

The DPMS X series panel meters have various I/O capabilities as shown below.

Model Type	Model Option Code	I/O Variations				
		Digital Inputs	Digital Outputs	Relay Outputs	Analog Inputs	Analog Outputs
DPMS XL+	IO1	6	-	2	-	-
	IO2	4	2	-	-	2
	IO3	4	-	2	2	-
DPMS XL	A	-	-	-	-	-
	B	-	2	-	-	-
	C	-	-	-	-	-
DPMS XPQ	D	4	2	2	-	-
	E	4	2	2	-	-
	F	4	2	2	-	-
	G	4	2	2	-	-
DPMS X1	DI	4	-	-	-	-
	RO	-	-	2	-	-
	AO1,2,3	-	-	-	-	1



I/O Module

### DPMS XL+

The **DPMS XL+** uses plug-in I/O modules and is limited to two I/O option modules per meter. Up to (3) I/O modules per meter can be used when there is no communication option ordered- max of (2) of the same type.

#### Digital Inputs (Qty. 4 to 16)

The Digital Inputs accept a *wetted* field contact input (voltage supplied externally) with a voltage of 20-250VAC/VDC. The IO1 option includes a 24VDC isolated power supply which can provide the input wetting voltage for up to 21 'dry' contact inputs.

The Digital Inputs can be configured to either:

- Provide status of the input contact (on/off and time stamp)
- Act as a pulse counter.

#### **Input Status**

When detecting the status, the display and Modbus Output will indicate whether the input is ON (contact closed) or OFF (contact open). In addition, the I/O module will record the time and date to the millisecond (SOE feature) and store the last 20 events. The time clock can be initially set on the DPMS-XL+ using the configuration software, front panel menus or Modbus commands and it is synchronized with an internal crystal that has 0.5 sec/day accuracy.

#### **Pulse Counter**

This mode will count the number of open/closed contact operations. It will display the number of pulses which can be scaled in the software as well as indicate the quantity via the Modbus communications. The counter can be cleared via the front display or Modbus communications.

### Digital Outputs (Qty. 2 or 4)

Digital Outputs are provided via solid state MOS capable of switching 0-250VAC/VDC, 100mA maximum. Each Form A output can be configured as an alarm or energy output. Alarms can be triggered through a configurable setting of various power measurements including volts, amps, power, THD and the Analog Inputs if used. Energy outputs can be configured to pulse upon a scalable delivered or received Whr or VARhr.

### Relay Outputs (Qty. 2 to 6)

Relay Outputs are provided via Form A contacts capable of switching 3A @ 250VAC or 30VDC. The relay operation is configurable as an alarm or control output. Each pair of relay outputs work in parallel so the configuration of either an Alarm Function or Control Function applies to both relays.

The Alarm Function can be triggered through a configurable setting of various power measurements including volts, amps, power, THD and the Analog Inputs if used. Each Relay Output can have its own alarm trigger.

The Control Output function allows you to operate the contact through the Modbus Communications.

### Analog Inputs (Qty. 2 or 4)

This option will accept two Analog inputs for 0-20Ma, 4-20mA, 1-5V or 0-5V (must select one). The input is displayed from a linear scale of 0-4095 in Hex that corresponds to the input signal. The Analog Inputs can also be used to trigger the alarms for the Digital and Relay Outputs.

### Analog Outputs (Qty. 2 or 4)

The Analog Outputs are available for 0-20Ma, 4-20mA, 1-5V or 0-5V (must select one). The Analog outputs can be individually configured to represent various power measurements (Volts, Amps, Watts, VARS, etc). The actual analog output can also be displayed from a linear scale of 0-4095 in Hex that corresponds to the output signal.

The Displayed Value = Analog Output in mA x 4096 / Full Scale (.02A or 5V).

Example: Analog Output = 10mA, the displayed value will be =  $0.01 \times 4096 / 0.02 = 2048$

## DPMS XL



The **DPMS XL** has 2 built-in Digital Outputs available in the 'B' version.

### Digital Outputs (Qty. 2)

Digital Outputs are provided via solid state MOS capable of switching 0-250VAC/VDC, 100mA maximum.

Each Form A output can be configured as an alarm or energy output. Alarms can be triggered through a configurable setting of various power measurements including volts, amps, power, THD and the Analog Inputs if used. Energy outputs can be configured to pulse upon a scalable delivered or received Whr or VARhr.



## DPMS XPQ

The **DPMS XPQ** includes built-in I/O to support: Qty. 4 Digital Inputs, Qty. 2 Digital Outputs and Qty. 2 Relay Outputs.

### Digital Inputs (Qty. 4)

The Digital Inputs accept a *wetted* field contact input (voltage supplied externally) with a voltage of 5-30VDC. All models include a 15VDC isolated power supply which can provide the input wetting voltage for up to 21 'dry' contact inputs.

The Digital Inputs can be configured to:

- Provide status of the input contact (on/off and time stamp)
- Trigger the recorder to capture waveforms

#### **Input Status**

When detecting the status, the display and Modbus Output will indicate whether the input is ON (contact closed) or OFF (contact open). In addition, the I/O module will record the time and date to the millisecond (SOE feature) and store the last 20 events. The time clock can be initially set on the DPMS-XPQ using the configuration software, front panel menus or Modbus commands and it is synchronized with an internal crystal that has 0.5 sec/day accuracy.

#### **System Trigger**

The trigger of waveform recording can be combined with the same functions as Input Status. Once initiated, the waveform will capture 5 cycles before and after the trigger of each voltage and current input (6 channels) and will store a maximum of 5 events. The waveform capture is performed at 16 samples/cycle.

#### Digital Outputs (Qty. 2)

Digital Outputs are provided via solid state MOS capable of switching 0-250VAC/VDC, 100mA maximum. Each Form A output can be configured as an alarm or energy output. Alarms can be triggered through a configurable setting of various power measurements including volts, amps, power, THD and the Analog Inputs if used. Energy outputs can be configured to pulse upon a scalable delivered or received Whr or VARhr.

#### Relay Outputs (Qty. 2)

Relay Outputs are provided via two Form A contacts capable of switching 3A @ 250VAC or 30VDC. The relay operation is configurable as an alarm or control output. The two relay outputs work in parallel so the configuration of either an Alarm Function or Control Function applies to both relays.

The Alarm Function can be triggered through a configurable setting of various power measurements including volts, amps, power, THD and the Analog Inputs if used. Each Relay Output can have its own alarm trigger. The Control Output function allows you to operate the contact through the Modbus Communications.



### **DPMS X1**

The DPMS X1 has 3 options for built-in I/O and can include 1 of each type per meter. (4 Digital Inputs, 2 Relay Outputs, 1 Analog Output)

#### Digital Inputs (Qty. 4)

The Digital Inputs accept a *wetted* field contact input (voltage supplied externally) with a voltage of 16-30VDC. The Digital Inputs can be configured to provide status of the input contact (on/off). When detecting the status, the display and Modbus Output will indicate whether the input is ON (contact closed) or OFF (contact open).

#### Relay Outputs (Qty. 2)

Relay Outputs are provided via two Form A contacts capable of switching 3A @ 250VAC or 30VDC. The relay operation is configurable as an alarm or control output. The two relay outputs work in parallel so the configuration of either an Alarm Function or Control Function applies to both relays.

The Alarm Function can be triggered through a configurable setting of various power measurements including volts, amps, power, THD and the Analog Inputs if used. Each Relay Output can have its own alarm trigger. The Control Output function allows you to operate the contact through the Modbus Communications.

#### Analog Outputs (Qty. 1)

The Analog Output is available for :4-20mA (option AO1), 0-1mA (Option AO2) or 0-5V (Option AO3). The Analog output can be configured to represent various power measurements (Volts, Amps, Watts, VARS, etc). The actual analog output can also be displayed from a linear scale of 0-4095 in Hex that corresponds to the output signal.

The Displayed Value = Analog Output in mA x 4096 / Full Scale (.02A or 5V).

Example: Analog Output = 10mA, the displayed value will be =  $0.01 \times 4096 / 0.02 = 2048$