Storm-05

Terminal for technology monitoring and controlling

→ **collection of telemetry data**
→ **automation functions**
→ **broad range of interfaces**

Storm-05 is a multi-functional terminal from the Storm family that meets all general standards for SCADA systems in telecommunications, industry, the power sector and other fields. The terminal is equipped with a number of communication interfaces through which it can be easily integrated into customers' existing systems. Typical use includes remote control, monitoring ambient conditions and consumption, data transmission and temperature measurement.

→ Basic Characteristics

- broad range of inputs and outputs
- easy extension via Storm extension modules
- easy installation of a many 1-Wire bus sensors
- the ability to add special custom functions
- communications interface for easy integration using a number of standard protocols
- local and remote configuration, parameter setting and diagnostics
- automatic upgrade and update
- suitable for installation with a grounded plus or minus backup battery pole
- Smart Grid measuring element
- easy integration for IoT and Cloud solutions

→ Communication

- 1-Wire data bus
- GPRS/LTE mobile communication module
- RS-232, RS-485 and Ethernet serial and network interfaces
- broad range of standard communication protocols
- the ability to communicate in multiple directions simultaneously
- data storage when the communication link goes down
- time sync via communication protocol
- sending last status in case of power failure

→ Typical Use

- data collection and processing for technology of communication providers
- universal RTU with PLC functions for monitoring and controlling equipment in industry and transport
- monitoring building security equipment
- terminals for on-line transmission of data from power meters and consumption meters for other utilities (gas, heat, water)
- power plant monitoring, control and regulation
- power industry monitoring, control and automation
- delivery for integration into technological components and facilities
- available as an OEM product for manufacturers, suppliers and system integrators
- connection of sensors for measuring temperature, relative humidity, atmospheric pressure, light intensity, flooding, atmospheric CO content, distance, position and many other parameters

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Terminal for technology monitoring and controlling

Technical Specifications	
Digital inputs	16x opto-element, passive input
Digital outputs	4x relay with switching contact
Data bus	2x bus for 1-Wire sensors
Analog inputs	2 x masurement 0-20mA/10V
Communication interface	Ethernet, RS-232, RS-485, wireless by type of used GSM module – LTE/ UMTS/EDGE/GPRS
Antenna connectors GSM/GPS	SMA/F
Build	9M width plastic case
Mounting	35 mm DIN rail
Ingress protection	IP 20
Power supply	48 V DC, possibility to measure own supply voltage
Typical draw	100 mA
Operating temperature	-25 ÷ 70 °C
Maximum ambient humidity	95 % without condensation
Weight	max. 250 g
Dimensions (w x h x d)	158 x 90 x 60 mm (9 modules)
EMC emission standards and immunity standards	ČSN EN 61000-6-4, ČSN EN 55024, ČSN EN 55022, ČSN EN 61000-6-2

Digital Output Parameters	
Arrangement	1 x 4 DO, common point
Switched current	activation 4 A / 24 V, 3 A / 48 V deactivation DC 24 V / 4 A, DC 110 V / 0,3 A, DC 48 V / 2A
DO galvanic separation	300 V AC/DC, 2500 V DC 1 minute
Connection points	WAGO 734-6 six-pole connector
Connecting conductors	max. cross-section 0.75 mm^2
Output status indication	red LED
Application examples	one-bit, two-bit outputs for control or regulation of a connected system, control via derived quantities

Digital Input Parameters	
Arrangement	1 x 8 + 1 x 8, common minus
Galvanic separation	yes
Strength of galvanic separation	300 V AC 300 V DC 2500 V DC 1 minute
Conductor connection	2x WAGO 734-10 ten-pole connector
Connecting conductors	max. cross-section 0.75 mm^2
Input status indication	green LED
Application examples	one-bit, two-bit inputs for signalling and faults (with/without time), impulse counters, data storage during communication outage, calculation of derived quantities

Analog Inputs Parameters	
Quantity	2 x AI
Arrangement	1 x 4, common minus

Communication Protocols (depending on interface)	
RS-232, RS-485	IEC 60870-5-101, Modbus (RTU)
Ethernet	IEC 60870-5-104, Modbus TCP, DNP 3.0 TCP
1-Wire	1-Wire

1-Wire Data Bus Parameters	
Quantity	2x data bus
Arrangement	1 x 2, common minus
Topology	bus or star
Accuracy	depending on sensor

Example of Device with 1-Wire Communication	
Manufacturer and model	TECHSYS 1W Thermometer
Temperature measurement range	-55 ÷ 90 °C
Resolution	down to 0.0625 °C
Number of bits	9 ÷ 12
Connector	WAGO 6-pin
Temperature sensor	DS18B20
Dimensions	70 x 70 mm
Colour	grey or black

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