

Process Controller C8

Technological process control, telemetry and data collection



Characteristic properties

- 120 analog recording channels, 240 binary recording channels
- 120 user-adjustable operating parameters
- Measurement and recording of data in the interval from 1 min to 24 hours, data memory for 1 million values
- Connection of various types of sensors and probes - current and pulse inputs, 4 RS485 buses (MODBUS RTU, FINET, ...)
- Controlled power supply of connected sensors in the range of 6V to 15V, 2 separate branches
- Encrypted data transmissions to the server via internal GSM / GPRS or WiFi module
- Backup power supply by internal automatically rechargeable battery
- The modular concept allows easy expansion of the number of inputs and outputs, a common data bus in a DIN rail
- Self-diagnostics connected to sending SMS alerts and data server
- Complete parameterization and FW upgrade remotely via server or locally (USB)

Basic description

Modular control unit with a large number of measuring analog and binary inputs and outputs designed to control technological processes in the water industry. Four RS485 serial communication lines allow the connection of many different sensors under the MODBUS RTU protocols. The software supports flow measurement using pulses as well as calculation from consumption equations, control of pumps and blowers, including outages, integrated PID controllers and data-hosting on the server, including remote parameterization.

Examples of use

- Management and monitoring of water supply facilities
- Management of technological processes
- Acquisition and collection of data
- Remote meter readings
- Wireless data concentrators



BASIC FUNCTIONS AND FEATURES

Analogue recording channels

Up to 120 analog channels for recording measured values. Each channel can be set with its specific name, number of decimal places for archiving, measurement method, limit values for alarms and many other parameters. The user has preset measuring units for level, flow, volume, temperature, RH, pH, redox, diss. oxygen, conductivity, pressure, rainfall, current, voltage, pulses, radiation and many other physical quantities.

The archiving interval is adjustable from 1 sec to 24 hours separately for each recording channel. The C8 supports the transition to more frequent measurements and the recording of selected quantities after exceeding a certain limit value (limit alarm) and also allows to set a delayed measurement for sensors that require a longer rise time from power on.

Binary recording channels

Process Controller C8 contains up to 240 binary channels. Each channel is configurable as a binary input or binary output. The input binary channel records the moment of switching on and off of the input with a time resolution of 1 s (runs and faults, security vol., ...). Output binary channels allow to command relays based on logic functions with other binary channels (AND, NOR, XOR, ...).

Text channel - diary of events

Sending data to the server, texts and phone numbers of received and sent SMS, faults of connected sensors, power failures, ...

Unit control and above-standard functions

- Computational functions over measuring channels (sum, moving sum or average, difference, trend, correction by 2nd order polynomial) with output to a separate channel and to SMS.
- Control of the sampling device in 4 operating modes
- Limit and gradient alarms for each analog channel.
- 64 recording channels with support for calculation and archiving of daily, monthly, annual and total flow volumes.
- Calculation of instantaneous flow from pulses (OPTO sensors).

Outputs

- Limit, time and logic control of own and external relays
- Four adjustable PID controllers
- Interlock and shift function for controlling two or three pumps.
- Parameters for control of own and external 4-20 mA output loops.

GPRS

- Automatic sending of data to the server at regular intervals.
- Switch to more frequent transmissions after alarm condition.
- Sending data directly to email or FTP server (daily reports)
- Universal command (XML, JSON, etc.).
- Symmetric cipher for transmitted files (commands and data)
- On-line transfers of measured data to the server
- Remote C8 parameterization and FW upgrade via server. Backup of parameter files on the server.

System of warning, informative and control SMS:

- Telephone directory for 48 recipients, grouping into groups.
- 48 adjustable warning SMS messages (any text, automatic insertion of the current value, various trigger conditions including their duration, hysteresis, ...).
- Informative SMS compiled on the basis of the command line or query SMS (actual values, max, min, balance, ...).
- Command SMS for control of outputs (binary and analog), setting of selected coefficients and parameters.

Data control and visualization

The Controller C8 process does not contain a display or keyboard, so all user settings and changes must be made via the MOST4 web application, either remotely from the server via the built-in communication module or locally via the USB interface. Visualization of measured data can be realized using an external display module connected via RS485 interface under Modbus protocol:

- PANEL HMI 10: Touch screen with a diagonal of 10" with a fixed data visualization structure, complete device parameterization.
- HMI 24 PANEL: 24" touch screen with configurable graphics - typically technological flow diagram.

TECHNICAL PARAMETERS

C8-BIC

C8-EB35

C8-EB60

C8-EB08

To the C8-BIC base unit up to 20 external can be connected input/output or communication modules



Recording channels:	120 analog, 240 binary	-	-	-
Data memory:	6 MB, up to 1 million measured values	-	-	-
Binary inputs - optocoupler:	9 (+2 REED, OPTO)	9	18	0
Binary outputs (RELAY 230V/2A):	9 (FET 10-30VDC /0.5 A)	5	0	8
Analog inputs 4(0)-20 mA:	6	0	0	0
RS485 bus:	4	0	0	0
GSM / GPRS internal module:	dual, GPRS Class 12	-	-	-
WiFi internal module:	data transfer to the server (optional accessory)			
Supply voltage:	10 to 28 V DC (typ 24 V DC)		5 V DC (internal bus)	
Operating and storage temperature:	-20 °C to 60 °C		-20 °C to 60 °C	
Dimensions (h x w x d):	114.5 x 90 x 99 mm		114.5 x 22.5 x 99 mm	
Weight:	550 g	150 g	140 g	180 g
Protection:	IP20		IP20	