



MSA141 analog output module.

Function

The MSA141 module converts one of the Sepam measurements into an analog signal:

- selection of the measurement to be converted by parameter setting
- 0-10 mA, 4-20 mA, 0-20 mA analog signal according to parameter setting
- scaling of the analog signal by setting minimum and maximum values of the converted measurement.

Example: the setting used to have phase current 1 as a 0-10 mA analog output with a dynamic range of 0 to 300 A is:

□ minimum value = 0

□ maximum value = 3000

■ a single module for each Sepam base unit, to be connected by one of the CCA770 (0.6m or 2 ft), CCA772 (2m or 6.6 ft) or CCA774 (4m or 13.1 ft) cords.

The analog output can also be remotely managed via the communication network.

Characteristics

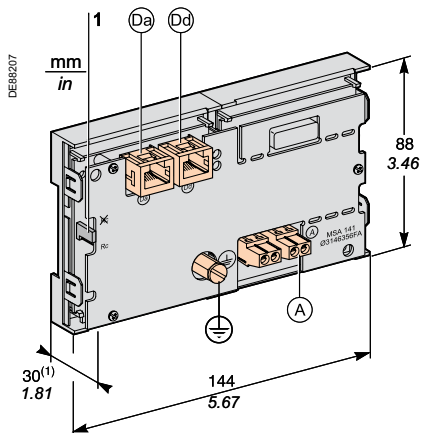
MSA141 module

Weight	0.2 kg (0.441 lb)
Assembly	On symmetrical DIN rail
Operating temperature	-25 °C to +70 °C (-13 °F to +158 °F)
Environmental characteristics	Same characteristics as Sepam base units

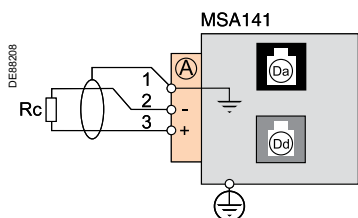
Analog output

Current	4-20 mA, 0-20 mA, 0-10 mA
Scaling (no data input checking)	Minimum value Maximum value
Load impedance	< 600 Ω (including wiring)
Accuracy	0.5 %

Measurements available	Unit	Series 20	Series 40	Series 80
Phase and residual currents	0.1 A	■	■	■
Phase-to-neutral and phase-to-phase voltages	1 V	■	■	■
Frequency	0.01 Hz	■	■	■
Thermal capacity used	1 %	■	■	■
Temperatures	1 °C	■	■	■
Active power	0.1 kW		■	■
Reactive power	0.1 kvar		■	■
Apparent power	0.1 kVA		■	■
Power factor	0.01			■
Remote setting via communication link		■	■	■



(1) 70 mm (2.8 in) with CCA77x cord connected.



Description and dimensions

- (A) Terminal block for analog output.
- (Da) RJ45 socket to connect the module to the base unit with a CCA77x cord.
- (Dd) RJ45 socket to link up the next remote module with a CCA77x cord (according to application).
- (⊕) Earthing terminal.

- 1 Jumper for impedance matching with load resistor (Rc), to be set to:
 - X, if the module is not the last interlinked module (default position)
 - Rc, if the module is the last interlinked module.

Connection

Connection of the earthing terminal

By tinned copper braid with cross-section $\geq 6 \text{ mm}^2$ (AWG 10) or cable with cross-section $\geq 2.5 \text{ mm}^2$ (AWG 12) and length $\leq 200 \text{ mm}$ (7.9 in), equipped with a 4 mm (0.16 in) ring lug.

Check the tightness (maximum tightening torque 2.2 Nm or 19.5 lb-in).

Connection of analog output to screw-type connector

- 1 wire with cross-section 0.2 to 2.5 mm² (AWG 24-12)
- or 2 wires with cross-section 0.2 to 1 mm² (AWG 24-18).

Wiring precautions

- It is preferable to use shielded cables
- Use tinned copper braid to connect the shielding at least at the MSA141 end.