

Monitoring Systems MS

Data loggers are designed for the measurement, recording, evaluation, and subsequent processing of input electrical signals, characterized by their relatively slow changes (longer than 1 second). When used in conjunction with appropriate transmitters and transducers, they are suitable for monitoring physical quantities.



External terminal and output relays board.

RS485.

Ethernet

RS232.

USB.

Power supply and alarm output.

Power ON LED.

Alarm LED.

Control panel.



MS6R - MS6R - For desktop use



MS6-Rack - For mounting to 19" rack

- Monitoring system MS can measure and process up to 16 input signals
 - MS6D: 16 universal software-programmable inputs
 - MS55D: modular 1-16 inputs, wide range of modules
- Logging interval from 1 sec to 24 hours, with each channel's interval being individually selectable
- To autonomously record measured values, with memory capacity for 480,000 readings
- To create alarm states
- To perform other actions based on the created alarms, including audible and visual indications, controlling relay outputs, sending SMS messages, controlling telephone dialers, and transmitting messages through various Ethernet interface protocols
- To monitor measured values and states in real-time

product catalog



Main differences	MS6D	MS55D
inputs	16 software programmable inputs	1 - 16 hardware input modules
maximum measured DC current	20 mA dc	5 A dc
maximum measured DC voltage	10 V dc	75 V dc
most sensitive measuring range of dc voltage	18 mV dc	100 mV dc
maximum measured AC current	-	5 A ac
maximum measured AC voltage	-	50 V ac
input for measurement of frequency	-	0 to 5 kHz
input for counting of pulses	-	Yes



MS6D MS55D

Each Monitoring System contains 16 software configurable inputs from user PC. Also signals from sensors working on RS485 bus with ModBus or Advantech protocol can be recorded. RS485 input is available as optional accessory.

Parameters of inputs MS55D

The user can select the hardware modules to be fitted into the monitoring system MS. The modular design gives you the freedom to start with several input modules and to expand the system later on.

Parameters of configrable inputs MS6D

MEASURED VALUES		Range	Accuracy	Note	
current	DC	4 to 20 mA	±0.1% FS (±0.02 mA)	it is possible to connect pasive sensors (powered by monitoring system) or active sensor with its own power supply. Input resistance about 110 Ohms.	
voltage	DC	-10 V to +10 V	±0.1% FS (±10 mV)	Input resistance about 10 MOhms	
		-1 V to +1 V	±0.1% FS (±1 mV)		
		-100 mV to +100 mV	±0.1% FS (±100 uV)		
		-18 mV to +18 mV	±0,1% FS (±18 uV)		
resistance	two-wire resistance measurement	0 to 300 Ohms	±0.1% FS (±0.3 Ohms)	measuring current approximately 0.8 mA @ 50 ms pulse	
		0 to 3000 Ohms	±0.1% FS (±3 Ohms)	measuring voltage approximately 0.5 mA @ 50 ms pulse	
		0 to 10000 Ohms	±0.1% FS (±10 Ohms)	measuring current approximately 0.1 mA @ 50 ms pulse	
temperature probes Pt and Ni	Ni1000	-50 °C to +250 °C	±0.2 °C (-50 °C to 100 °C)	Ni1000/6180 ppm, two-wire connection	
			±0.2 % MV (100 °C to 250 °C)	measuring current approximately 0.5 mA @ 50 ms pulse	
	Pt100	-200 °C to +600 °C	±0.2 °C (-200 °C to +100 °C)	Pt100/3850 ppm, two-wire connection	
			±0.2 % MV (+100 °C to +600 °C)	measuring current approximately 0.8 mA @ 50 ms pulse	
	Pt1000	-200 °C to +600 °C	±0.2 °C (-200 °C to +100 °C)	Pt1000/3850 ppm, two-wire connection	
			±0.2 % MV (+100 °C to +600 °C)	measuring current about 0.5 mA @ 50 ms pulse	
thermocouple	K (NiCr-Ni) T (Cu-CuNi) J (Fe-Co) S (Pt10 % Rh-Pt) N (NiCrSi-NiSiMg) B (Pt30 % Rh-Pt)	-200 °C to 1300 °C -200 °C to 400 °C -200 °C to 750 °C 0 to 1700 °C -200 °C to 1300 °C 100 °C to 1800 °C	±(0.3 % MV + 1.5 °C) MS6D only	linearized, with cold junction compensation, datalogger must be placed in recommendend working position	
			±(0.3 % MV + 1.5 °C) (200 °C to 1700 °C)		linearized, without cold junction compensation
			±(0.3 % MV + 1.0 °C) in range 300 °C to 1800 °C		
thermistor	NTC with selectable formula	up to maximum thermistor resistance 11000 Ohms	according to the used resistance range (see measurement of resistance)	the same characteristics for all connected thermistors	
				default settings: R25=2252 Ohms, R80 = 282.7 Ohms	
binary signal	potential-less contact open collector voltage levels		binary signal	input voltage for state „L“ (IN-COM) < 0.8 V	
				input voltage for state „H“ (IN-COM) > 2 V	
				resistance of closed contact for state „L“ (IN-COM) < 1 kOhms	
RS485	input for serial signal RS485		on request	resistance of open contact for state „H“ (IN-COM) > 10 kOhms	
				minimum duration for sensing of change: 200 ms	
				input serves for reading from devices supporting protocol Mod-Bus RTU or Advantech	
				connected to terminals next to terminals for channel 15 and 16	
				input can work with 16 devices	
				galvanically isolated	

Note: The inputs are not galvanically isolated (except RS485 input). If you need galvanically isolated inputs then you can choose from a wide range of input modules for monitoring system MS55D. FS means (full scale) and MV (measured value).

MEASURED VALUES		Mo- dule types	Range	Accuracy	Notes
current	DC	A0	4 to 20 mA	±0.1 % FS	with source approximately 21V for two-wire transducers with current loop (e.g. temperature and humidity transducers Comet).
		A1*	4 to 20 mA		only galvanic not isolated
		B0*	0 to 20mA		for passive sensing of current, Rin = 14 Ohms
		B1*	0 to 1 A		input resistance Rin = 0.04 Ohms
	AC	B2*	0 to 5 A	±1 % FS	galvanic isolated, sinusoidal signal at a frequency of 50 Hz input resistance Rin by type 0.04 Ohm to 14 Ohms
		C0	0 to 20 mA		
		C1	0 to 1 A		
		C2	0 to 5 A		
voltage	DC	D0*	0 to 100 mV	±0.1 % FS	input resistance Rin by a 900 kOhms to 10 Mohms
		D1*	0 to 1 V		
		D2*	0 to 10 V		
		D4*	0 to 75 V		
	AC	D5*	-10 V to +10 V	±0.1 % FS (± 20 mV)	only galvanic isolated, sinusoidal signal at a frequency of 50 Hz input resistance Rin by type 700 kOhms to 10 Mohms
		E0	0 to 100 mV		
		E1	0 to 1 V		
		E2	0 to 10 V		
	E4	0 to 50 V			
resistance		F*	must be specified	±0.1 % FS	two-wire connection
temperature probes Pt and Ni	Ni1000	J*	-50 °C to +250 °C	±0.2 °C (-50 °C to 100 °C)	Ni1000/6180 ppm, two-wire connection
				±0.2% MV (100 °C to 250 °C)	measuring current of approximately 0.25 mA continuously
	Pt100	K*	-140 °C to +600 °C	±0.2 °C (-140 °C to +100 °C)	Pt100/3850 ppm, two-wire connection
				±0.2 % MV (+100 °C to +600 °C)	measuring current of approximately 2 mA continuously
Pt1000	K1*	-140 °C to +600 °C	±0.2 °C (-140 °C to +100 °C)	Pt1000/3850 ppm, two-wire connection	
			±0.2 % MV (+100 to +600 °C)	measuring current of approximately 0.2 mA continuously	
thermocouple	K (NiCr-Ni) T (Cu-CuNi) J (Fe-Co) S (Pt10 % Rh-Pt) B (Pt30 % Rh-Pt)	N* T* O* P* Q*	-70 °C to +1300 °C -200 °C to +400 °C -200 °C to 750 °C 0 °C to 1700 °C 100 °C to 1800 °C	±0.3 % MV + 1.5 °C	linearized, cold junction compensation, datalogger must be placed in recommendend working position
				±0.3 % MV + 1.5 °C (200 °C to 1700 °C)	
				±0.3 % MV + 1.0 °C (300 °C to 1800 °C)	
binary signal	potential-less contact voltage, galvanically isolated	S* S1	binary signal		maximum resistance of closed contact is 1000 Ohms minimum duration for recording is 200 ms
					voltage for „H“ state is 3 V to 30 Vdc @ 9 mA max minimum duration for recording: 200 ms galvanically isolated
pulse counter	potential-less contact, galvanically isolated potential-less contact, open connector	CTU CTK	31 bits, 5kHz max.		voltage change of the counter state is 3 V to 24 Vdc backup power, filter bouncing galvanically isolated
					maximum resistance of closed contact is 10 kOhms minimum open contact resistance is 250 kOhms backup power, filter bouncing
frequency	input voltage signal measurement, galvanically isolated measurement frequency switching contact, galvanically not isolated	FU FK	0 to 5 kHz 0 to 5 kHz	±(0.2 % MV + 1 Hz)	input voltage for „H“: 3 V to 24 Vdc @ 7 mA minimum duration of input pulse: 30 us galvanically isolated
					±(0.2 % MV + 1 Hz)
RS485	input for serial signal RS485	RP	digital transmission		input supports Modbus RTU or Advantech connected devices must have the same communication parameters input can work with up to 16 devices galvanic isolated, MS can be equipped wit multiple RP modules

Optional accessories for monitoring system MS

A solution for extreme conditions

- up to IP65



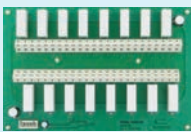
MP048
MS6D datalogger in IP54 protection case with connected terminal at the lid.

MP049
MS55D datalogger in IP54 protection case with connected terminal at the lid.

MP033
Case with IP65 protection with wall holders and MS data logger holders - no cutout in the lid.

Note: Dimensions of all cases is 270 x 570 x 140 mm. The relay board MP018 can be placed inside.

Switching and controlling



MP018
Relay module contains 16 mains relays 250V/8A with switching-over contacts. Each relay can be controlled based on alarm creation at different input channels accordingly to setting of user program. It is necessary to buy connection cable MP017. We also offer brackets on DIN rail MP019 and MP20.

MP050
Relays module is designed for mounting into MS6-Rack. It contains 16 mains relays maximum voltage 50 V AC/75 Vdc with switching-over contacts. A connection cable and blind plug are supplied.

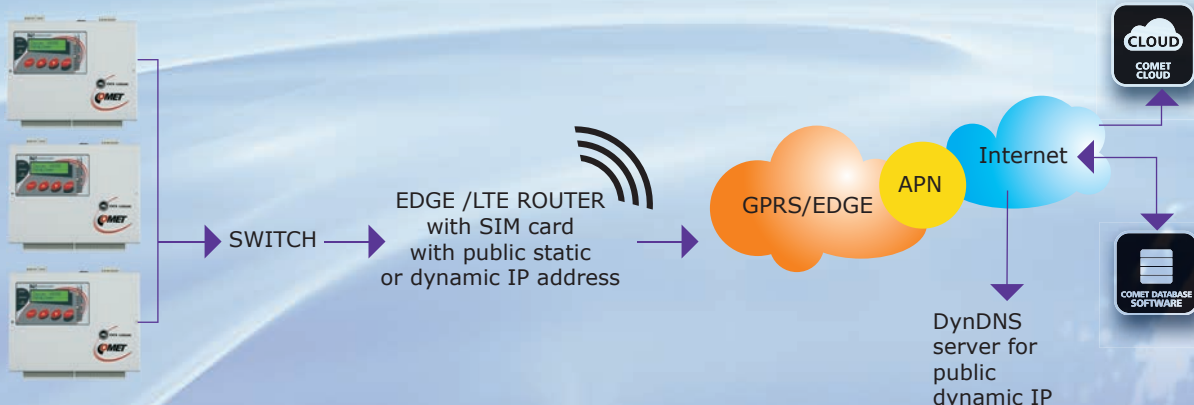
Ethernet

- » download of memory in 2min 30s (depends on the network throughput)
- » communication and sending alarm messages by means of several network protocols is enabled (web, SNMP, SMTP, SysLog, SOAP, ModBus)
- » each data logger has its IP address (support DHCP)



GPRS/EDGE router - MP052

Router is intended for MS6D, MS6R, MS6-Rack and MS55D which are equipped with an Ethernet interface MP042.



IP address of router is assigned by your mobile provider and it is related to your SIM card. Address may be private, public dynamic or public static. IP address is public if router is accessed by it directly from internet. Static IP is fixed allocated to SIM by provider. Dynamic IP address is acquired from provider during connection of router to the GPRS/EDGE network. Dynamic IP is variable. Not every provider supports a public IP! Open VPN tunnel with a private IP address can be used.

Power and backup adapters



A1940
Universal ac/dc adapter 24 Vdc/1 A for connection to terminals, switch-mode.



A1759
Universal linear ac/dc adapter 230V-50 Hz/21 Vdc/1 A - for connection to terminals.

A5948
Power supply 230V-50Hz/24Vdc/2,5A for DIN rail 35mm, dual terminals 24Vdc, switch-mode, including DIN rail of 100mm length.

A6963
Backup power supply A6963 with battery A7963 - model MINI-BAT/24DC/1.3AH. Power supply is designed for mounting to 35 mm DIN.

A6966
It is necessary to buy two pieces of batteries A7966 12 V/7 Ah for this backup power supply. Not suitable for installation into closed switchboard.

Other accessories for installation and mounting can be found on our website.



KIT-GSM-M

This modem is suitable for users who need to acquire alarm SMS texts from one Monitoring System MS. Up to four phone numbers can be set up.