GOSSEN METRAWATT

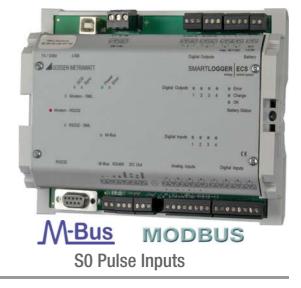# SMART**LOGGER** | ECS
Multifunctional Data Logger with Integrated Modem

- Acquisition of energy and consumption data, temperatures, switching statuses and process quantities
- Error message management, continuous comparison of characteristic values and indication of errors via switching output, e-mail or SMS
- 4 digital inputs, active or passive
- 4 analog inputs: 0 to 20 mA, 0 to 10 V, 5 K NTC
- 2 relay switching outputs, max. 30 V= / 2 A or 125 V~ / 0.5 A
- 2 open collector switching outputs, max. 30 V= / 50 mA
- M-Bus interface for 10 users
- RS 485 / Modbus interface for external devices
- RS 232 interface for configuration and tunnel function
- UPS function with optional, external 12 V= lead-gel battery

M-Bus   MODBUS

S0 Pulse Inputs

Applications

The SMARTLOGGER expands the Energy Control System (ECS), which is widespread in industry and building technology, for use in applications with just a few measuring points. It unites energy and consumption data logging for a wide variety of media with error messaging and monitoring functions. Faults can be reported either directly by SMS or e-mail, or via intrusion to a fault messaging unit. Valuable resources can be used more efficiently, energy costs can be lastingly reduced and opportunities provided by modern energy management can be fully exploited.

Versatile Data Collector

The SMARTLOGGER has 4 digital inputs for meters with pulse output and can additionally manage 10 energy meters with M-Bus interface. Supplementary measured values can be acquired via 4 analog inputs, which are configurable as voltage, current or temperature inputs.

This means that nearly all

- Meter readings (electrical power, gas, water, heat etc.)
- Temperatures (outside, inside, inlet and return temperature, etc.)
- Statuses (burner and pump on-times etc.)
- Analog signals (signal converters, measuring transducers etc.)
- Data from bus compatible measuring instruments and energy meters

can be acquired.

Bus compatible measuring instruments and energy meters can be connected via Modbus or M-Bus for users with integrated level converter.

Convenient Programming

The various parameters and functions of the SMARTLOGGER are specified with the SMARTLOGGERS ECS manager.

Universal Communication

Depending on which variant is ordered, the SMARTLOGGER is equipped with Ethernet TCP/IP, or a GSM, ISDN or analog modem, by means of which it is integrated into existing infrastructures. In the transparent mode, a device from another manufacturer can be controlled via the RS 232 interface.

Uninterruptible Power Supply

The SMARTLOGGER is equipped with an integrated charging circuit with status display for an optional, external 12 V lead-gel battery. The device detects power failures and power recoveries, records both events to event memory and, depending upon wiring, keeps all function intact for up to 24 hours.

SMART**LOGGER** | ECS
Multifunctional Data Logger with Integrated Modem

Technical Data

System Data

Memory capacity	2 MB flash ring buffer
Storage rules	Cyclical (1, 5, 15, 60 minutes)
Calculations	Mean value generation, timer programs, limit value monitoring
Time	Battery-backed real-time clock
System monitoring	Watchdog timer

Housing material	Plastic
Dimensions	180 x 130 x 50 mm
Mounting	Top-hat rail mounting
Protection	IP 20
Weight	530 g
Mains power	230 V_{AC}, 50 Hz or 110 V_{AC}, 60 Hz Power consumption: between 3 and 15 W depending on wiring
Auxiliary voltage	5 V_{DC}, 50 mA 17 V_{DC}, 50 mA
UPS	Integrated UPS via external 12 V_{DC} lead-gel battery, 1.2 or 2.3 Ah, internal battery charger, power failure buffering time in case of mains failure depends on battery size and wiring
Operating conditions	5 to 50° C, no condensation
Real-time clock battery	
Lithium cell	CR 2032 3 V, 230 mAh, for retaining date and time (tool-free replacement without loss of data)
Continuous operation	Replace once every 10 years
Unused / long periods of storage	Replace once every 10 years

Inputs

Analog Inputs

Quantity	4 (1 through 4)
Measuring range	0 to 10 V or 0 to 20 mA can be selected via internal jumper 5 K NTC
Internal resistance	Voltage measurement: 115 kOhm Current measurement: 130 Ohm
Accuracy	Better than ±0.02 V
Calibration	Internal 2-point calibration
Electrical isolation	Common ground, no electrical isolation, no connection to frame ground, SMARTLOGGER may be subjected to external voltage
Frequency	Max. 0.2 Hz
Protective circuit	Diodes for voltage peaks
Resolution	10 bit A-D converter
Function	Connection of measuring transducers such as pressure, humidity, and temperature sensors etc.

Temperature Measurement

Input quantity	5 K NTC
Measuring range	-25 to +105° C
Accuracy	Better than ±1° C (depending upon sensor's DIN class)
Calibration	n/a
Protective circuit	Diodes for voltage peaks
Resolution	10 bit A-D converter

Digital Inputs

Quantity	4 (1 through 4)
Operating mode	Active, passive, via external wiring
Contact load	10 mA with input voltage of 12 V= or 20 mA with 24 V=
Active signal	Min. 14 mA, max. 17 V=
Electrical isolation	No electrical isolation
Edge slope	Any
Debouncing	Digital filter, 10 ms
Pulse sequence	At least 20 ms / 20 ms (0/1)
Frequency	Max. 20 Hz
Detection method	Interrupt
Cable length	Max. 200 m
Storage of meter readings	According to measuring period or when switched off
Maximum meter reading	4294967296
Resolution	1
Optical pulse display	LED on the PCB
Function	Meter or status output, for example current, gas, water and heat meters, as well as door and window contacts

Outputs

Switching Output (relay)

Quantity	2
Switching element	Mechanical relay
Variant	Electrically isolated
Switching voltage	Max. 30 V = / 125 ~, no inductive loads
Switching current	Max. 2 A at 30 V-, 0.5 A at 125 V~
Function	Actuation by means of PC software program, timer, management

S0 Switching Output

Quantity	2
Switching element	Open collector
Variant	Electrically isolated (NC, floating)
Switching voltage	Max. 30 V_{DC}, no inductive loads
Switching current	Max. 50 mA
Function	Actuation by means of PC software program

Interfaces

RS 232 Interface

Baud rate	9600 baud, 8N1
Function	Tunnel function

RS 485 Interface (Modbus)

Protocol	Modbus RTU, 9600 baud, 8N1
Bus termination	Internal, 120 Ohm, can be disconnected with jumper
Connection	Not simultaneously with RS 232 (field 1)
Function	Control of fieldbus devices with RS 485 interface and Modbus protocol, e.g. A2000 power meter from GMC-I Messtechnik GmbH.

Ethernet Interface

Protocol	TCP/IP
Transmission speed	10 / 100 MBit
IP address	Static or dynamic via DHCP server, default setting: 192.168.0.173
Function	Read-out and parameters configuration of SMARTLOGGER.

GSM Interface

GSM	Connection to the GSM radio network. Contract with network service provider and enabled SIM card required. Good reception must be assured at the installation site. The SMS function is supported by SMARTLOGGER.

Software

SMARTLOGGER ECS manager

The SMARTLOGGER manager is included with the SMARTLOGGER, and provides all of following functions:

- Set up and manage devices, as well as associated connections
- Configuration of:
  - Fault message transmission, acknowledgment and escalation procedures
  - Digital inputs as pulse, fault message or timer input
  - Analog inputs and associated limit value monitoring
  - Mains failure monitoring
- Remote control of switching outputs
- Read-out of meter readings and load profile

Accessories

SMART**LOGGER** ECS MANAGER PC software
(freeware)

RS 232 interface cable (included)

Order Information

Type	Designation	Art. no.
SMARTLOGGER ECS	**SMARTLOGGER ECS manager,** 4 digital and 4 analog inputs, 2 relay and 2 open collector outputs, M-Bus master for 10 users, SMARTLOGGER manager on CD, RS 232 cable	
	Ethernet communication	U201A
	GSM communication	U201B

SMART**LOGGER** | ECS
Multifunctional Data Logger with Integrated Modem

GOSSEN METRAWATT