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SM3300 - Interface modules

Models	Description
INT MOD ANA	Isolated analog interface
INT MOD SER	Multi-protocol serial interface
INT MOD DIG	Digital I/O interface
INT MOD CON	Isolated contacts interface

General Features

- Plug and play for the SM3300 series power supplies
- Multiple interfaces possible per power supply
- Isolated from the output voltage Working voltage 1000V
- Floating with respect to earth

Features   INT MOD ANA

Analog controller interface

- High accuracy, low drift
- 16 bit AD and DA conversion
- Compatible with other Delta Elektronika 15p analog interfaces
- Factory calibrated for optimum accuracy

Features   INT MOD DIG

Digital (user) I/O

- 8 inputs Logic high = 2.5 ... 30V, Logic low = 0V
- 8 Open Drain outputs 0 - 30V, max. 200mA
- Programmable via Ethernet or sequences

Features   INT MOD CON

Isolated contacts

- 4 relays with make-and-break contacts
- Additional (floating) Interlock with 24V enable system
- Programmable via Ethernet

Features   INT MOD SER

Serial controller interface

- Multi protocol RS232, RS485, RS422, USB
- Web based configuration
- Speeds up to 115.2 kbps

Isolated Analog Controller interface

Typical Applications

- Analog programming of voltage and current
- Analog monitoring of voltage and current
- Remote monitoring of the status signals: OverTemp, Limit, PowerSink OverLoad
- Remote Shut down of the power output using a 5V signal

Specifications

Analog Programming	CV	CC
Programming inputs input range accuracy offset temp. coeff. offset input impedance	0 - 5 V $\pm$ 0.2% - 1 ... +1 mV (on 5V) 10 μV / °C 10 MOhm	0 - 5 V $\pm$ 0.2% - 1 ... + 1 mV (on 5V) 10 μV / °C 10 MOhm
Monitoring output output range accuracy offset temp. coeff. offset output impedance	0 - 5 V $\pm$ 0.2% - 1... 1 mV (on 5V) 3 μV / °C 2 Ohm / max. 4 mA	- 5 V to + 5 V $\pm$ 0.2% - 1... 1 mV (on 5V) 60 μV / °C 2 Ohm / max. 4 mA

Reference voltage on prog. connector	V_{ref} TC	5.114 V $\pm$ 15 mV (Ro = 2 Ohm, max. 4 mA) 20 ppm
+12 V output on prog. Connector	V_o I_{max} R_o	12 V $\pm$ 0.2 V 0.2 A 5 Ohm
Status outputs CC - status LIM- status OT - status PSOL - status ACF - status DCF - status	CC - operation 5 V = logic 1 (R_o = 500 Ohm) CV or CC limit 5 V = logic 1 (R_o = 500 Ohm) Over Temperature 5 V = logic 1 (R_o = 500 Ohm) Power Sink Overload 5 V = logic 1 (R_o = 500 Ohm) AC - Fail 5 V = logic 1 (R_o = 500 Ohm) DC - Fail [2] 5 V = logic 1 (R_o = 500 Ohm) [2] output voltage $\pm$ 5% beyond set point	
Remote ShutDown	with + 5V, 1 mA or relay contact	

Insulation prog. connector - internal circuits prog. connector - earth	1000 VDC Reinforced isolation acc. EN60950-1 / EN61010-1 max. 60VDC
Safety	EN 60950 / EN 61010
Operating Temperature	$-$ 20 to + 50 °C
Humidity	max. 95% RH, non condensing, up to 40 °C max. 75% RH, non condensing, up to 50 °C
Storage temperature	$-$ 40 to + 85 °C

Mounting	Pluggable, SM3300 interface slots 2, 3, 4. See paragraph 'Hardware Installation' in this manual. Note1: cannot be plugged in slot1 Note2: max 1pcs MOD INT ANA per unit.
Programming connector	15 pole D-connector (female)
Weight	0.14 kg

Serial interface (multi-protocol)

Typical Applications

- RS232 Programming
- Balanced RS422 Programming
- USB Programming
- Balanced RS485 Bi-directional Programming

Specifications

Communication speeds (bps)	2400, 4800, 9600, 19200, 38400, 57600, 115200
Insulation prog. connectors - internal circuits prog. connectors - earth	1000 VDC Reinforced isolation acc. EN60950-1 / EN61010-1 max. 60VDC
Safety	EN 60950 / EN 61010
Operating Temperature	− 20 to + 50 °C
Humidity	max. 95% RH, non condensing, up to 40 °C max. 75% RH, non condensing, up to 50 °C
Storage temperature	− 40 to + 85 °C

Mounting	Pluggable, SM3300 interface slots 1, 2, 3 and 4. See paragraph 'Hardware Installation' in this manual. Maximum 4 per unit.
Programming connector	RS422 & RS485 wires via push wire or so-called push in connector (contra header supplied) RS232 via 9 pole D-connector (female), USB socket type B.

Digital User I/O

Typical Applications

- Hardware triggering of sequences
- Interaction with other equipment
- Stand-alone automation
- Safety or Alarm indications

Specifications

Logic inputs 1... 8	
Input range	2 - 30V
Input impedance	Rin = 22kOhm
Load current +5V	100mA
Logic outputs 1 ... 8	
Output type	Open Drain (True = 0V, False = open)
Output impedance	7 Ohm (max 30V/200mA)

Insulation	
prog. connectors - internal circuits	1000 VDC Reinforced isolation acc. EN60950-1 / EN61010-1
prog. connectors - earth	max. 60VDC
Safety	EN 60950 / EN 61010
Operating Temperature	− 20 to + 50 °C
Humidity	max. 95% RH, non condensing, up to 40 °C max. 75% RH, non condensing, up to 50 °C
Storage temperature	− 40 to + 85 °C

Mounting	Pluggable, SM3300 interface slots 1, 2, 3 and 4. See paragraph 'Hardware Installation' in this manual. Maximum 4 per unit.
Programming connector	User Outputs via 15 pole D-connector High Density (female), User Inputs via 15 pole D-connector High Density (female).
Weight	0.14 kg

Isolated Contacts

Typical Applications

- Trigger an external safety alarm
- Interact in automated processes
- Switch the output On/Off with a remote 24Vdc signal
- Using a floating signal for triggering the Interlock function

Specifications

Relay contacts 1... 4	
Contact voltage	60 V
Contact current	2 A
Maximum switching capacity	60 W
Floating Interlock	
Open circuit voltage	5 V
Floating Enable	
Nominal input voltage	24VDC
Input voltage range	15 - 30VDC
Input impedance	12kOhm

Insulation prog. connectors - internal circuits prog. connectors - earth	1000 VDC Reinforced isolation acc. EN60950-1 / EN61010-1 max. 60VDC
Safety	EN 60950 / EN 61010
Operating Temperature	− 20 to + 50 °C
Humidity	max. 95% RH, non condensing, up to 40 °C max. 75% RH, non condensing, up to 50 °C
Storage temperature	− 40 to + 85 °C

Mounting	Pluggable, SM3300 interface slots 1, 2, 3 and 4. See paragraph 'Hardware Installation' in this manual. Maximum 4 per unit.
Programming connector	Relay 1 & 2, via a 6 pole push wire or so-called push in connector. Relay 3 & 4, via a 6 pole push wire / push in connector. Interlock and Enable via a 3 pole push wire / push in connector. For all 3 connectors there's a contra header supplied.
Weight	0.14 kg