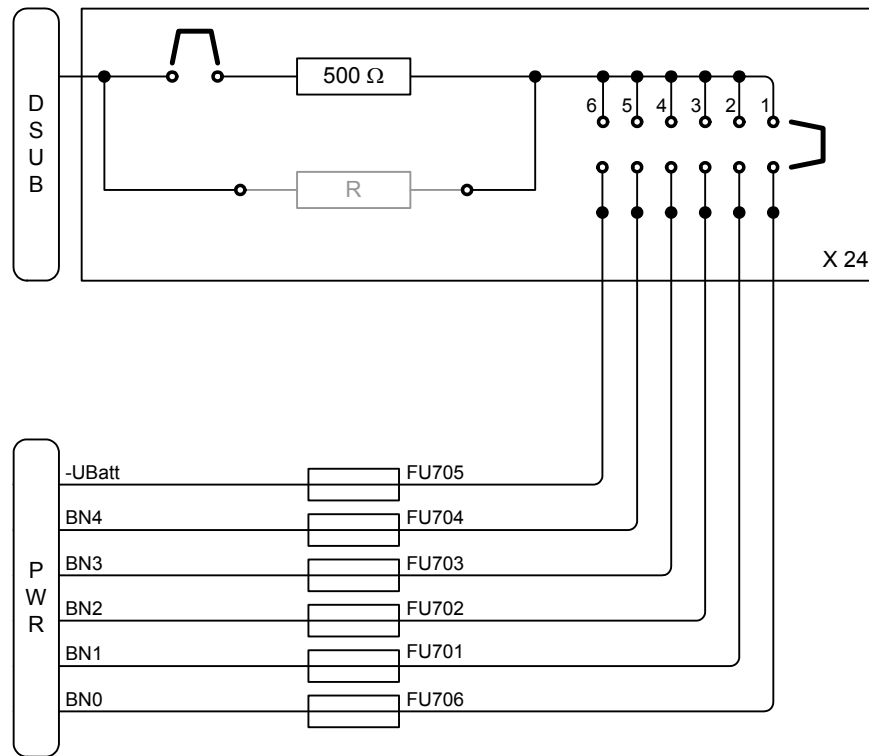


Fig. 1-2 Schematic of the ES1395.1

The signal fed in at the D-Sub connector is connected to the battery voltage selected via the jumper field (at the top right in the figure - see "Configuring the Battery Voltage" on page 7) via the 500 Ω resistor or a resistor which can be connected in parallel (or both - see "Resistor in the Signal Path" on page 8).

The battery voltages fed in at the "PWR" connector are protected by fuses (see "Fuses" on page 8).

Pin assignment is described in "Connectors on the Front Panel" on page 11.

In terms of resistors and potential, there are a few possible configurations which are described below.

1.1 Configuring the Battery Voltage

The battery node (or -UBatt) the relevant channel is connected to is determined at the jumper field to the right of the terminal strip.

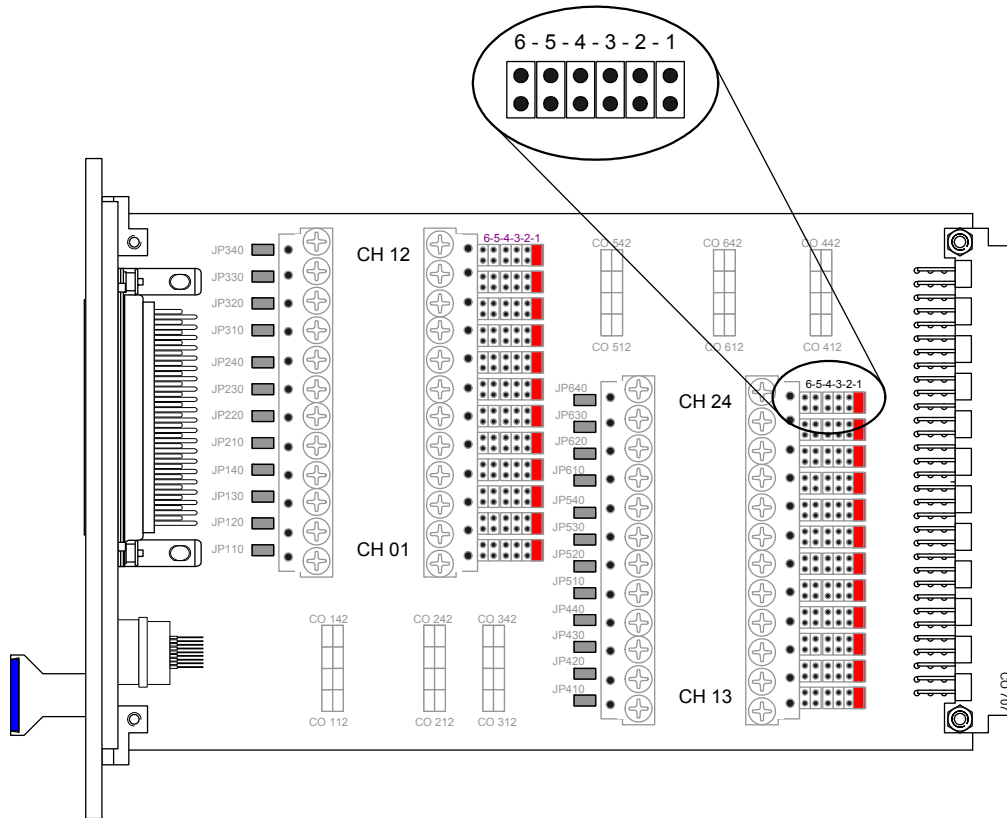


Fig. 1-3 Jumpers for Battery Voltages

The following table indicates which jumper connects to which battery node.

Jumper in Position	Connects the relevant channel of the ES1395.1 to
1	BN0
2	BN1
3	BN2
4	BN3
5	BN4
6	-UBatt

Tab. 1-1 Jumper Positions for the Battery Voltages

1.2 Resistor in the Signal Path

There is a 500 Ω resistor in the signal path - an additional resistor can be connected in parallel between the terminal strips. The original path via the 500 Ω resistor can be interrupted by removing the jumpers "JP 110" ... "JP 640" (see Fig. 1-4 and Fig. 1-2 on page 6).

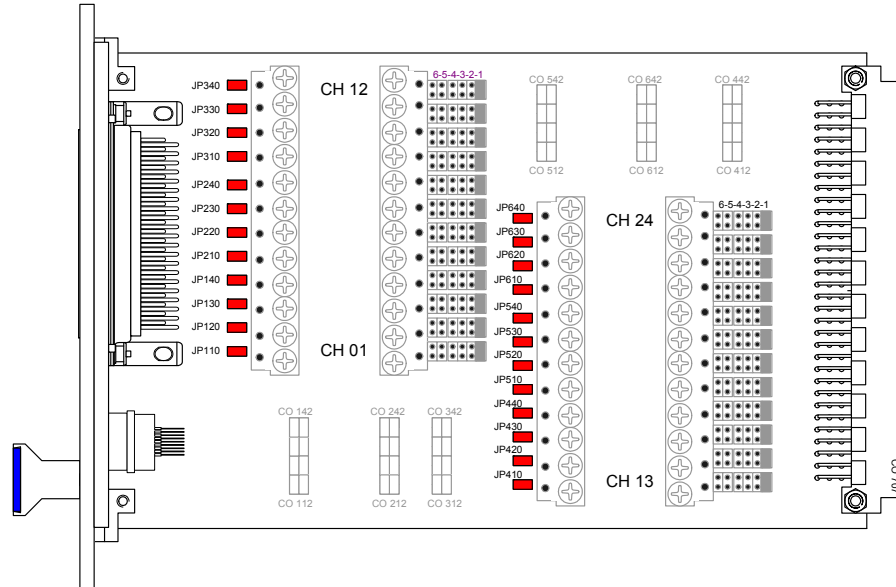


Fig. 1-4 Jumpers for Deactivating the Onboard Resistor

1.3 Fuses

The battery voltages supplied via the "PWR" connector are each protected with 2 A (FU701 ... FU705, type: NANO2 SMD, Littelfuse 154.002T).

Which fuse protects which battery voltage is shown in Fig. 1-2 on page 6 – the position of the fuses on the board is shown in Fig. 1-5.

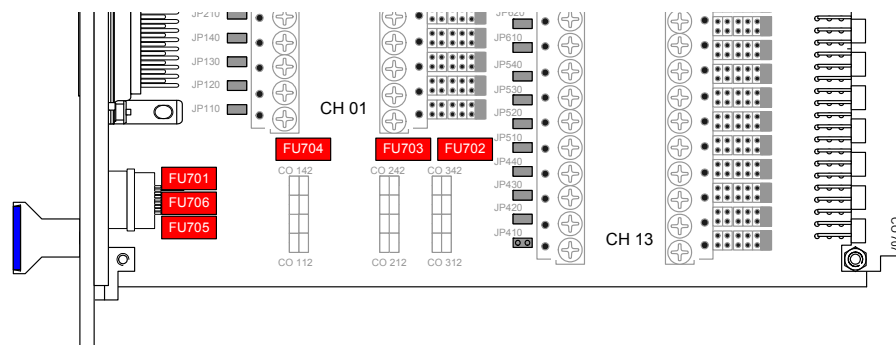


Fig. 1-5 Fuses for the Battery Voltages

1.4 Addressing the LEDs

There are 24 LEDs on the front panel of the ES1395.1 which – depending on the configuration – indicate the activity of the channel. The configuration takes place via the jumper fields

- CO 112 ... CO 142 (channels 1 ... 4)
- CO 212 ... CO 242 (channels 5 ... 8)
- CO 312 ... CO 342 (channels 9 ... 12)
- CO 412 ... CO 442 (channels 13 ... 16)
- CO 512 ... CO 542 (channels 17 ... 20)
- CO 612 ... CO 642 (channels 21 ... 24)

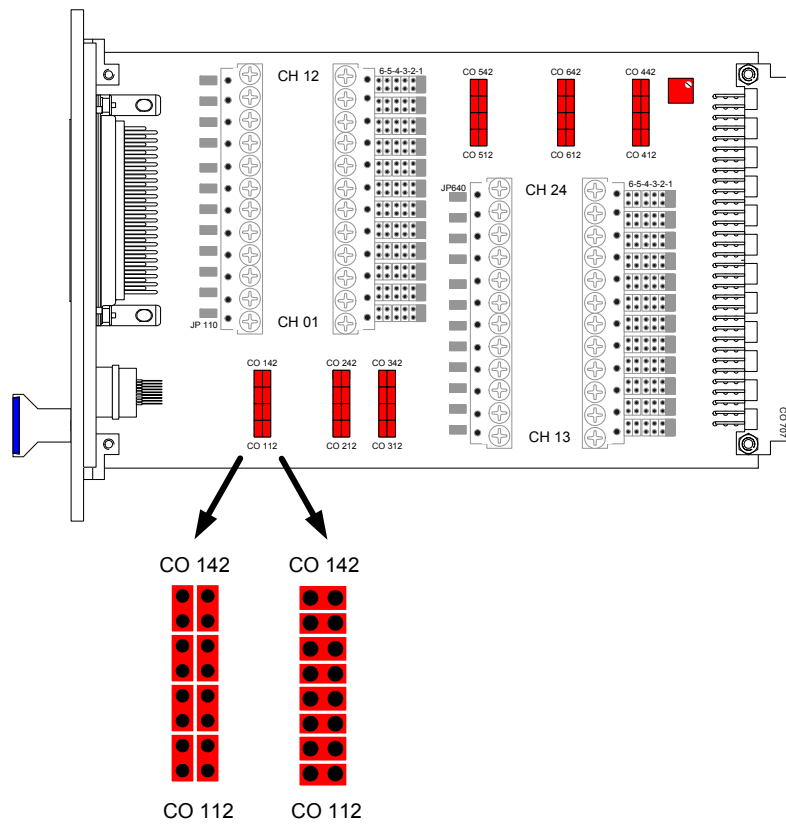


Fig. 1-6 Jumpers for Configuring the LEDs

If the two jumpers (per channel) are set vertically (on the left in the figure), the LED lights up when current flows when connected to a battery node (see "Configuring the Battery Voltage" on page 7). If the LEDs are to light up when current flows when connected to -UBatt, the jumpers must be set horizontally in pairs for the relevant channel (on the right in Fig. 1-6).

Switching Threshold of the LEDs

There is a trimmer potentiometer at the top right of the board for setting the threshold of the LEDs (see Fig. 1-6).

2 Connectors on the Front Panel

There are two connectors on the front panel for connecting load channels and battery nodes.

2.1 Load Channels

The 24 load channels can be accessed via a D-Sub connector.

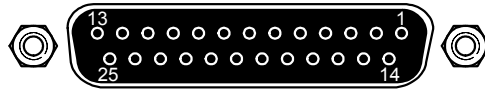


Fig. 2-1 D-Sub Connector

Type: D-Sub 25-pin (DB-25) (female)

Mating connector: D-Sub 25-pin (male)

The pin assignment is as follows:

Pin	Signal	Pin	Signal
1	Channel 1	14	Channel 14
2	Channel 2	15	Channel 15
3	Channel 3	16	Channel 16
4	Channel 4	17	Channel 17
5	Channel 5	18	Channel 18
6	Channel 6	19	Channel 19
7	Channel 7	20	Channel 20
8	Channel 8	21	Channel 21
9	Channel 9	22	Channel 22
10	Channel 10	23	Channel 23
11	Channel 11	24	Channel 24
12	Channel 12	25	n.c.
13	Channel 13	Housing	Protective earth

Tab. 2-1 Pin Assignment for the 24 Loads

2.2 Battery Node Connector

Battery nodes BNO..BN4 and -UBatt are fed at the following connector.

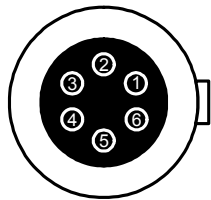


Fig. 2-2 Connector for Battery Nodes (View from the Front)

Type: LEMO EPG.1B.306.HLN

Mating connector: LEMO FGG.1B.306.CLAD62ZN

The pin assignment is as follows:

Pin	Signal
1	BN0
2	BN1
3	BN2
4	BN3
5	BN4
6	-UBatt

Tab. 2-2 Pin Assignment for the Battery Nodes

3 **Technical Data**

Number of channels	24
Default resistors	500 Ω , 0,5 W
Project-specific resistors	Up to 1 W/channel
Connector	D-Sub (DB-25)
LED state	For every channel - configurable as "high-active" or "low-active"
Potentials	Five battery nodes and GND
Connector for battery voltages	Front panel (Lemo)
Current battery nodes	2 A max.
Assignment of battery nodes to channel	Via jumper

4 **ETAS Contact Addresses**

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Index

B

Battery voltage
 configuring 7
 jumpers 7

C

Connectors 11

E

ETAS Contact Addresses 15

F

Front Panel 5
Fuses 8

L

LEDs
 addressing 9
 switching threshold 9

R

Resistor
 in the signal path 8

S

Schematic 6

T

Technical data 13

