



## 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
<b>Programming inputs</b>			
input range		0 - 5 V	0 - 5 V
accuracy		± 0.2%	± 0.2%
offset		- 1 ... +1 mV (on 5V)	- 1 ... +1 mV (on 5V)
temp. coeff. offset		10 µV / °C	10 µV / °C
input impedance		10 MOhm	10 MOhm
<b>Monitoring output</b>			
output range		0 - 5 V	- 5 V to + 5 V
accuracy		± 0.2%	± 0.2%
offset		- 1... 1 mV (on 5V)	- 1... 1 mV (on 5V)
temp. coeff. offset		3 µV / °C	60 µV / °C
output impedance		2 Ohm / max. 4 mA	2 Ohm / max. 4 mA
<b>Reference voltage</b> on prog. connector		5.114 V ± 15 mV (Ro = 2 Ohm, max. 4 mA) 20 ppm	
<b>+12 V output</b> on prog. Connector		12 V ± 0.2 V 0.2 A 5 Ohm	
<b>Status outputs</b>			
CC - status	CC - operation	5 V = logic 1 (Ro = 500 Ohm)	
LIM - status	CV or CC limit	5 V = logic 1 (Ro = 500 Ohm)	
OT - status	Over Temperature	5 V = logic 1 (Ro = 500 Ohm)	
PSOL - status	Power Sink Overload	5 V = logic 1 (Ro = 500 Ohm)	
ACF - status	AC - Fail	5 V = logic 1 (Ro = 500 Ohm)	
DCF - status	DC - Fail <sup>2)</sup>	5 V = logic 1 (Ro = 500 Ohm) <sup>2)</sup> output voltage ± 5% beyond set point	
<b>Remote ShutDown</b>		with + 5V, 1 mA or relay contact	
<b>Insulation</b> prog. connector - internal circuits prog. connector - earth		1000 VDC Reinforced isolation acc. EN60950-1 / EN61010-1 max. 60VDC	
<b>Safety</b>		EN 60950 / EN 61010	
<b>Operating Temperature</b>		- 20 to + 50 °C	
<b>Humidity</b>		max. 95% RH, non condensing, up to 40 °C max. 75% RH, non condensing, up to 50 °C	
<b>Storage temperature</b>		- 40 to + 85 °C	
<b>Mounting</b>		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.	
<b>Programming connector</b>		15 pole D-connector (female)	
<b>Weight</b>		0.14 kg	



## Serial interface (multi-protocol)

### Typical Applications

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

### Specifications

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

<b>Mounting</b>	Pluggable, SM3300 interface slots 1, 2, 3 and 4. See paragraph 'Hardware Installation' in this manual. Maximum 4 per unit.
<b>Programming connector</b>	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

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

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

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

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

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

<b>Mounting</b>	Pluggable, SM3300 interface slots 1, 2, 3 and 4. See paragraph 'Hardware Installation' in this manual. Maximum 4 per unit.
<b>Programming connector</b>	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.
<b>Weight</b>	0.14 kg

