

PAD-V8 Module

8 channel voltage amplifier

- Intelligent amplifier with integrated A/D conversion
- 8 input channels for voltage and current measurement
- Internal watchdog timer for device failure protection
- Signal connection via 25 pin SUB-D connector



Module specifications

	PAD-V8
Input channels:	8 differential input channels
Input signals:	
Voltage:	± 150 mV, ± 500 mV, ± 1 V, ± 5 V, ± 10 V
Current:	± 20 mA (requires external 125 Ohm shunt resistor)
Resolution:	16 bit
Accuracy:	better ± 0.1 %
Isolation voltage:	1000 VDC to system no isolation between channels
Overvoltage protection:	± 35 VDC
Common mode voltage:	< 2 V
CMR (50/60 Hz):	> 92 dB
RS-485 interface:	Yes
Interface speed:	9600 bps
Power supply voltage:	+12 VDC (± 10 %)
Power consumption:	typical 1.2 W

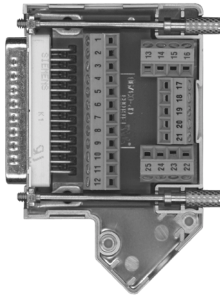
PAD-V8 Module

Signal connection

PAD-V8 module



The current module address is labeled in the address field.

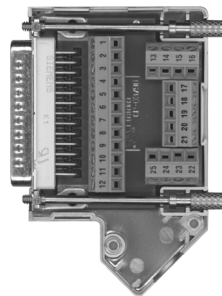


1	Channel 0	(+)	13	Channel 6	(+)
2	Channel 0	(-)	14	Channel 6	(-)
3	Channel 1	(+)	15	Channel 7	(+)
4	Channel 1	(-)	16	Channel 7	(-)
5	Channel 2	(+)	17	Not connected	
6	Channel 2	(-)	18	Not connected	
7	Channel 3	(+)	19	Not connected	
8	Channel 3	(-)	20	+12 VDC sensor supply	
9	Channel 4	(+)	21	Not connected	
10	Channel 4	(-)	22	GND	
11	Channel 5	(+)	23	Not connected	
12	Channel 5	(-)	24	Not connected	
			25	Not connected	

Connection options for PAD-V8 module

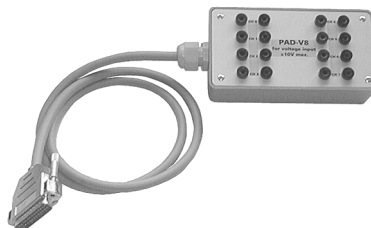
PAD-OPT2

25 pin SUB-D connector with screw terminal
(not included as a standard)



PAD-CB8

Connection box with banana connectors for
all 8 channels, cable length approx. 1 m
(not included as a standard)



Module commands

Command summary for PAD-V8 module

Command	Syntax
<i>GENERAL COMMANDS</i>	
Set configuration	%(OldAddr)(NewAddr)(InputRange)(BaudRate)(DataFormat)
Read configuration	\$(Addr)2
Read module name	\$(Addr)M
Read firmware version	\$(Addr)F
<i>FUNCTIONAL COMMANDS</i>	
Read analog data from channel x	#(Addr)(ChannelNo)
Span calibration	\$(Addr)0
Zero calibration	\$(Addr)1
Enable / disable channel for multiplexing	\$(Addr)5(ChannelVal)
Read channel multiplexing status	\$(Addr)6

Set configuration:

Syntax: %(OldAddr)(NewAddr)(InputRange)(BaudRate)(DataFormat)

Description: % Command leading code
 (OldAddr) The original / old module address. The factory default address of a module is FF. The address range is 00 to FF hex.
 (NewAddr) The new module address (be careful to get no conflict with existing module addresses).
 (InputRange) Define the analog input range, referred to the table *input range* on next page.
 (BaudRate) Define communication baud rate, has to be '06' for 9600 baud (no other values valid).
 (DataFormat) Define checksum and output data format, referred to the table *data format* on next page.

Response: !(Addr)<CR> The command to this address is valid.
 ?(Addr)<CR> The command is invalid, parameter values are invalid or change settings not possible.

Example: Command %0130090600<CR>
 Description: %: command leading code
 01: old module address
 30: new module address
 09: input range (± 5 V)
 06: baud rate (9600)
 00: data format (engineering units, checksum disabled)
 <CR>: carriage return
 Response !30<CR>
 Description: Address successfully changed from 01 to 30.

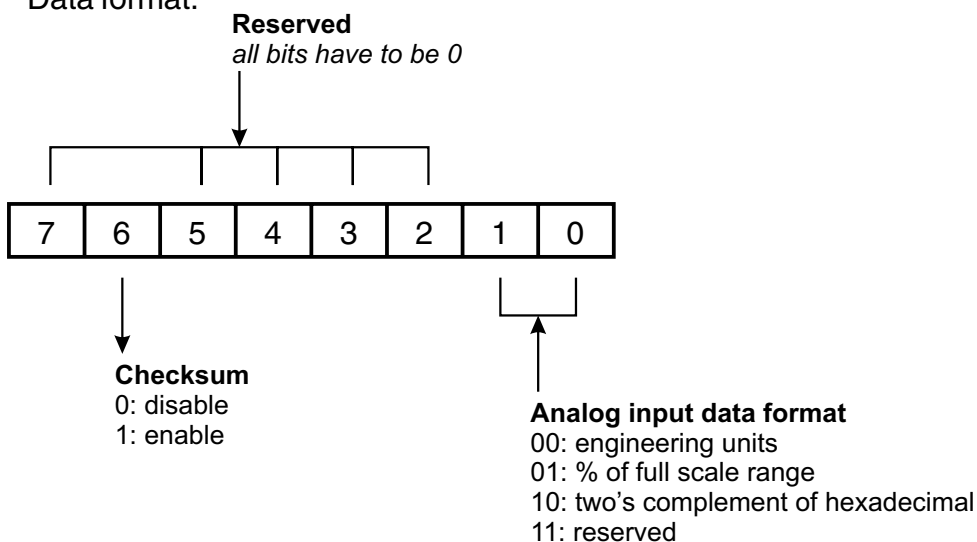
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Module commands - configuration tables

Input ranges:

Code (hex)	Input range
08	±10 V
09	±1 V
0A	±1 V
0B	±500 mV
0C	±150 mV
0D	±20 mA (requires external 125 Ohm shunt resistor)

Data format:



Module calibration

All PAD-V8 modules are within specifications when leaving the factory. The time interval for recalibration depends on environmental conditions. Typically, the calibration should be checked once a year.

For recalibration, perform following steps:

1. Select the correct input range on the module.
2. Apply the correct *zero calibration voltage* (see table) for the selected range to the module.
3. Send 'Zero calibration \$(Addr)1' to the module.
4. Apply the correct *span voltage* (see table) for the selected range to the module.
5. Send 'Span calibration \$(Addr)0' to the module.
6. Repeat steps 2 to 5 three to five times.

Code (hex)	Input range	Zero calibration voltage	Span calibration voltage
08	±10 V	0 mV	+10 V
09	±5 V	0 mV	+5 V
0A	±1 V	0 mV	+1 V
0B	±500 mV	0 mV	+500 mV
0C	±150 mV	0 mV	+150 mV
0D	±20 mA	0 mA	+20 mA