

Machine operation monitor

MPS 40, MPS 120

MPS is a diagnostic, measuring and control system that makes the following possible:

- ◆ to prevent unexpected machine failures and accidents by running permanent machine monitoring system using measuring and evaluation of variables crucial and decisive for trouble-free condition
- ◆ to perform long-distance transfer of monitored variables by data communication using computer network
- ◆ automatic shutdown of monitored equipment in emergency condition
- ◆ create distributed measuring systems (measuring switching centres) and networks
- ◆ to file operation and failure values



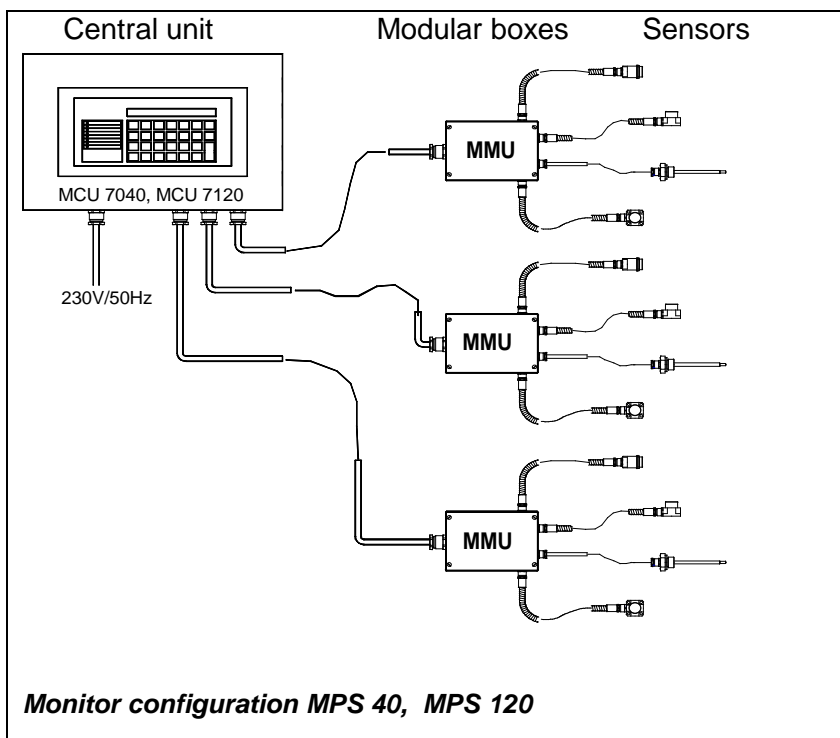
Purpose

The MPS monitor is designed for permanent and continuous monitoring of variables crucial and critical for the trouble-free machine operation (temperatures, pressures, vibration, flow rates of oil, etc) by evaluating measured data condition the machine condition evaluation is performed, moreover it is designed for filing measured values, for safeguarding machine shut-down or its functions in the state of emergency or as the case may be for measured data transfer to supervising control system.

Monitor configuration and MPS versions

The monitor configuration comprises one MCU central unit, several module boxes MMU and appropriate sensors/sensors of the measured values. The MMU boxes whose number is determined by a particular configuration of the measured values, are placed in the vicinity of the measured points and contain a electronics performing a signal processing from different types of the sensors.

From these MMU boxes the electric signals are led by combined cables to the central unit where they are digitised and subject to further signal processing. The MPS system is offered in two basic modifications MPS40 and MPS 120 that differ primarily from each other by the number of measured analogue inputs. The variant MPS 120 is used for larger measuring systems where there is a need of measuring more analogue values.



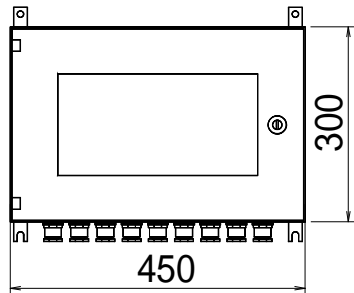
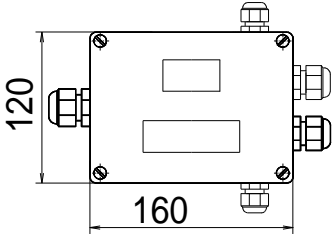
Measured quantities

MPS can measure:

- ◆ electric quantities
- ◆ vibrations
- ◆ rolling-contact bearings wear condition
- ◆ temperatures
- ◆ static and dynamic pressures of liquids and gases
- ◆ loading and other acting forces
- ◆ status of PTC thermistor protection of electric machines windings
- ◆ flow rates of oil etc.

The supplier provides customized:

- ◆ design
- ◆ system delivery
- ◆ installation

Parameters			
Central Unit MCU 7040 or MCU 7120		Module Unit MMU	
Box	steel with glass looking-through	Box	ABS or PC plast
Electric power supply	230 V/50 Hz, max. 30VA	Electric power supply	from the MCU central unit
Operating ambient temperature	-20°C to +55°C	Operating ambient temperature	-25°C to +55°C
Engineering desing	for the AB7 environment according to ČSN 33 2000-3	Engineering desing	for AB7 environment according to ČSN 33 2000-3
Sealing	IP 65	Sealing	IP 65
Mass	12 kg	Mass	1 kg
Dimensions (h x w x d)	300 x 450 x 150 mm	Dimensions (h x w x d)	120 x 160 x 91 mm
			

Tentative technical parameters of the system inputs and outputs			
Equipment	MPS 40	MPS 120	Function
analog inputs	4	12	vibration – effective velocity 12.5, 25, 50 mm/s in the range 10 Hz – 1 kHz bearing condition – conjugate acceleration temperatures: -30 to 40°C, 0 to 80°C, 0 to 150°C, 0 to 300°C, 200 to 600°C. standard equipment: 0 to 150°C pressures, forces – range according to attached sensor DC voltage within the range of 20mV, 1 or 10 V DC current 0-20mA, 4-20mA resistor 0 to 105 Ω
bivalent inputs	8	8	inputs 12V to 24V/5mA galvanically separated
analog outputs	2	2	DC voltage 0 to 10V, DC current 4 to 20 mA
relay outputs	7	7	voltage to 230V/2A
serial communication channel	2	2	1 x RS232 for PC, modem or printer + optional RS 232, RS422 or RS485 for connecting mor units MCU 7xxx (with high-way repeaters to 13.2 km between units)
alphanumeric display	2 x 40 characters	2 x 40 characters	displays oral state information regarding connected system, measured values
indication LED diodes	8	8	colours: red, yellow, green – indicate the state of the measured system
control keyboard	27 keys	27 keys	for service actions when the monitor is being adjusted