DATAWATT
AN OVARRO TECHNOLOGY

DSG SERIES

The Datawatt Smart Grid (DSG) series are designed for multiple applications and offers a flexible design with maximum security.

The Datawatt DSG-series is designed according the latest state of the art techniques and security requirements.

- **Designed for maximum security**
- **Multiple protocols available**
- **Flexible design**
- **LTE/4G Communication**

Function	Comment
Designation	Industrial grade modular remote terminal unit (RTU)
Modularity	MCU base box with optional Modem and optional 1x I/O module. MCU can be extended with 8x I/O modules. Further I/O extensions possible via CAN bus with max. 14x ECU modules, each ECU can be composed with max. 8x I/O modules
Processor	ARM Cortex A9, 2 cores, 800 MHz
Clock	Real-time clock with optional lithium battery backup
Memory	4 GB eMMC NAND Flash, 512 MB DDR3 RAM, SD card (insertable)
Display/Keyboard	2x16 characters display with background LED, 6 button keyboard
Communication Serial	1x RS232 (system port), 2x RS232 (auxiliary ports), 1x RS232/RS485/S0 (auxiliary port) 1x CAN bus Optional up to 16x RS232/RS485 via external MOXA serial device server(s)
Communication IP	2x Ethernet (1/10/100) Optional modem (4G (LTE FDD Cat.4, 3GPP release 9 compliant, 5 bands) / 3G (2 bands) / 2G (2 bands)). SIM type: mini SIM (2FF)
Power Supply	DC powered, 20 – 30 VDC
Power Backup	Embedded 24VDC no break functionality, with charger, using 2 x 12 VDC batteries, with alarms
Inputs/Outputs	16DI module: 16x Active Digital Inputs 8DI module: 8x Galvanic Isolated Passive Digital Inputs 8DOR module: 8x Galvanic Isolated Digital Outputs 16AI module: 16x Passive Voltage (0-1 V) or Current (0/4-20 mA) Analog Inputs 8AI module: 8x Passive Isolated Voltage (0-1/10 V) or Current (0/4-20 mA) Analog Inputs 4AO module: 4x Active Current (0/4-20 mA) Analog Output MIXA module: 8x DI (see specs 16DI), 3x DO (see specs 8DOR), 4x AI (see specs 16AI)

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Function	Comment
Connectors	Screw terminals for power, I/O, CAN. RJ-45 for communications. Modem antenna type: SMA Female 50 ohm, 1 mandatory, 1 optional (diversity)
Operating System	Linux kernel with additions developed/integrated by Datawatt
Programming	Internal Webserver, PC packages: RTU Manager, Codesys PLC (IEC61131-3)
Languages	IEC61131-3 (IL, LD, FBD, SFC, ST, CFC), Optional C# add-ons
Alarm Handling	Yes
Data Logging	Configurable: Time based (schedules), Event based (value change), Specific (PLC triggered)
SCADA Compatible	List available on request
Remote Upload	Configuration (Setup/Objects/PLC), Firmware updates
IT Features	SSH/SFTP, HTTP(S), Datawatt DNAP, NTP
Protocol Support	Modbus Master (RTU/ASCII/TCP) via serial/IP. Modbus Slave (RTU) via serial IEC60870-5-101/104 Slave, IEC60870-5-103 Master IEC61850 Slave IEC1107 List of other protocols available on request
Security	IEC62443 (pending) ACL, several accounts for levels of authority, SSL, OpenVPN, IpSEC Internal hardware settings: disable SD card, disable interrupting boot procedure Root account can not be used remotely Check at Datawatt the applicability of the individual security functionality
Size	MCU box: 120 x 70 x 120 mm ECU + I/O expansion: 120 x70 x (37 + N*37) mm, N is number of I/O modules
Mounting	DIN rail EN50022 (DIN35)
Temperature	-20°C to +65°C
Material	Plastic
Approvals	Emission: EN61000-6-2, Immunity: EN61000-6-2, Safety: EN60950 FCC/IC, PTCRB/GCF, RCM, R&TTE/GCF