

Notes for MP406 Soil Moisture Sensor & Interfaces

Part No. Description

SMD4-P Interface for MP406 Soil Moisture Sensor (VSW%) Output

Range of Response: 0 to 100 VSW% (air to water)

VSW% (Volumetric Soil Water Content)

Output Display: 0 to 100 VSW%

Display is 000.0 VSW% default (1 decimal place) and 000.00 VSW% in high resolution mode (2 decimal places).

Note: The data is always recorded as 000.00 (high resolution) in the Smart Logger.

Output Calibration: VSW% calibration using the lookup table as supplied in the MP406 manual and below for agricultural soils which are typically saturated at 50–55 VSW%.

Accuracy: ± 2 VSW% 0–55 VSW% i.e. $50 \pm 2\%$
 ± 10 VSW% 55–100 VSW% i.e. $80 \pm 10\%$

SMD4-V Interface For MP406 Soil Moisture Sensor (mV) Output

Range of Response: 0 to 100% (air to water)

Output Display: 0 to 1,200 mV (millivolt)

Display is 000.0 mV default (1 decimal place) and 000.0 mV in high resolution mode (1 decimal place).

VSW%	mV MP406	VSW%	mV MP406
0.00	0	55.00	1015
2.00	120	60.00	1025
5.00	210	65.00	1035
10.00	310	70.00	1045
15.00	415	75.00	1055
20.00	510	80.00	1065
25.00	610	85.00	1075
30.00	720	90.00	1085
35.00	825	95.00	1105
40.00	895	100.00	1160
45.00	955		
50.00	1005		



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- **Reading Rate.** The switching of the MP406 connected to the SMD4-P can be 10, 20, 30 or 60 minutes for the economy mode of operation. These are set when the logging frequency is set in the datalogger. This will suit the typical field user. A laboratory column user can, every few minutes, log water flow in columns if the SMD4-P is set to non economy mode. This necessitates the use of a power supply to the DataBus from a wall charger (part No. CH7A).
- **Cycle time** of the SMD4-P Interface depends on the soil moisture content. If all MP406 are in wet soil, the cycle time is 5 seconds per channel or 20 seconds total. If all of the MP406 are in dry soil, the cycle time is 2 seconds per channel or 8 seconds total. Warm up time is 0.5 seconds for each MP406.

Note: the cycle times apply whether 1, 2, 3 or 4 MP406 are connected to the SMD4-P

- **Unregulated power supply** to the MP406 must exceed 7 volts and be less than 15 volts. This means that an MP406 system will always require a 12 volt battery to be connected to the Databus.
- **Calibration** is done using a precision voltage calibration standard. The SMD4-P has the MP406 interface calibrated with the Look Up Table data as set out in the MP406 manual. Calibration and the SMD4-V will be simply the millivolt output.
- **Staggered starting times** of 1 minute delay is supplied with consecutively numbered interfaces supplied with a system (1 minute / serial no. advance).



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