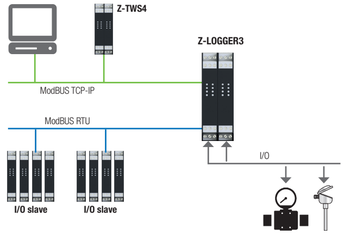
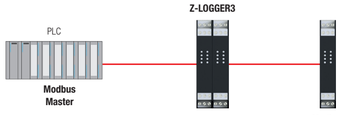
Application notes

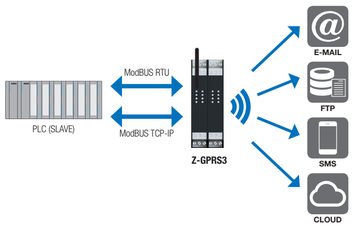
DATA ACQUISITION AND RE-TRANSMISSION



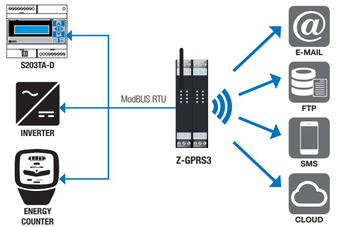
SIMULTANEOUS MASTER / SLAVE OPERATION



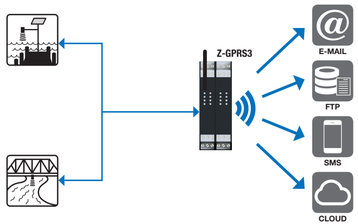
PLC REMOTE MANAGEMENT



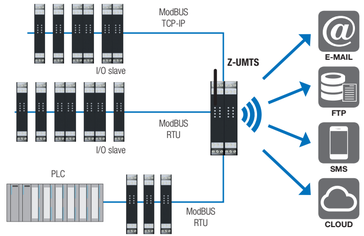
POWER MEASUREMENT CONTROL AND SUPERVISION



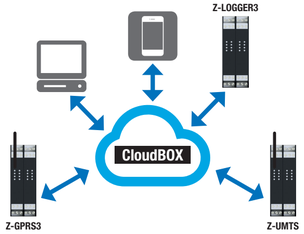
LEVEL MEASUREMENT CONTROL AND SUPERVISION



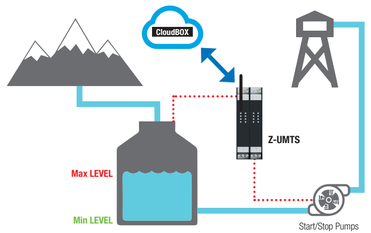
DATA LOGGING AND DATA RE-TRANSMISSION



IOT REMOTE MONITORING



PUMP CONTROL REMOTE MONITORING



Technical data

	Z-LOGGER3	Z-GPRS3	Z-UMTS
	Datalogger with built-in I/O and alarm management	**GSM/GPRS Datalogger with built-in I/O, telemetry functions, voice commands**	**3G+ Datalogger with built-in I/O, telemetry functions, voice commands**
GENERAL DATA			
Power Supply	11..40 Vdc/ 19..28 Vac	11..40 Vdc/ 19..28 Vac	19..40 Vdc/ 19..28 Vac
Power Transducers	Yes	Yes	Yes
Power Consumption	Max 3,5 W	Max 6,5 W	Max 6,5 W
Built-in UPS	Yes (approx battery life time 60')	Yes (approx battery life time 60')	Yes (approx battery life time 60')
On/Off button	Yes	Yes	Yes
SD extraction button	Yes	Yes	Yes
Voice alarms nd DTMF commands	No	Yes	Yes
Isolation	1.500 Vac	1.500 Vac	1.500 Vac
Protection degree	IP20	IP20	IP20
LED status indicators	I/O - Communication (Rx/Tx) IP connection - Power supply	I/O - Communication (Rx/Tx) GSM / IP connection - Power supply	I/O - Communication (Rx/Tx) GSM / IP connection - Power supply
Operating temperature	-10..+50°C	-10..+50°C	-10..+50°C
Weight	250 g	280 g	280 g
Dimension (wxhxd)	100 x 112 x 35 mm	100 x 112 x 35 mm	100 x 112 x 35 mm
Installation	DIN rail	DIN rail	DIN rail
I/O DATA			
Digital Input	Nr 4 PNP, NPN channels (counters @32bit up to 30 Hz)	Nr 4 PNP, NPN channels (counters @32bit up to 30 Hz)	Nr 4 PNP, NPN channels (counters @32bit up to 30 Hz)
Analog Input	Nr 2 channels, range 0..20 mA, 0..30 V, 16 bit	Nr 2 channels, range 0..20 mA, 0..30 V, 16 bit	Nr 2 channels, range 0..20 mA, 0..30 V, 16 bit
Digital Output	Nr 2 relay channels SPDT max 2 A 250 Vac	Nr 2 relay channels SPDT max 2 A 250 Vac	Nr 2 relay channels SPDT max 2 A 250 Vac
COMMUNICATION			
Ethernet Interface	10/100 Mbps (RJ45)	10/100 Mbps (RJ45)	10/100 Mbps (RJ45)
#1 Serial Interface	RS485 ModBUS, programmable baud rate, Master	RS485 ModBUS, programmable baud rate, Master	RS485 ModBUS, programmable baud rate, Master
#2 Serial Interface	RS485, programmable baud, on terminals	RS485, programmable baud, on terminals	RS485, programmable baud, on terminals
USB interface	Micro USB type B HOST (local prog.)	Micro USB type B HOST (local prog.)	Micro USB type B HOST (local prog.)
System protocols	Ftp, Smtp, http, ModBUS TCP, ModBUS RTU, HTTP	Ftp, Smtp, http, ModBUS TCP, ModBUS RTU, HTTP	Ftp, Smtp, http, ModBUS TCP, ModBUS RTU, HTTP
Modem	-	GSM/GPRS Quad Band 850/900/ 1800/1900 MHz	UMTS/HSPA+ 900/2100MHz (standard) UMTS/HSPA+ 850/1900/2100 MHz (option) GSM/GPRS quad-band 850/900/1800/1900 MHz (standard)
PROCESSING, MEMORY			
CPU	ARM 32 bit K64 120 MHz	ARM 32 bit K64 120 MHz	ARM 32 bit K64 120 MHz
RTOS Multitasking	Si	Si	Si
Flash (serial)	8 MB	8 MB	8 MB
Expandable Memory	Supplied Micro SD (up to 4 GB) expandable up to 32 GB (dedicated slot)	Supplied Micro SD (up to 4 GB) expandable up to 32 GB (dedicated slot)	Supplied Micro SD (up to 4 GB) expandable up to 32 GB (dedicated slot)
Datalogger	Measurements, alarms, events, logging on Micro SD card and Flas Memory	Measurements, alarms, events, logging on Micro SD card and Flas Memory	Measurements, alarms, events, logging on Micro SD card and Flas Memory
Synchronous Datalogger	Sampling time, min 60s	Sampling time, min 60s	Sampling time, min 60s
Asynchronous Datalogger	Up to 8 triggered-events, max input frequency 1 Hz	Up to 8 triggered-events, max input frequency 1 Hz	Up to 8 triggered-events, max input frequency 1 Hz
PROGRAMMING			
Platform	SEAL	SEAL	SEAL
Nr max function blocks (SEAL)	32	32	32
Nr max variables per device	100 + Built-in I/Os	100 + Built-in I/Os	100 + Built-in I/Os
Web Server	Yes, on Ethernet	Yes, on Ethernet, APN Private SIM, Public IP SIM	Yes, on Ethernet, APN Private SIM, Public IP SIM
Librerie e funzioni	Alarm management, commands, evens, ftp/email send, http Log and real-time ModBUS/Ethernet variables, I/O channels, thresholds, controls and bit operations management Firmware and remote configuration update via ftp and webserver ModBUS TCP-IP, ftp, webserver, http functions Math functions	GSM/GPRS data exchange, alarm management, commands, evens, ftp/email send, http Log and real-time ModBUS/Ethernet variables, I/O channels, thresholds, controls and bit operations management Firmware and remote configuration update via ftp and webserver ModBUS TCP-IP, ftp, webserver, http functions Math functions GSM alarm system, Ethernet communication alarm	GSM/GPRS/HSPA+ data exchange, alarm management, commands, evens, ftp/email send, http Log and real-time ModBUS/Ethernet variables, I/O channels, thresholds, controls and bit operations management Firmware and remote configuration update via ftp and webserver ModBUS TCP-IP, ftp, webserver, http functions Math functions GSM alarm system, Ethernet communication alarm Ethernet
STANDARD			
Norms	EN 61000-6-4, EN 64000-6-2, EN 61010-1	EN 301511, EN 301489-1/7, EN 60950	EN 301511, EN 301489-1/7, EN 60950

ORDER CODES			
Code	**Description**	**Code**	**Description**
Z-LOGGER3	Advanced datalogger, alarm module, web server with built-in IO	**MSD**	Micro SD memory card with adapter
Z-GPRS3	GSM/GPRS datalogger with built-in IOs, telecontrol functions, voice alarm	**Z-PC-DIN1-35**	DIN rail bus system 1 slot 35 mm
Z-UMTS	3G+ datalogger with built-in IOs, telecontrol functions, voice alarm	**Z-PC-DINAL1-35**	DIN rail bus system head terminal + 1 slot 35 mm
CLOUD BOX	Micro Scada / Industrial IoT Box	**CU-A-MICROB**	USB-A Micro USB-B 5 P plug cable
A-GSM	Dual band swing GSM external antenna, cable 3,2 m, SMA	**CU-A-MICRO-OTG**	Micro USB OTG to USB Type A (female) Adapter Cable
A-GSM-DIR-5M	GSM-DECT-UMTS directive compact antenna	**Z-SUPPLY**	Single-phase switching power supply 24V @ 1.5A
A-GSM-OMNIDIR	GSM-UMTS-WIFI Omnidirectional Antenna	**SOFTWARE / APP**	
A-GSM-QUAD	GSM quadband antenna	**SEAL**	SENECA Advanced language, programming graphic software
FD01	Pulsecap for Energy counter measurement, max freq. 10 Hz	**LOG FACTORY**	Visualization and log data tool for Z-GPRS3, Z-LOGGER3, Z-UMTS
EASY USB	USB - UART TTL converter	**SENECA SMS**	Android / iOS App for remote configuration

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17C0443 - DTLA_1704EN - April 2017

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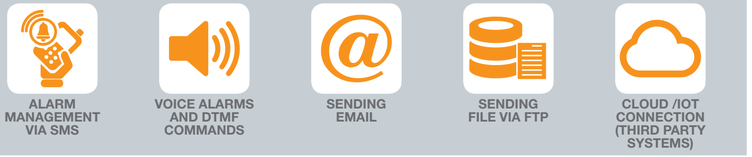
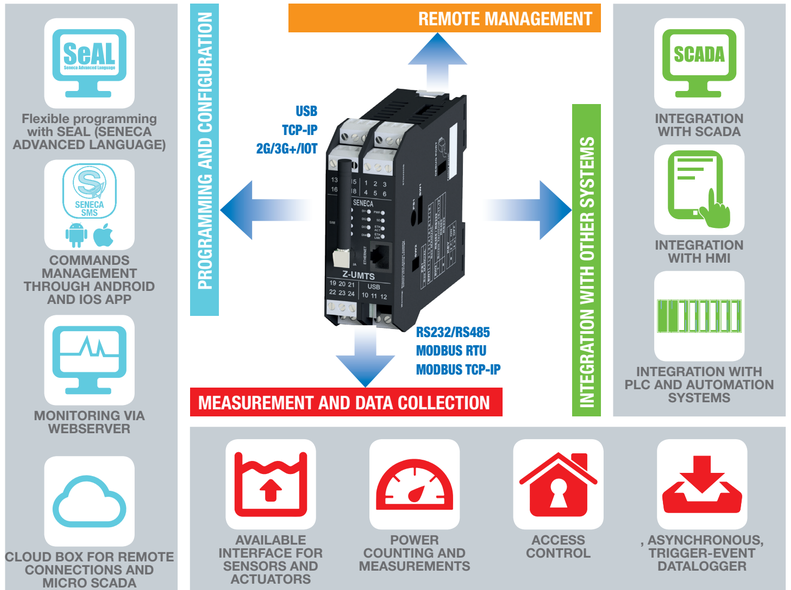
Overview

Z-GPRS3, **Z-LOGGER3** and **Z-UMTS** allow to meet increasing data collection's needs as well as real time analysis and IT systems integration that are in line with the new productivity and communication concepts of Industry 4.0 and Internet of Things. These dataloggers, designed to fulfill remote alarm functions, telemetry and data logging, are available with built-in I/O's, supervision and programming software, Ethernet interfaces, RS485 Modbus Rtu serial ports and 2G/3G+ modem.

DATA COLLECTION, ALARM MANAGEMENT, TELEMETRY AND REMOTE CONTROL



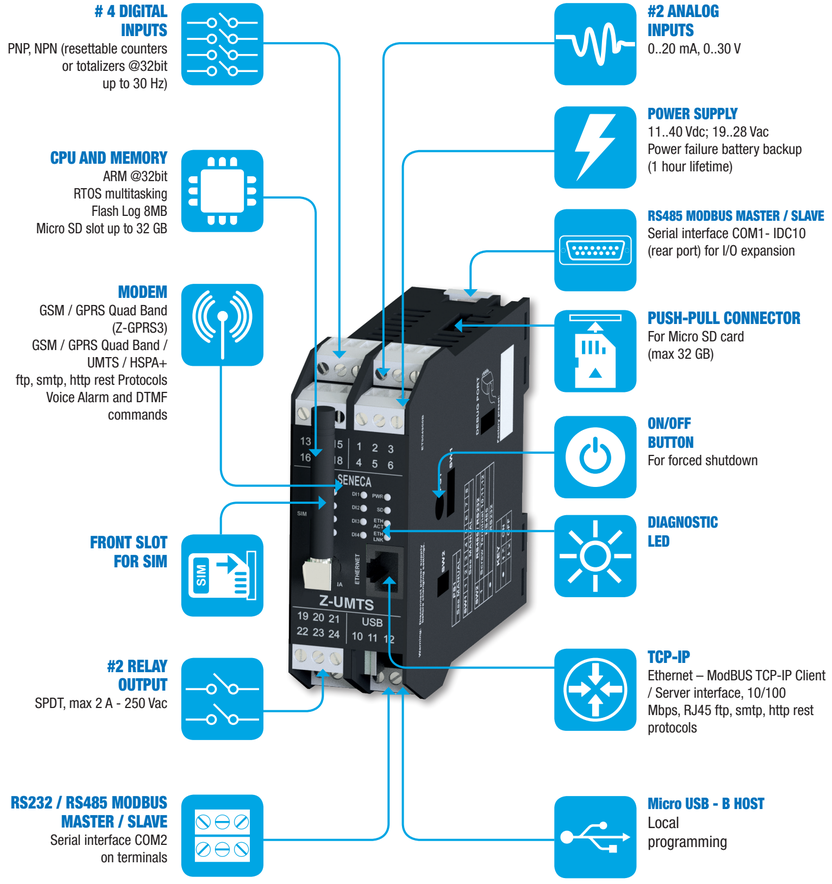


AVAILABLE MODELS

	Built-in modem	Commands / Voice alarms	Built-in I/Os	Communication ports	Communication protocols
Z-GPRS3	2G (GSM/GPRS)	x	4DI, 2AI, 2DO	1 ETH, 1 RS485, 1 RS485/ RS232, 1 MICRO USB	Ftp, Smtp, Smtps, http rest, https, ModBUS RTU, ModBUS TCP-IP, SMS
Z-LOGGER3	-	-	4DI, 2AI, 2DO	1 ETH, 1 RS485, 1 RS485/ RS232, 1 MICRO USB	Ftp, Smtp, http rest, ModBUS RTU, ModBUS TCP-IP
Z-UMTS	3G+ (GSM/GPRS/ UMTS/HSPA+)	x	4DI, 2AI, 2DO	1 ETH, 1 RS485, 1 RS485/ RS232, 1 MICRO USB	Ftp, Smtp, Smtps, http rest, https, ModBUS RTU, ModBUS TCP-IP, SMS

Hardware

Z-GPRS3, Z-LOGGER3 and **Z-UMTS** are high-performance units and are configured as a Master unit of Seneca Z-PC Line remote I/O system. They offer powerful security integration with third party systems thanks to Seneca's technological standards. These modules operate with 8 built-in I/O's, 2 serial interfaces with Modbus RTU protocol, 1 Micro USB port and 1 10/100 Mbps Ethernet port. The models with 2G / 3G + modem, support different types of SIM. These dataloggers are equipped with 8 MB of flash memory and Micro SD card slot up to 32 GB.



Programming & Connectivity

Seneca's advanced dataloggers ensures a flexible programming allowed by dedicated software designed by Seneca for the development of the control logics (SEAL). These modules are supplemented by an embedded Webserver, an App for SMS commands management, an import and data visualization Tool (Log Factory). Besides, the Micro SCADA 'Cloud BOX' allows real-time telemetry, RTU commands sending, log files analysis, events and alarms log archiving through customizable web pages by widget. Seneca offers powerful security integration with third-party Scada systems, Cloud, database and web platforms already available in plants.

	Functions	SEAL	Cloud BOX	Web Server	Log Factory	SENECA SMS
Basic settings	Date and time settings	✓	✓	✓		✓
	Communication network settings	✓				
	Memory device settings	✓				
	Remote firmware update	✓	✓	✓		
I/O and variables management	Modbus variables e I/O signals settings	✓				
	Counters and totalizers settings	✓				
	Export variables to SCADA	✓				
	Datalogger settings	✓				
	Archived log storage		✓		✓	
Alarms and Commands	Send Remote Commands		✓	✓*		✓
	DTMF settings	✓				
	SMS & Custom Commands	✓				✓
	Alarms/Events management	✓	✓			
	Diagnostic	✓	✓	✓		
Control logic	Logic functions	✓				
	Math functions	✓	✓			
Monitoring and visualization	Device status visualization	✓	✓	✓		
	Real-time variables visualization		✓	✓	✓	✓
	Real-time alarms/events visualization		✓	✓		✓
	Variables trend visualization		✓	✓	✓	
	Synoptic pages / widget		✓			
Supported hardware	PC Windows	✓	✓	✓	✓	
	Smartphone Android		✓	✓		✓
	Smartphone IoS		✓	✓		✓
	Smartphone Window Phone		✓	✓		

* Limited set of commands