




















SMART DATALOGGERS

**WITH REMOTE
MEASUREMENT,
TELEMETRY FUNCTIONS,
CLOUD SUPPORT**



OVERVIEW

Advanced data loggers MYALARM SEAL, Z-GPRS3, Z-LOGGER3, Z-UMTS, Z-LTE represent a solution that can respond to the increasing needs for data acquisition, real-time analysis and integration with IT systems in plant automation and monitoring, in compliance with the new productivity and communication models of Industry 4.0 and Internet of Things. Designed to perform remote alarm functions, remote metering and datalogging, these devices are available with built-in UPS, built-in I/O channels, programming and visualization software dedicated, serial and Ethernet communication support, MQTT protocol. They also perform 2G/3G+/4G modems with GNSS/GPS/GLONASS receiver. Optionally the data loggers can be combined with Cloud BOX, an IoT / Cloud solution proposed by SENECA that allows you to centralize data, manage remote connections, develop customizable multi-user supervision pages.

MODELS		MYALARM SEAL	Z-LOGGER3	Z-GPRS3	Z-UMTS	Z-LTE
						
Hardware	Power Supply	Vdc, built-in UPS	Vac/dc, built-in UPS	Vac/dc, built-in UPS	Vac/dc, built-in UPS	Vac/dc, built-in UPS
	Modem	 2G	-	2G	3G+	4G+
	Memory	 8MB Flash + Micro SD max 32 GB	8MB Flash + Micro SD max 32 GB	8MB Flash + Micro SD max 32 GB	8MB Flash + Micro SD max 32 GB	8MB Flash + Micro SD max 32 GB
	GPS / GNSS / GLONASS	 <input checked="" type="checkbox"/> (*)	-	-	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Built-in / Expandable I/O	 4DI, 2AI, (2DO option) Not expandable	4DI, 2AI, 2DO ModBUS expandable	4DI, 2AI, 2DO ModBUS expandable	4DI, 2AI, 2DO ModBUS expandable	4DI, 2AI, 2DO ModBUS expandable
	Communication Interfaces	 #1 Micro USB	#1 Ethernet 10/100 #1 RS232/RS485 #1 RS485 #1 Micro USB	#1 Ethernet 10/100 #1 RS232/RS485 #1 RS485 #1 Micro USB	#1 Ethernet 10/100 #1 RS232/RS485 #1 RS485 #1 Micro USB	#1 Ethernet 10/100 #1 RS232/RS485 #1 RS485 #1 Micro USB
	Built-in NTC sensor	 <input checked="" type="checkbox"/>	-	-	-	-
	SIM, public IP, APN, DynDNS	 <input checked="" type="checkbox"/> (**)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Alarm & Data Management	Synchronous / Asynchronous / Triggered datalogging	 <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Redundant log data	 <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Email / Alarm	 SMS / APP / Sending files via ftp / DTMF / vocal alarms	Sending files via ftp	SMS / APP / Sending files via ftp / DTMF / vocal alarms	SMS / APP / Sending files via ftp / DTMF / vocal alarms	SMS / APP / Sending files via ftp / DTMF / vocal alarms
	Vocal alarms / DTMF commands	 <input checked="" type="checkbox"/>	-	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Communication / IoT	Standard protocols: Ftp, Smtip, http, ModBUS RTU, ModBUS TCP	 <input checked="" type="checkbox"/> (***)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	IoT protocols (http post, MQTT), Cloud BOX support	 <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Transparent gateway Modbus RTU ↔ TCP/IP	 -	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

(*) Available in GPS versions - (**) DynDNS not included - (***) ModBUS RTU / TCP not included

PROGRAMMING

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 'Cloud BOX' HMI 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.



SEAL
SYSTEM CONFIGURATION AND LOGIC
MATHEMATICAL FUNCTIONS



CLOUD BOX
REMOTE CONNECTIONS MANAGEMENT, MICRO
SCADA, DATALOGGER



WEB SERVER
PARAMETERS MONITORING
& SETTING



LOG FACTORY
HISTORICAL FILES STORAGE
AND VISUALIZATION



SENECA SMS
ANDROID / IOS APP FOR SENDING
AND CUSTOMIZING SMS

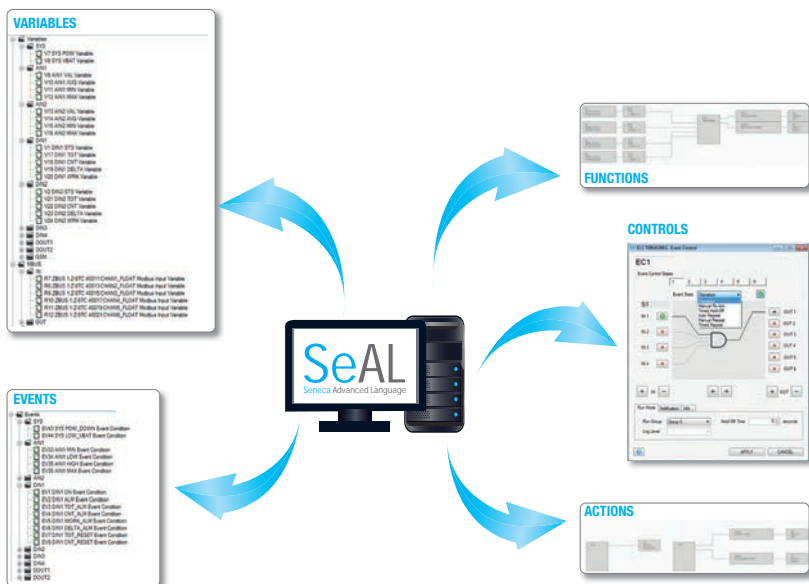


THIRD PARTY SYSTEMS
THIRD-PARTY SCADA SYSTEMS, CLOUD,
DATABASE AND WEB PLATFORMS



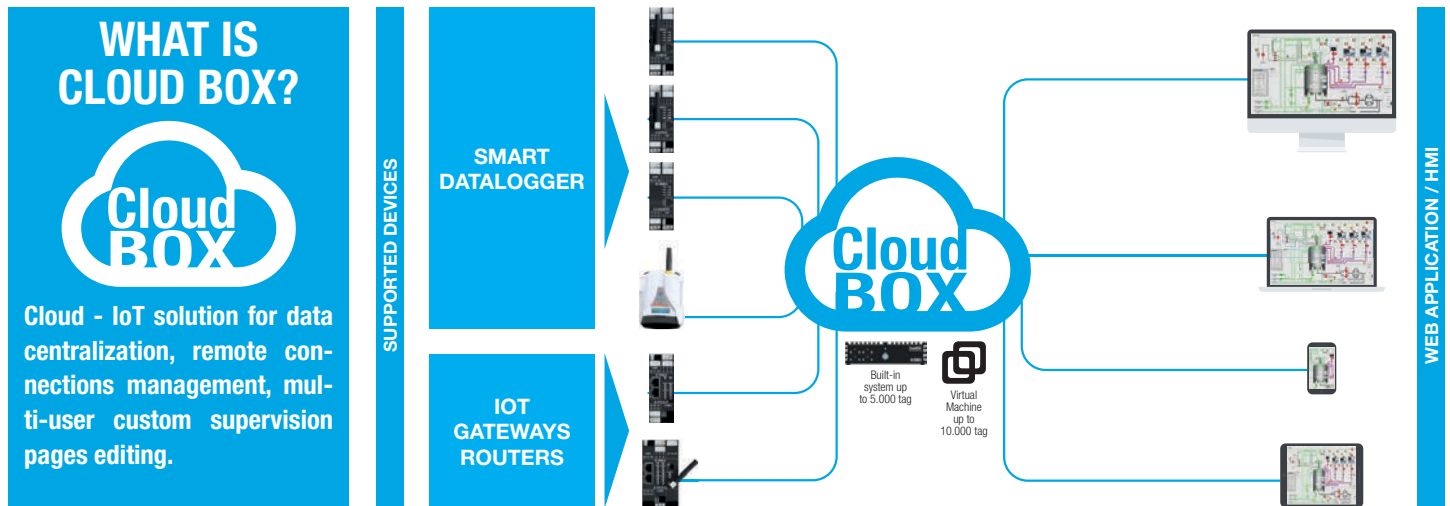
	MYALARM SEAL	Z-LOGGER3	Z-GPRS3	Z-UMTS
SEAL	X	X	X	X
CLOUD BOX (software appliance)	X	X	X	X
WEB SERVER	—	X	X	X
LOG FACTORY	X	X	X	X
SENECA SMS (mobile application)	X	—	X	X

SEAL, SENECA ADVANCED LANGUAGE



SEAL (SENECA Advanced Language) is a software designed for advanced management of automation and remote communication projects. SEAL allows you to intuitively manage variables, commands, automations, alarms, thresholds, reporting, network of communication with the possibility of configuration and remote update via SIM or Ethernet. Key features managed by SEAL include the control of alarms and events associated with the channels I/O, operations on bits, comparators, triggers and timings. SEAL offers the possibility to set function blocks, control blocks on the threshold and to manage in a global way the ModBUS variables of the devices to be programmed.


CLOUD BOX - INDUSTRIAL IOT BOX WITH MICRO SCADA FUNCTIONS



HIGHLIGHTS


HARDWARE

Compact fanless Server PC




VIRTUAL MACHINE

VMware (ESXi, Fusion, Workstation) builtin version with third-party servers




SUPERVISION

Editing Web pages with built-in dashboards, synoptics and widgets for field device supervision




TAG MANAGEMENT

Threshold management of up to 10,000 tags (virtual machine) or 5,000 tags (physical server)




DATA STORAGE

Centralized data storage and alarms from connected devices time; max data retention up to 10 years; min sampling time 1'




HISTORICAL DATA/ ALARMS

Visualization of historical data series, events, alarms on web pages




SENDING COMMANDS

Sending commands to connected devices bypassing any SIM blocks and firewall (compatibility with any other SIM data/M2M)






EXPORT AND DATA RECOVERY

Backup, automatic data recovery system and export in csv format



HMI / SCADA FUNCTIONS



Cloud BOX provides several widgets (input status, chart, bars etc), i.e. element that represent the status of connected devices. From these widgets are achievable responsive web pages (PC, tablet, smartphone) dashboard type (eg. historical data, commands, events management, trend) or supervision interface.



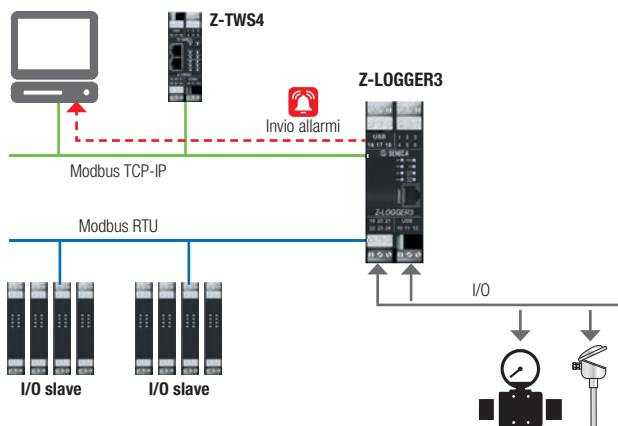
TECHNICAL DATA

Operating temperature	0..40°C
Dimension (lxhxp)	185x48x165 mm
Conformity	CE, FCC, RoHS, ErP Ready
Enclosure	Compact / fanless
Mounting	Wall mount or DIN rail
Processor	Intel Celeron J1900 2.0 GHz Quad-Core
SSD	64GB mSATA
LAN controller	Intel 211 AT Gigabit LAN
Interfaces	#4 USB ports, #2 RJ45 ports
Monitoring tools	Dashboards, synoptics, widgets
Real-time visualization	Yes
Log, alarms, events	Yes
Sampling time	Min 1'
Data export	.csv
Data storage time	Max 10 years
Global tags	Max 5.000 (10.000 in Virtual Machine version)
Protocols	http, https, Ftp

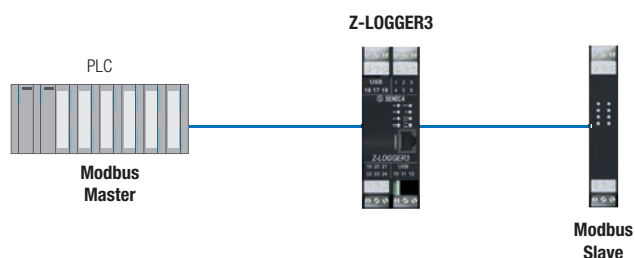
SMART DATALOGGER

APPLICATION EXAMPLES

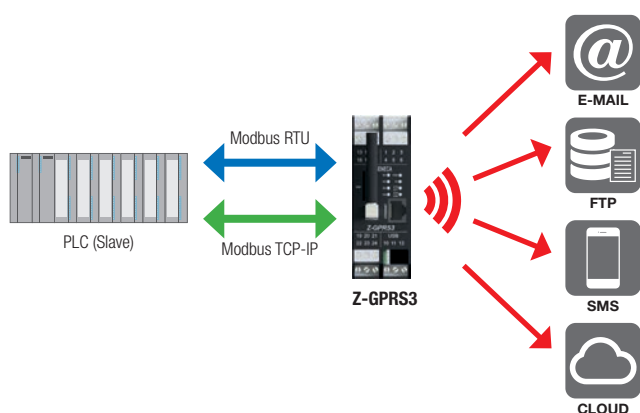
DATA ACQUISITION AND RE-TRANSMISSION



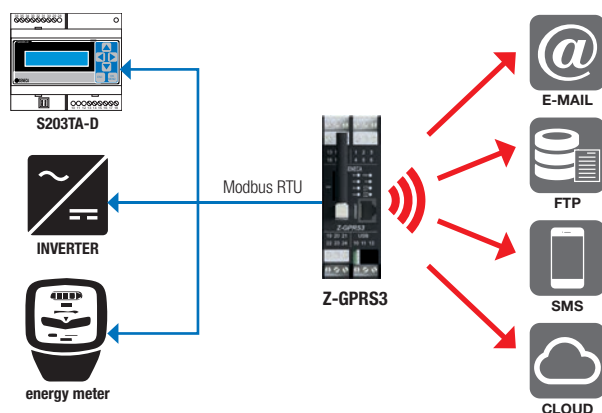
SIMULTANEOUS MASTER / SLAVE OPERATION



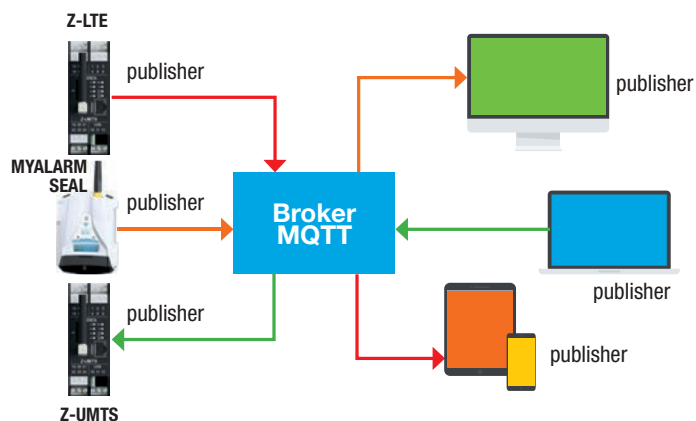
PLC REMOTE MANAGEMENT



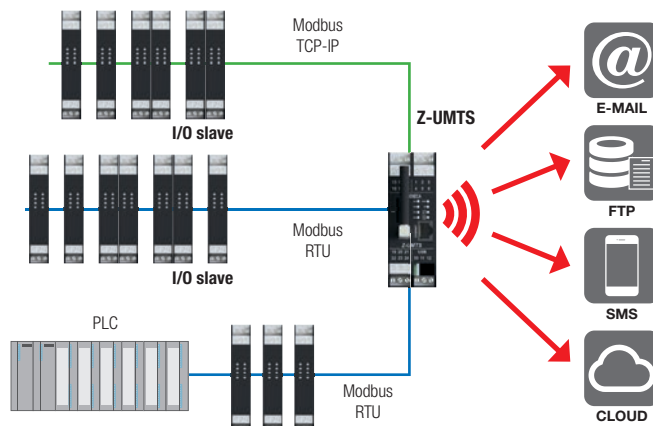
POWER MEASUREMENT, CONTROL AND SUPERVISION



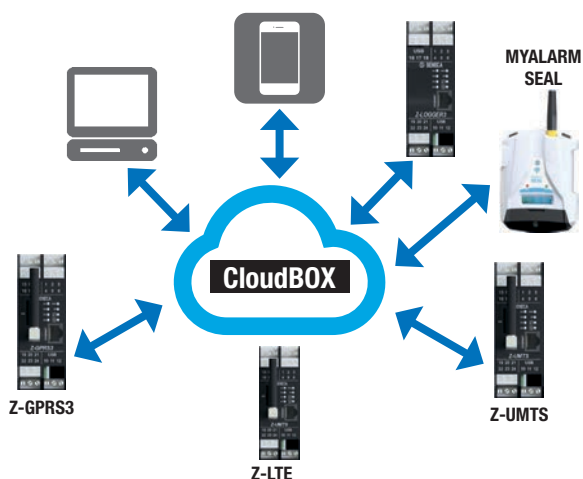
MQTT ARCHITECTURE



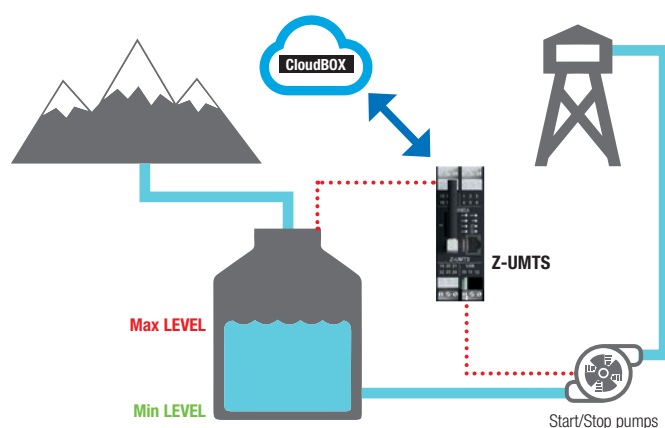
DATALOGGING AND DATA RE-TRANSMISSION








IOT REMOTE MONITORING



PUMPS CONTROL REMOTE MONITORING



SMART DATALOGGER

	MYALARM SEAL	Z-LOGGER3	Z-GPRS3	Z-UMTS	Z-LTE
					
	Datalogger with monitoring functions, programmable control logic and Cloud support	Datalogger with built-in I/O, alarm management functions and Cloud support	GSM/GPRS Datalogger with built-in I/O, remote control functions, voice commands and Cloud support	3G+ Datalogger with built-in I/O, remote control functions, voice commands and Cloud Support	4G Datalogger with built-in I/O, remote control functions, voice commands and Cloud Support
GENERAL DATA					
Power supply	6..15 Vdc	11..40 Vdc/ 19..28 Vac	11..40 Vdc/ 19..28 Vac	19..40 Vdc/ 19..28 Vac	19..40 Vdc/ 19..28 Vac
Power transducers	No	Yes	Yes	Yes	Yes
Built-in UPS / Rechargeable battery	Backup battery LiOn 3.7 V - 1,000 mAh	Yes (max autonomy 60 minutes)	Yes (max autonomy 60 minutes)	Yes (max autonomy 60 minutes)	Yes (max autonomy 60 minutes)
Connections	Spring clamps 3.5 mm pitch	3-way screw terminal blocks (5 mm pitch for cable up to 2.5 mm ²)	3-way screw terminal blocks (5 mm pitch for cable up to 2.5 mm ²)	3-way screw terminal blocks (5 mm pitch for cable up to 2.5 mm ²)	3-way screw terminal blocks (5 mm pitch for cable up to 2.5 mm ²)
Vocal alarms and DTMF commands	Yes	No	Yes	Yes	Yes
Isolation	-	1.500 Vac	1.500 Vac	1.500 Vac	1.500 Vac
Protection degree	IP20	IP20	IP20	IP20	IP20
SIM	Push-push SIM slot for mini SIM 15x25 mm	-	Push-push SIM slot for mini SIM 15x25 mm	Push-push SIM slot for mini SIM 15x25 mm	Push-push SIM slot for mini SIM 15x25 mm
Display	LCD 128x32 punti con area visibile 39x8,6 mm	-	-	-	-
Operating temperature	-20...+55°C (0..45°C recommended)	-10...+50°C	-10...+50°C	-10...+50°C	-10...+50°C
Built-in temperature sensor	Termistore NTC	-	-	-	-
Weight	150 g	250 g	280 g	280 g	280 g
Dimension (lxhxd)	80x105x30 mm	100 x 112 x 35 mm	100 x 112 x 35 mm	100 x 112 x 35 mm	100 x 112 x 35 mm
Mounting	DIN rail or wall mount	35 mm DIN rail - IEC EN60715	35 mm DIN rail - IEC EN60715	35 mm DIN rail - IEC EN60715	35 mm DIN rail - IEC EN60715
Case	Polycarbonate ABS	PBT, black	PBT, black	PBT, black	PBT, black
I/O CHANNELS					
Digital Inputs	Nr.4 channels Reed, contact, PNP, Pulscap (photodiode) 30 Hz	Nr.4 PNP, NPN channels (counters @32bit up to 30 Hz)	Nr.4 PNP, NPN channels (counters @32bit up to 30 Hz)	Nr.4 channels PNP, NPN, max 30 Hz (4 counters/totalizers @32bit)	Nr.4 channels PNP, NPN, max 30 Hz (4 counters/totalizers @32bit)
Analog Inputs	Nr.2 channels, voltage range (0..30 Vdc); current (0..20 mA); accuracy 0,1% f.s.	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	Nr.2 channels, range 0..20 mA, 0..30 V, 16 bit
Digital Outputs	See options and order codes	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	Nr.2 relay channels SPDT max 2 A 250 Vac
ModBUS I/O expandability	No	Yes	Yes	Yes	Yes
COMMUNICATION					
Communication ports	Nr.1 Micro USB B Host	Nr.1 Ethernet 10/100 M (RJ45), Nr.1 RS232/RS485 switchable (terminal), Nr.1 RS485 ModBUS, Nr.1 Micro USB B Host local programming	Nr.1 Ethernet 10/100 M (RJ45), Nr.1 RS232/RS485 switchable (terminal), Nr.1 RS485 ModBUS, Nr.1 Micro USB B Host local programming	Nr.1 Ethernet 10/100 M (RJ45), Nr.1 RS232/RS485 switchable (terminal), Nr.1 RS485 ModBUS, Nr.1 Micro USB B Host local programming	Nr.1 Ethernet 10/100 M (RJ45), Nr.1 RS232/RS485 switchable (terminal), Nr.1 RS485 ModBUS, Nr.1 Micro USB B Host local programming
Protocols	http post, MQTT	Ftp, Smtp, http, ModBUS TCP, ModBUS RTU, HTTP post, MQTT	Ftp, Smtp, http, ModBUS TCP, ModBUS RTU, HTTP post, MQTT, Https, SMTP with SSL/TLS	FTP client,SMTP client, http rest (SSL), MQTT (SSL), ModBUS TCP Client/Server, ModBUS RTU Master / Slave, Https, SMTP and MQTT with SSL/TLS	FTP client,SMTP client, http rest (SSL), MQTT (SSL), ModBUS TCP Client/Server, ModBUS RTU Master / Slave, Https, SMTP and MQTT with SSL/TLS
Modem / GPS / Radio	GSM/GPRS Quad band (850 / 900 / 1800 / 1900 MHz)	-	2G - GSM/GPRS Quad Band 850/900/ 1800/1900 MHz	3G+ Worldwide Pentaband con GPS GNSS 8a generazione, 16 canali GPS, 14 canali GLONASS, Precisione <1,5m CEP-50.	4G/LTE Model con GNSS: GPS/ GLONASS/BeiDou/Galileo/QZSS fino a 55 canali
Transparent Gateway	-	Yes	Yes	Yes	Yes
PROCESSING, MEMORY					
Flash (serial)	8 MB	8 MB	8 MB	8 MB	8 MB
Expandable memory	Micro SD included, Micro SD push-push slot for SD and SDHC card up to 32 GB	Micro SD card included (up to 4 GB) expandable up to 32 GB (dedicated slot)	Micro SD card included (up to 4 GB) expandable up to 32 GB (dedicated slot)	MicroSD card included (up to 4 GB) expandable up to 32 GB (Micro SD or MicroSDHC)	MicroSD card included (up to 4 GB) expandable up to 32 GB (Micro SD or MicroSDHC)
Datalogger	Measurements, alarms, events, logging on Micro SD card and Flash Memory	Measurements, alarms, events, logging on Micro SD card and Flash Memory	Measurements, alarms, events, logging on Micro SD card and Flash Memory	Measurements, alarms, events, logging on Micro SD card and Flash Memory	Measurements, alarms, events, logging on Micro SD card and Flash Memory
Synchronous Datalogger	Minimum sampling time 1 minute	Minimum sampling time 1 minute	Minimum sampling time 1 minute	Minimum sampling time 1 minute	Minimum sampling time 1 minute
Asynchronous Datalogger	Up to 8 trigger events with max. input freq. 1 Hz	Up to 8 trigger events with max. input freq. 1 Hz	Up to 8 trigger events with max. input freq. 1 Hz	Up to 8 trigger events with max. input freq. 1 Hz	Up to 8 trigger events with max. input freq. 1 Hz
PROGRAMMING AND MAIN FUNCTIONS					
Programming environment	SEAL (SENECA Advanced Language)	SEAL (SENECA Advanced Language)	SEAL (SENECA Advanced Language)	SEAL (SENECA Advanced Language)	SEAL (SENECA Advanced Language)
Max. number of function blocks (SEAL)	32	32	32	32	32
No. max variables per device	91	100	100	100	100
Web Server	-	Yes, on Ethernet	Yes, over Ethernet, Private APN SIM, Public IP SIM	Yes embedded or on SD Card, Ethernet, Private APN SIM, Public IP SIM, DDNS	Yes embedded or on SD Card, Ethernet, Private APN SIM, Public IP SIM, DDNS
Mobile app	SENECA SMS	SENECA SMS	SENECA SMS	SENECA SMS	SENECA SMS
Character encoding	UTF8/UNICODE support	UTF8/UNICODE support	UTF8/UNICODE support	UTF8/UNICODE support	UTF8/UNICODE support
Firmware update	SD Card, porta USB, Ftp esterno	Ftp / Web Server	Ftp / Web Server	Ftp / Web Server	Ftp / Web Server
IoT / Cloud Support	http post, MQTT, CloudBOX compatibility	http post, MQTT, CloudBOX compatibility	http post, MQTT, CloudBOX compatibility	http post, MQTT, CloudBOX compatibility	http post, MQTT, CloudBOX compatibility
Advanced math functions	Yes	Yes	Yes	Yes	Yes
STANDARD					
Norms	ETSI EN 301489-7, EN 301511, EN 301 489-1 IEC / EN 60950	EN 61000-6-4, EN 64000-6-2, EN 61010-1	EN 301511, EN 301489-1/7, EN 60950	EN 61000-6-4, EN 61000-6-2, EN 301511, EN 301489-1, EN 301489-7, EN 60950	EN 61000-6-4, EN 61000-6-2, EN 301511, EN 301489-1, EN 301489-7, EN 60950

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