

DS 500 PM mobile – efficiency measurement for compressors

All-in-one measurement: electrical energy, pressure, dew point, temperature and consumption

Besides common measurements such as compressed air consumption or humidity, even more complex measurement tasks can be tackled with this all-round mobile device. With the DS 500 PM mobile, conducting an energy analysis according to DIN ISO 50001 is child's play.

Its clear, simple operating method makes it possible, for example, to carry out an analysis of compressed air costs by simultaneously measuring energy consumption (kW/kWh) and compressor output (m³/m³/h). And the data logger with its integrated effective power meter is perfect for auditors or service technicians.



For universal use:

· Up to 11 devices can be connected, including third-party sensors incl. power supply

Reliable:

Reliably stores all measured values on a memory card. Easy readout possible via USB stick

Energy analysis according to DIN ISO 50001:

- Costs in EUR per m³ air generated
- Specific output in kWh/m³
- Consumption of single lines including summation







With one or more additional electricity/effective power meters, it is possible to carry out efficiency measurements of several compressors simultaneously.

Analysis of specific power:

By measuring power consumption and delivery volume simultaneously, it is possible to calculate the specific power of the compressor. The specific power is calculated using the ratio of the required energy consumption in kWh to the volume of air in m³ output during the same period.

Specific power = $\frac{kWh}{m^3}$

The specific performance indicator of the compressor supplies information about the compressor's characteristics. The 'traffic light' graphic below can be used as an aid to assessment:



A typical specific power requirement for an oil-injected compressor might look something like this:

Delivery volume: 43.7 Nm³/min (according to ISO 1217 based on 20° C + 1 bar)

Total power consumption: 272.7 kW

Specific power requirement = 272.7 kW/43.7 m³/min = 6.24 kWh/m³/min = 0.104 kW/m³

DS 500 PM MOBILE TECHNICAL DATA				
Case dimensions:	360 x 270 x 150 mm			
Weight:	4.5 kg			
Material:	Diecast, front foil polyester, ABS			
Sensor inputs:	3/7/11 sensor inputs for analogue and digital sensors; freely allocatable. See options Digital CS sensors for dew point and consumption with FA/VA series SDI interface, RS 485/Modbus RTU digital third-party sensors. Analogue CS Sensors for pressure, temperature, clamp-on ammeters preconfigured. Analogue third-party sensors 0/4 20 mA 0 1/10/30 V pulse. Pt 100/Pt 1000 KTY			
Voltage supply for sensors:	24 VDC, max. 130 mA per sensor, integrated mains unit, max. 24 VDC, 25 W. For 8/12 sensor input version: 2 integrated mains units, each max. 24 VDC, 25 W			
Interfaces:	USB stick, Ethernet/RS 485 Modbus RTU/TCP, SDI (other bus systems on request), webserver optional			
Memory card:	Micro SD memory card, memory size 16 GB			
Power supply:	100240 VAC, 50-60 Hz			
Colour display:	TFT transmissive 7" touch panel, graphics, curves, statistics			
Accuracy:	Please see sensor specifications			
Operating temperature:	050° C			
Storage temperature:	-2070° C			



Example order code for DS 500 PM mobile: 0500 5340_A1_B1_C1_D1_E1

Number of additional sensor inputs	
A1	3 inputs
A2	7 inputs
A3	11 inputs

Current transformers – set consisting of 3 transformers (rec- ommendation refers to 400 volt)	
B1	100A/1A – up to 55 kW
B2	600A/1A – up to 340 kW
B3	1000A/1A – up to 600 kW

Mathematics calculation function (4 virtual channels)	
C1	without mathematics calculation functions
C2	with mathematics calculation functions

Totaliser function for analogue signals	
D1	without totaliser function for analogue signals
D2	with totaliser function for analogue signals

Webserver	
E1	without web server
E2	web server integrated

ORDER NO.
0500 5340 + Order code AE_
0554 8040
0554 7050
0553 0501
0553 0502
0553 1503
0553 0504
0554 6006