6.7 High Voltage Card (HVC)

6.7.1 Features

- Voltages up to 150V (AC/DC)
- Current up to 15 A
- 12 Channels
- No internal connections to internal interconnection lines inside the FST
- Interconnectable outside the FST to several HVCs via the SUM Point
- Minimum channel resistance 0.04 Ohms

6.7.2 Connection Matrix

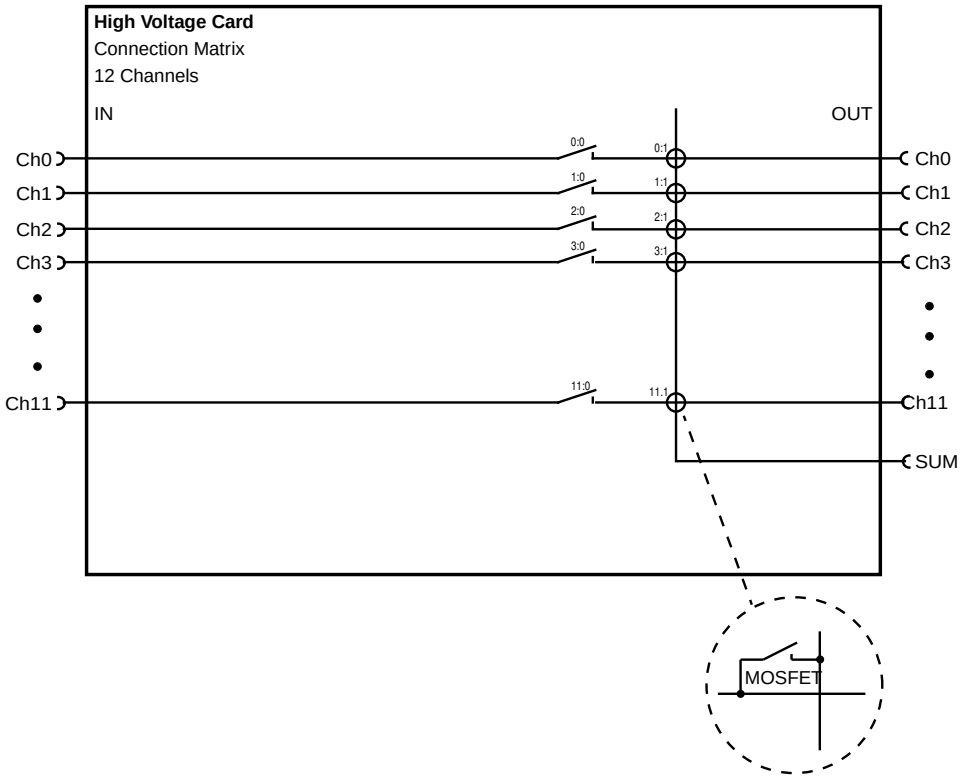

Figure 6.10: Connection Matrix of the High Voltage Card (HVC)

One channel of a HVC Card gives the possibility to connect input signals and output signals as follows.

- Connect / disconnect input and output of one channel.
- Connect several outputs located on the same card.
- Connect any output to the “SUM”-Point.

The MOSFETs on the HVC cards are protected by temperature switches. If the temperature of one MOSFET rises above 80degrees (C) all MOSFETs on this channel are switched off.

A channel which is switched off can only get working again if it cooled down enough. This needs about 1 minute. A channel which was in overload protection does not get reconnected automatically to its previous state again.

The HVC cannot be tested by the DIAG card.

6.7.3 MOSFETs on the PCB

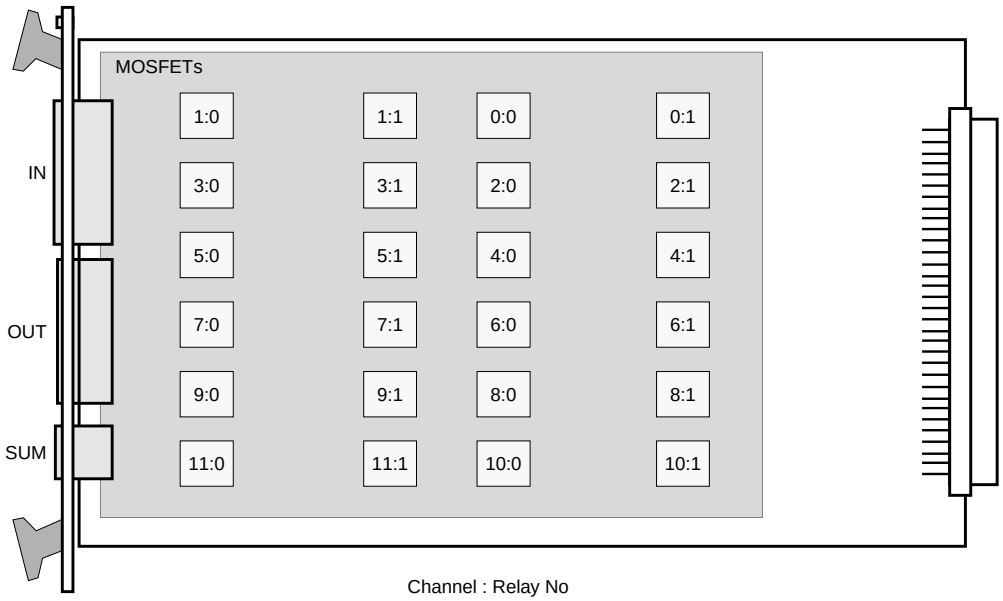

Figure 6.11: HVC: Board Layout

The numbers on the relays show number of the channel and the number of the switch (MOSFET).
The MOSFETs on the bottom side of the board have the same number as the corresponding ones on the top side, because two MOSFETs are needed for a bidirectional switch.

6.7.4 Initial State

Contrary to the Standard Relay Card, during the switched off condition the signal inputs and the signal outputs are not connected on the High Voltage Card. There is no connection between any signal and any interconnection line.

Immediately after the power-on or reset (RST-button or reset by software) all signal inputs are connected with the associated outputs. The signals are not connected with any “SUM”-Point.

The High Voltage Card could heat up to temperatures greater than 80˚Celsius during high current operations.
To avoid burns or other injury after running high current, allow the card to cool down for at least 10 minutes before removal.

6.7.5 Technical Data - High Voltage Card (HVC)

Technical Data	
Maximum Switching Voltage:	AC/DC < 150V This means voltage between different signals as well as voltage between any signal and the case of the FailSafeTester
Maximum Load: (High Current Section)	AC / DC: 15A when using one channel AC / DC: 8.0A when using all channels with the same load
Make current:	150A (max 1 s at duty cycle 10%)
Channels:	12
Operate Time:	<10us
Release Time:	10us
Contact Resistance	New condition: < 0.01 Ω
Channel Resistance	Between 0.03 and 0.04 Ω
Maximum Length of Connected Wires	<3 m, for EMV reasons This means Supply Voltage Connectors as well as Signal Connectors and the Serial- / CAN-Connector
Size (BxHxT)	290 mm x 145 mm x 20 mm (8 U, requires 1 Slots)
Connectors	2x Wago 734-112 (IN/OUT) 1x Wago 734-102 (SUM)
Current Consumption:	5V: 400mA 12V: 500mA