



I/O MODULES AND CONVERTERS

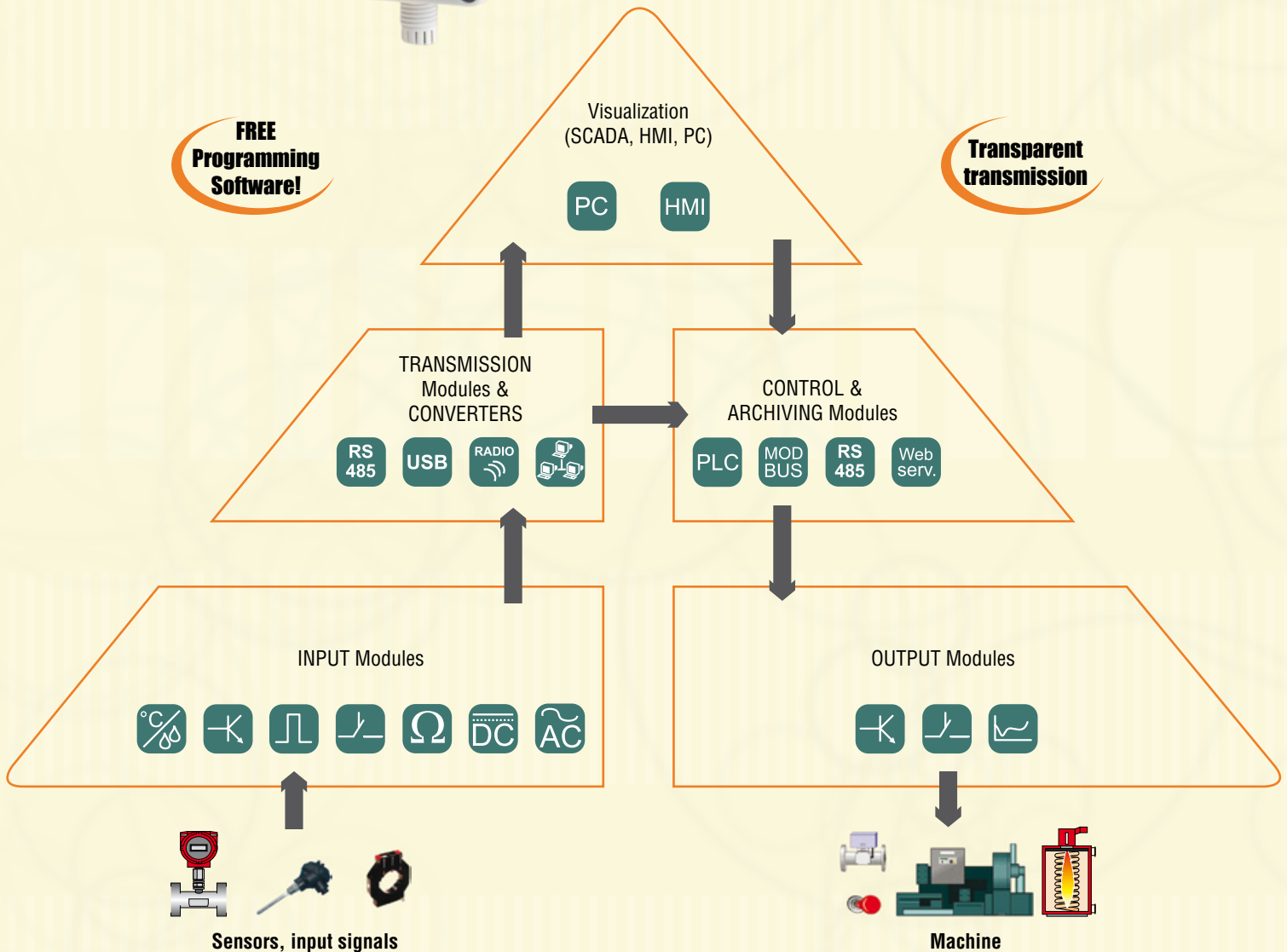


Input/Output, Control, Data-logging, Conversion



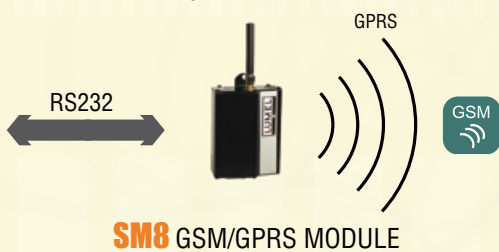
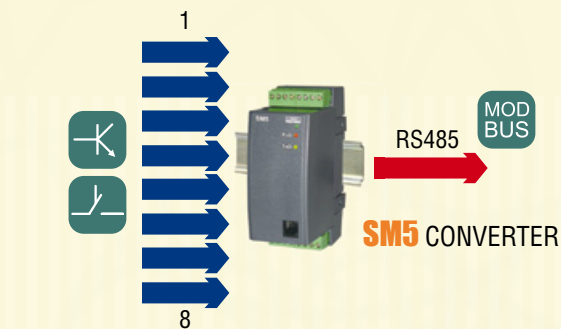
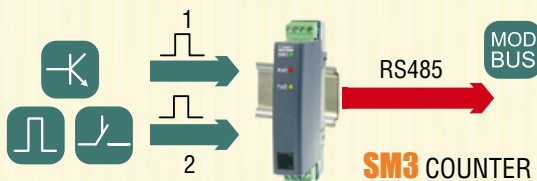
Modules and converters can be used in many types of applications as:

- input modules (analog and logic),
- radio and serial transmitters,
- protocol converters,
- ethernet bridges,
- PLC units,
- relay or OC output devices.

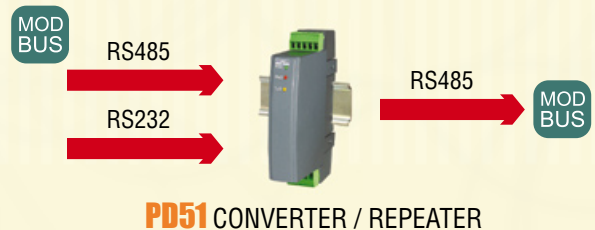


Input Modules

LPConfig



Transmission Modules and Converters



Description of devices

- SM1** – 2-channel input module of ANALOG signals: 0-400 Ohm, PT100, 0/4-20mA, 0-10V, converting into RS485 Modbus, DIN rail mounting, easy programming with free LPConfig software
- SM2** – 4-channel input module of ANALOG signals: 0-400 Ohm, PT100, 0/4-20mA, 0-10V, converting into RS485 Modbus, DIN rail mounting, easy programming with free LPConfig software
- SM3** – 2-channel input module of PULSE or LOGIC state signals, counting and weight calculation functions, DIN rail mounting, easy programming with free LPConfig software
- SM5** – 8-channel input module of LOGIC state signals, converting into RS485 Modbus, DIN rail mounting, easy programming with free LPConfig software
- SM7** – Radio transmission module with RS485 connection and radio freq: 433/868 MHz, 0,01...10mW (-20...10dBm), 10 channels, transmission in straight line distance up to 200m, DIN rail mounting, easy programming with SM7 Setup software
- MR03** – Radio transmission module with RS485 connection and radio freq: 869,4 – 869,65 MHz, 40...500mW (16...27dBm), 5 channels, transmission in straight line distance up to 1500m, IP54 housing, easy programming with MR03 Setup software
- PD8** – Ethernet converter with functions like: RealPort network service, serial bridge with UDP, Socket TCP service, DIN rail mounting, easy programming with PD8 Setup software
- PD10** – RS485/USB interface converter with galvanic isolation
- PD12** – RS232/USB interface converter with galvanic isolation
- PD51** – RS232/RS485 converter / repeater

- d.c. voltage and current input

- pulse counting input

- resistance input

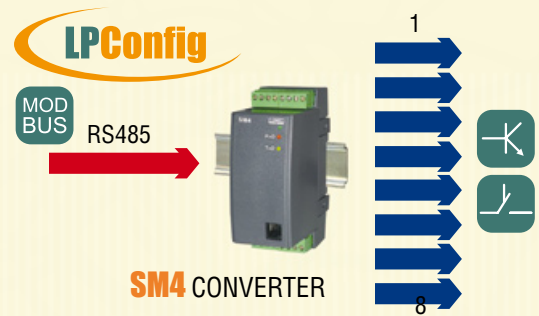
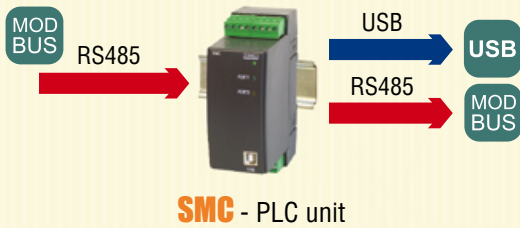
- thermoresistance input

- NO (normally-open) relay output

- voltage-free transistor output (OC)

Control Modules and HMI Panels

Output and Archiving Modules

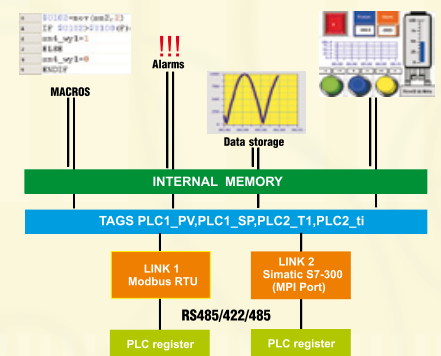


Description of devices

- SMC** – micro PLC MODULE, with RS485, USB interface, destined for remote readout and control in RS485 networks based on communication with diverse input and output modules of integration systems
- MT057 TST** – 5,7” LCD Touch screen HMI, 2x serial port: RS232/485/422, IP65, easy programming with free PanelMaster software
- MT058 TNT** – 5,7” LCD Touch screen HMI, 2x serial port: RS232/485/422, IP65, easy programming with free PanelMaster software, with Ethernet: Modbus over TCP/IP, UDP
- SM4** – 4 or 8-channel output module of OC(8x) / RELAY(4x) with input MODBUS RS485, DIN rail mounting, easy programming with free LPConfig software
- SM6** – WWW SERVER, DATA LOGGER, with RS485 and Ethernet interface, memory: 128MB, DIN rail mounting, easy programming and data managing with free SM6 config software and webpage,
- PD22** – DATA LOGGER module, with RS485/232 and USB interface, memory: 390 000 data records, 44 400 event records, DIN rail mounting, easy programming and data managing with free PD22Wiz software,

PANEL MASTER SOFTWARE

- Graphical visualization of processes (available rich library of graphical elements), possible import of own graphics in gif, bmp, jpg formats.
- Communication with devices of over 100 manufacturers (among others: Modbus ASCII/RTU Master and Slave, Siemens: S5, S7-200, S7-300, Profibus DP, GE: 90 Series CCM, 90 Series SNP, Allen Bradley: Micrologix 1000/1500, DH-485, SLC 5/03, 5/04, Saia, Omron and others).
- Mode of transparent communication (access from SCADA application to registers of PLC controllers through the operator's panel).
- Multilanguage applications (up to 10 languages, Unicode coding).
- Data storage in internal memory.
- Alarm storage.
- Event log.
- Review of archived data on trends and tables.
- Recipes.
- Macros (mathematical functions on process variables).
- Simulation of off-line applications (without panel and controllers) and on-line (with controllers connected to PC computer ports).



MOD BUS - RS485 Modbus interface

- analog input/output (0...10V, 0/4...20mA)

RADIO - non-licensed radio band

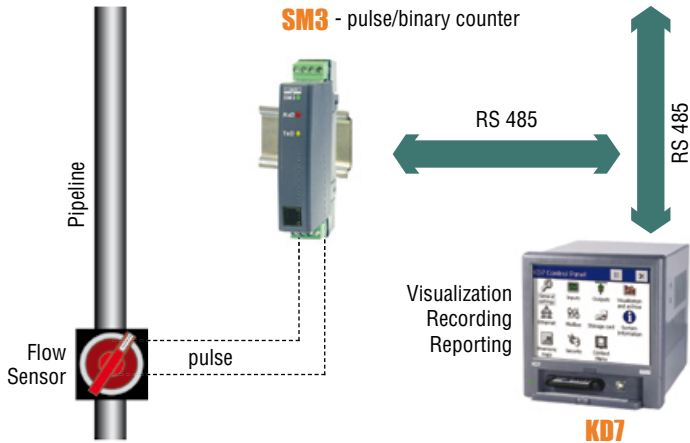
USB - USB interface

- Ethernet

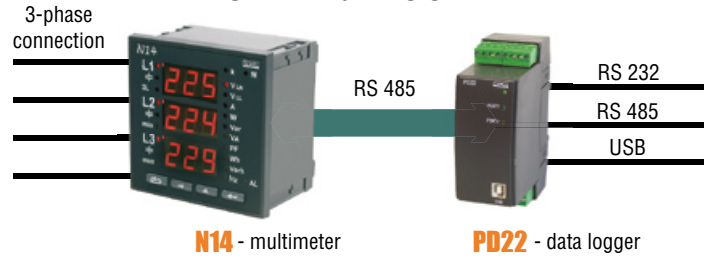
AC - a.c. input for 1-phase network parameters measurement

APPLICATIONS

Measurement and visualization flow in a pipeline



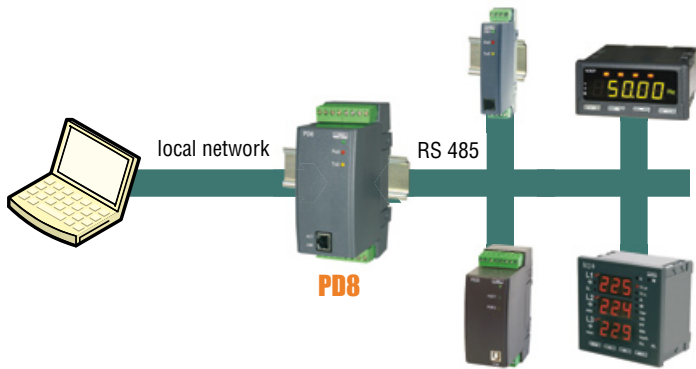
Archiving of 3-phase network parameters from N14 multimeter



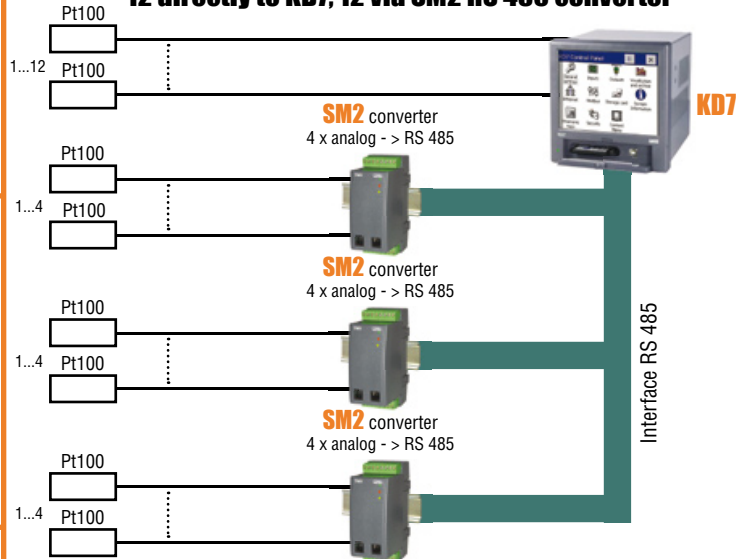
Radio transmission with MR03 radio modules. Modules can realize transmission in a 1.5 km distance in open area. The transmitted data are archived in the KD7 recorder



Communication with RS 485 Modbus Slave devices with PD8 in TCP Socket mode



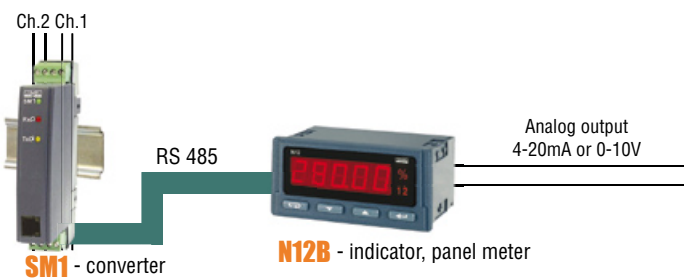
System measuring temperature in 24 points: 12 directly to KD7, 12 via SM2 RS 485 converter



Conversion of RS485 into RS232 interface with PD51. The converter PD51 can work also as a repeater in RS485 network



SM1 measures two channels and calculates the average value $(\text{ch1} + \text{ch2}) / 2$. N12B downloads the average value from SM1 and indicates this on the display. Programmed N12B output corresponds to average value from SM1



Radio transmission with SM7 radio modules of measured humidity and temperature. Modules can realize transmission in a 300 m distance in open area



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INPUT AND OUTPUT MODULES

TABLE 1. SM1 ORDERING CODES:

SM1 -	XX	X	X
Input:			
2 voltage input: 0..10V	00		
2 current input: 0/4..20mA	01		
1 voltage + 1 current input: 0..10 V + 0/4..20 mA	02		
2 resistance 0..400 Ω or Pt100 inputs	03		
Supply:			
85..253 V a.c./d.c.	1		
20..50 V a.c./d.c.	2		
Acceptance tests:			
without extra requirements		8	
with an extra quality inspection certificate		7	
acc. to customer's request*		X	

TABLE 2. SM2 ORDERING CODES:

SM2 -	XX	X	X
Input:			
4 voltage input: 0..10V	00		
4 current input: 0/4..20mA	01		
2 voltage + 2 current input: 0..10 V + 0/4..20 mA	02		
4 resistance 0..400 Ω or Pt100 inputs	03		
Supply:			
85..253 V a.c./d.c.	1		
20..50 V a.c./d.c.	2		
Acceptance tests:			
without extra requirements		8	
with an extra quality inspection certificate		7	
acc. to customer's request*		X	

TABLE 4. SM3 ORDERING CODES:

SM3 -	X	XX	X
Supply:			
85..253 V a.c./d.c.	1		
20..50 V a.c./d.c.	2		
Version:			
standard		00	
custom-made*		XX	
Acceptance tests:			
without extra requirements			8
with an extra quality inspection certificate			7
acc. to customer's request*			X

TABLE 3. SM4 ORDERING CODES:

SM4 -	X	X	XX	X
Supply:				
85..253 V a.c./d.c.	1			
20..50 V a.c./d.c.	2			
Outputs:				
8 OC type outputs		1		
4 relay outputs		2		
Version:				
standard			00	
custom-made*			XX	
Acceptance tests:				
without extra requirements				8
with an extra quality inspection certificate				7
acc. to customer's request*				X

TABLE 5. SM5 ORDERING CODES:

SM5 -	X	XX	X
Supply:			
85..253 V a.c./d.c.	1		
20..50 V a.c./d.c.	2		
Version:			
standard		00	
custom-made*		XX	
Acceptance tests:			
without extra requirements			8
with an extra quality inspection certificate			7
acc. to customer's request*			X

* - After agreeing with manufacturer

COMMUNICATION MODULES

TABLE 6. SM7 ORDERING CODES:

SM7 -	X	X	X
Supply:			
85..253 V a.c./d.c.	1		
20..50 V a.c./d.c.	2		
7..35 V d.c.	3		
Radio carrier frequency:			
433 MHz	1		
868 MHz	2		
Acceptance tests:			
without extra requirements		8	
with an extra quality inspection certificate		7	
acc. to customer's request*		X	

TABLE 7. MR03 ORDERING CODES:

MR03 -	XX	X
Version:		
standard	00	
custom-made*	XX	
Acceptance tests:		
without extra requirements		8
with an extra quality inspection certificate		7
acc. to customer's request*		X

TABLE 8. SM8 ORDERING CODES:

SM8 -	XX	X
Version:		
standard	00	
custom-made*	XX	
Acceptance tests:		
without extra requirements		8
with an extra quality inspection certificate		7
acc. to customer's request*		X

* - After agreeing with manufacturer

CONVERTERS

TABLE 9. PD8 ORDERING CODES:

PD8 -	X	XX	X
Supply:			
85..253 V a.c./d.c.	1		
20..50 V a.c./d.c.	2		
Version:			
standard		00	
custom-made*		XX	
Acceptance tests:			
without extra requirements			8
with an extra quality inspection certificate			7
acc. to customer's request*			X

TABLE 10. PD10 ORDERING CODES:

PD10 - 1 -	XX	X
Version:		
standard	00	
custom-made*	XX	
Acceptance tests:		
without extra requirements		8
with an extra quality inspection certificate		7
acc. to customer's request*		X

TABLE 11. PD12 ORDERING CODES:

PD12 -	X	XX	X
Galvanic isolation:			
with isolation	1		
without isolation	2		
Version:			
standard		00	
custom-made*		XX	
Acceptance tests:			
without extra requirements			8
with an extra quality inspection certificate			7
acc. to customer's request*			X

TABLE 12. PD51 ORDERING CODES:

PD51 -	XX	XX	X
Supply voltage:			
- on-rail execution: 85 .. 253 V a.c./d.c.	A1		
20 .. 40 V a.c./d.c.	A2		
7 .. 35 V d.c.	A3		
- portable execution : 9 V d.c.	B1		
Version:			
standard		00	
custom-made*		XX	
Acceptance tests:			
without extra requirements			0
with an extra quality inspection certificate			1
acc. to customer's request*			X

* - After agreeing with manufacturer

CONTROL MODULES AND HMI PANELS

TABLE 12. SMC ORDERING CODES:

	SMC -	X	XX	X
Supply:				
85..253 V a.c./d.c.		1		
20..50 V a.c./d.c.		2		
Version:				
standard			00	
custom-made*			XX	
Acceptance tests:				
without extra requirements				8
with an extra quality inspection certificate				7
acc. to customer's request*				X

TABLE 13. MT ORDERING CODES:

	MT -	XXXXXX	XX	X
Model:				
3,5" - mini version		035TST		
5,7" - basic version		057TST		
5,7" - with Ethernet		058TNT		
Version:				
standard			00	
custom-made*			XX	
Acceptance tests:				
without extra requirements				8
with an extra quality inspection certificate				7
acc. to customer's request*				X

* - After agreeing with manufacturer

WWW SERVER AND ARCHIVING MODULE

TABLE 14. SM6 ORDERING CODES:

	SM6 -	X	X	XX	X
Capacity of flash disk:					
128 MB		4			
Interface on port 2:					
RS-485		1			
Version:					
standard				00	
custom-made*				XX	
Acceptance tests:					
without extra requirements					8
with an extra quality inspection certificate					7
acc. to customer's request*					X

TABLE 16. PD22 ORDERING CODES:

	PD22 -	X	XX	X
Supply:				
85..253 V a.c./d.c.		1		
20..50 V a.c./d.c.		2		
Version:				
standard			00	
custom-made*			XX	
Acceptance tests:				
without extra requirements				8
with an extra quality inspection certificate				7
acc. to customer's request*				X

* - After agreeing with manufacturer

POWER PACK MODULE

TABLE 15. SM9 ORDERING CODES:

	SM9 -	XX	X
Version:			
standard		00	
custom-made*		XX	
Acceptance tests:			
without extra requirements			8
with an extra quality inspection certificate			7
acc. to customer's request*			X

* - After agreeing with manufacturer

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SMC CONTROLLER SOFTWARE

CPDev Module:

- Programming of algorithms in ST language (structured Text) in compliance with IEC 61131-3 standard.
- Available logic, comparative, arithmetical operators and mathematical functions.
- Constructions: IF...THEN, CASE...OF, FOR...DO, WHILE...DO, REPEAT...UNTIL.
- Access to the RTC clock of the SMC controller.
- Available libraries of IEC-61131 standard functional modules and Basic Blocs, and also specialized Complex Blocs.
- Possible creation of own functional libraries.

CPSim Module:

- Simulation of off-line algorithms (without a controller) and on-line (with a controller).
- Read-in of process data for simulation from a text file.
- Write of simulation results in the text file.

CPCon Module:

- Configuration of communication parameters of the controller and modules I/O of SM series.
- Configuration of communication tasks with modules I/O (by means of the creator or manually).
- Transmission of the project to the controller.

