

Smart Sensors

Sensing always and everywhere



Smart sensors or "The Things" are basic building block for the Internet of Things (IoT) ecosystem. These family of wireless and wired sensors are ideal solution for almost all areas of use. Adopting some of widely used methods of communication like Modbus, M-Bus or Wireless M-Bus, and broad range of physical quantities, makes these sensors easy to integrate into any system.

Compact enclosure with two mounting holes is perfect for attaching to walls and other surfaces. These sensors are compatible with DSH100 Sensor Hub series, DL28 and DG100 IoT Edge Gateways.



DECODE

Short range wireless sensors

DWS100 SimplIRF series

Based on physical and network layers of open source SimpliCI1 protocol this series of wireless sensors offers more by adopting Simpl (Simplified Modbus Protocol Layer) as application layer. Adding new primitives of indication and confirmation together with existing request and response, make this protocol ideal for bidirectional communication in low power wireless sensor and actuator network. All communication is encrypted with XTEA standard. Compatible sensor hub is DSH101 series.

Specification

Frequency	868MHz
Output power	10mW
Protocol	SimplIRF
Battery life	1year @ 600s heartbeat
Power supply	CR2032 battery
Outdoor range	300m
Housing plastic	50x35x20mm



DWS100M WM-Bus series



Designed for meter reading in Europe, the Wireless M-Bus protocol is an adaptation of the wired M-Bus standard. This protocol is widely used for smart metering and is used for remote reading of gas, electricity, water and heating meters. The Wireless M-Bus protocol is particularly known for the quality of its radio coverage, the easy association between other technologies and the simplicity of deployment and installation of the equipment. Compatible sensor hub is DSH102 series.

Specification

Frequency	868.95MHz
Output power	10mW
Protocol	WM-Bus, EN 13757-4
Mode	T1, and T2 for setup
Battery life	1year @ 600s heartbeat
Power supply	CR2032 battery
Outdoor range	300m



Wired bus sensors



DMS100 Modbus series

Due to its simplicity, the Modbus protocol is a widely used method of communication for sensing and automation. Sensors are wired to a twisted pair cable bus which distributes power and carries data lines. Small OLED display shows latest measuring results and with its buttons is used for easy setup of devices in the field. Supply range includes 12V and 24V supply typically found in industry. Thanks to the low power, up to 200 units may be attached to the single twisted pair cable more than 1km long. Compatible sensor hub is DSH105 series.

Specification

Protocol	Modbus RTU
Display	0.66" OLED
Power supply	4.5 ~ 28VDC
Consumption	max. 200mW
Interface	Half duplex RS-485
Units on bus	max. 200
Speed	1200 ~ 115200bps
Connection	screw terminal, nom. 1.5mm ²
Housing	plastic, 50x35x20mm



DMS100M M-Bus series

M-Bus is a European standard for smart metering and is used for remote reading of gas, electricity, water and heating meters. In general, it allows the reading of any type of sensor at a lower cost through a data and power supply bus composed of 2 wires using a master-slave principle. Thanks to this advantages the M-Bus standard is widely adopted for IoT systems as reliable, low cost and flexible solution in smart home, building automation and energy sector. Compatible sensor hub is DSH104 series.

Specification

Protocol	M-Bus, EN13757
Power supply	from bus, 1 unit load
Interface	M-Bus slave
Speed	autobaud, 300/2400bps
Compatibility	SND_NKE, SND_UD, REQ_UD2
Addressing	secondary, primary
Connection	screw terminal, nom. 1.5mm ²
Housing	plastic, 50x35x20mm



Physical quantities

Different sensor types are available with several physical quantities. Some devices are single physical quantity sensor while others are combining multiple quantities in a single device. Sensor name consist of sensor family name and sensor type number, for example DMS101 for Modbus temperature sensor.

Sensor type	Physical quantity	Output range	Sensing element
101	Temperature	-30.0 ~ 105.0°C	NTC 10k
102	Temperature, 1m probe	-30.0 ~ 105.0°C	NTC 10k
110	Temperature Humidity	-40.0 ~ 125.0°C 0 ~ 100%	HDC2010
111	Temperature Pressure	-40.0 ~ 85.0°C 300 ~ 1100hPa	BMP280
112	Temperature Humidity Pressure	-40.0 ~ 85.0°C 0 ~ 100% 300 ~ 1100hPa	BME280
113	Temperature Humidity Pressure AIQ	-40.0 ~ 85.0°C 0 ~ 100% 300 ~ 1100hPa 0 ~ 500	BME680
114	Ambient light (human eye response)	1 ~ 65535lux	OPT3001
115	Optical power (300 ~ 1000nm)	100nW/cm ² ~ 6.5535mW/cm ²	OPT3002
116	Red / Green / Blue / White light	Raw data 4 x 0-65535	VEML6040
117	UVA / UVB light	Resolution UVA 0.91 counts/μW/cm ² , UVB 2.1 counts/μW/cm ²	VEML6075
130	Switch input, 1m cable	Logic level 0, 1	-
131	Alarm reed switch	Logic level 0, 1	reed switch

More new sensors with new physical quantities are yet to come.

Decode Data Communications

Bulevar Nikole Tesle 30A
11080 Belgrade, Serbia
Tel./Fax. +(381 11) 311 00 27
office@decode.rs
www.decode.rs