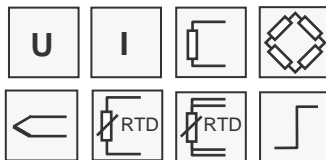


The ISM 111 is a multi-channel module for measuring up to four analog inputs and four digital I/Os. Analog inputs can be independently configured to measure current, voltage, resistance / Pt100 (2, 3, and 4 wire), thermocouple, and bridge inputs. The four digital channels can be set as inputs to monitor status, frequency, and counters, or as output to control actuators and displays. Measurement, linearization, and scaling is all 16 bit and all readings are accessible via the RS 485 fieldbus interface.

Local intelligence enables the ISM 111 to perform complex mathematical and logic functions using both measured inputs and internally calculated variables. The module supports the industry standard protocols of Profibus-DP, Modbus-RTU, and ASCII.



ISM 111



Up to 4 universal analog inputs

Voltage, current, resistance, Pt100, Pt1000, thermocouples, bridges

4 general purpose digital I/O

Status, frequency, counter, control signals

Logically and mathematically functions

Complex combination of the channels

Signal conditioning

Linearization, digital filter, averaging, scaling, alarm

RS 485 fieldbus interface

Profibus-DP, Modbus-RTU, ASCII

Order Information:

Product	Article No.
ISM 111	323816
Accessories	
Configuration Software	
ICP 100	633214
Cold Junction Compensation	
ICJ 108	516214
Converter RS 485 / RS 232 or USB	
ISK 200	229682
ISK 101	689326

Additional Features

- ADC resolution of 16 bit
- Total signal conditioning like customized linearization, scaling, and formatting
- Stand alone external trip relay
- Mathematical functions and operations on all channels
- Fieldbus interface RS-485 for simultaneous connection of up to 32 modules at one line
- Galvanic Isolation of I/O signals, power supply and interface
- PC software for easy configuration of the modules

Analog Inputs

Number of inputs	4
Accuracy	0.01 %
Types of measurement	
Voltage	single ended, differential
Ranges	±10 V; ±5 V; ±2.5 V; ±1.25 V; ±625 mV; ±312.5 mV; ±100 mV; ±25 mV; ±6.25 mV
Current	
Ranges	25 mA; 12.5 mA; 6.25 mA; 3.125 mA; 1 mA; 250 µA, 62.5 µA
Resistance	2, 3, and 4 wire
Ranges	20 kΩ; 10 kΩ; 5 kΩ, 2.5 kΩ; 1.25 kΩ; 625 Ω; 312.5 Ω; 200 Ω
Output current	0.5 mA DC
Bridge	4 and 6 wire
Ranges	1 V/V; 500 mV/V; 250 mV/V; 125 mV/V; 62.5 mV/V; 31.25 mV/V; 10 mV/V; 2.5 mV/V; 625 µV/V
Force output	voltage
Voltage	+5 VDC
Current	50 mA
accuracy	2 %
Linearity deviation	0.01 %
Temperature influence	0.025 % / 10 K

Analog/Digital-Conversion

Resolution	16 bit 0.003 %
Sample times	
for 1 analog input	min. 5 ms
for 2 analog inputs	min. 50 ms
for 3 analog inputs	min. 75 ms
for 4 analog inputs	min. 100 ms

Digital Inputs/Outputs

Number of I/O	4
Input	status, counter (up, up/down, quadrature), frequency measurement
Input voltage	max. 30 VDC
Input current	max. 1.5 mA
Switching threshold	> 3.5 V (high)
Switching threshold	< 1.0 V (low)
Input frequency	max. 25 kHz (I/O 1 and I/O 2)
Up/down and quadrature	max. 2 kHz
Input frequency	max. 2 kHz (I/O 3 and I/O 4) status only
Output	process or host controlled, pulse width modulated PWM only I/O 1 and I/O 2
Type of output	open-collector
Output current	max. 100 mA
Output voltage	max. 30 VDC
Output frequency	max. 100 Hz

Communication Interface

Standard	RS 485 (2 wire), RS 232
Data format	selectable 8E1, 8N1
Protocols	ASCII, Profibus Level 2 or Profibus-DP or Modbus-RTU, max 187.5 kBaud
Baud rates	max. 32
Connectable devices	500 V
Galvanic Isolation	

Power Supply

Supply voltage	10 up to 30 VDC
Power consumption	approx. 1.5 W
Protection	overvoltage and overload protection reversible semiconductor

Mechanical

Material	Aluminium and ABS
Dimensions (W x H x D)	69 x 90 x 83 mm (2.72 x 3.54 x 3.27 in)
Weight	259 g (0.57 lb)
Protective system	IP20
Mounting	DIN EN-Rail mounting
Connection	plug-in screw terminals max. 1.5 mm ²

Environmental

Operating temperature	-20 °C to +60 °C
Storing temperature	-30 °C to +85 °C
Humidity	5 % to 95 % at 50 °C non condensing

Electromagnetic Compatibility (EMC)

Electro static discharge (ESD)	level 2 acc. IEC 801-2: 4 kV
Radiated electromagnetic fields	level 3 acc. IEC 801-3: 10 V/m
Electrical fast transients	level 3 acc. IEC 801-3: 2 kV / 1 kV
Radiated RFI/EMI	level B acc. VDE 0871-1/CISPR 11

Warm Up Time

All declarations are valid after a warm up time of 45 minutes.

Valid from October 2006. Specification subject to change without notice.
DB_ISM111_E_11.doc