S110

Power and Energy Meter

S110

S110-P

MULTIFUNCTION POWER AND ENERGY METER
3-phase, 1-phase

COMPRESSOR PERFORMANCE
Helps to identify compressor efficiency

MODBUS/ RTU INTERFACE
Connects to any Modbus-Master

ROGOWSKI COILS
Wide range, highly accurate

Benefits

- Convenient and easy to set up compressor performance and efficiency monitoring
- Real power consumption in kW and kWh by measuring each phase voltage and current
- DIN rail installation for power cabinets or portable version with rugged housing
- Power range up to 2 MW (2000 kW)
- Three current sensor models with 100 A, 1000 A or 3000 A available

Operation Principle

The SUTO Power and Energy Meter has been designed with a focus on easy installation and reliable measurements. The main application is to measure the power consumption and the accumulated energy consumption of electrical 3-phase consumers, like compressors, driers and oxygen/nitrogen generators.

The main difference to common power measurements is that all relevant parameters are real measured values and not assumptions. Unlike the traditional method, where only one phase is measured, the voltage is assumed as stable and the phase shift is entered as a constant, the S110 measures the voltage and current of each phase.

By this, the S110 is much more accurate and delivers more reliable measurements compared to single phase current measurements.

S110

Application

In this illustration, a Power and Energy Meter is installed directly into the connection box of the compressor.

The Rogowski current coils are easy to install, by just clamping them around the power cables. The voltage connection can be drawn directly from the power cabinet of the compressor.

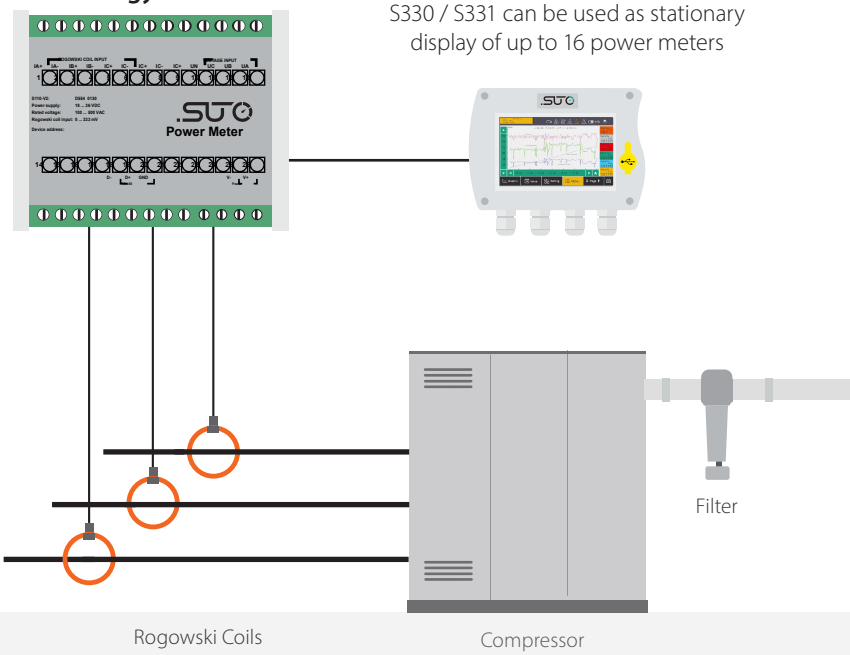
The Power and Energy Meter is then connected to a S330 / S331 Display and Data Logger to record the Voltage and Current of each phase, as well as recording the actual power consumption and the total energy consumption.

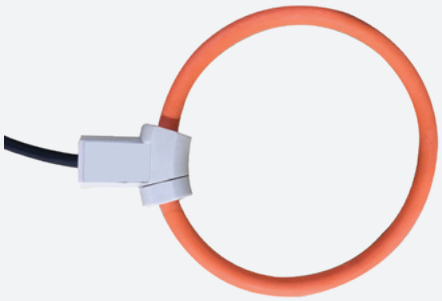
This is not only used to identify inefficient compressors, but also letting the compressed air operator know what the real costs of the compressed air are.

S110
Power and Energy Meter

S331
Data Logger

S330 / S331 can be used as stationary display of up to 16 power meters





Current Measuring via Rogowski coils offers a high accuracy over a wide range and an easy installation. (Note: for each phase, one coil is needed)

S110-P

Compressor Efficiency Test

Knowing your compressor efficiency is the first step for your energy saving goals. With this solution you will know, how much electrical energy is needed to produce 1 m^3 compressed air and what are the electrical costs.

Technical Data

Measurement

Flow	
Accuracy	V = 0.2 %, A = 0.5%
Selectable units	V, A, kW, kvar, kVA, kWh, Hz
Measuring range	100 ... 500 VAC, up to 2500 kW
Sampling rate	8 k/s

Signal / Interface & Supply

Fieldbus	
Protocol	Modbus RTU
Supply	
Voltage supply	24 VDC S110 1 W
	24 VDC S110-P 2 W
Current consumption	Max. 50 mA
Data interface	
Connection	M12 connector

General data

Material	
Housing	ABS
Miscellaneous	
Protection class	IP20
Approvals	CE
Weight	0.21 kg
Operating conditions	
Ambient temperature	-25 ... +55 °C
Storage temperature	-40 ... +85 °C

Ordering

Please use the following tables to assist in placing your order with our sales staff.

S110 Power and Energy Meter

Order No.	Description
Stationary	
KA66D5540130	S110 Power and Energy Meter, hat rail, Modbus/RTU, 24 VDC supply
KA66S5540140	Electrical Current Transmitter for S110, 1000 A, 100 mm diameter, 1.8 m cable, open ends
KA66S5540141	Electrical Current Transmitter for S110, 3000 A, 150 mm diameter, 1.8 m cable, open ends
KA66S5540142	Electrical Current Transmitter for S110, 100 A, 16 mm diameter, 1.8 m cable, open ends
Portable	
KA66P5540134	S110-P Portable Power and Energy Meter, incl. 5 m connection cable to S551 (Modbus/RTU), 4 voltage test leads and 4 test clips
KA66S5540160	Electrical Current Transmitter for S110-P, 1000 A, 100 mm diameter, 1.8 m cable, connector to S110-P
KA66S5540161	Electrical Current Transmitter for S110-P, 3000 A, 150 mm diameter, 1.8 m cable, connector to S110-P
KA66S5540162	Electrical Current Transmitter for S110-P, 100 A, 16 mm diameter, 1.8 m cable, connector to S110-P

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