ROC800-Series Power Input Modules

The Power Input Modules for the ROC800-Series Remote Operations Controller (ROC800) provide the ROC800 with the ability to convert external input power to the voltage levels required by its electronics. Three types of Power Input Modules are available for the ROC800: 12 Vdc (PM-12), 24 Vdc (PM-24), and 30 Vdc (PM-30).

12 Volt dc Module

With the 12 Vdc module, the ROC800 can accept 12 Vdc (nominal) input power from an AC/DC converter or other 12 Vdc supply. The input source should be fused and connected to the BAT+ and BAT– terminals.

The CHG+ and CHG– terminals provide functionality similar to an analog input channel and allow you to monitor a voltage, such as an external charging source.

The AUX+ and AUX– terminals can be used to supply reverse polarity protected voltage (12 V) to external devices, such as a radio or solenoid.

The AUX_{SW}+ and AUX_{SW}– terminals can be used to provide switched power for external devices.

24 Volt dc Module

With the 24 Vdc module, the ROC800 can accept 24 Vdc (nominal) input power from an AC/DC converter or other 24 Vdc supply fused and connected to the + and – terminals.

The AUX+ and AUX– terminals can be used to supply reverse polarity protected voltage (12 V) to external devices, such as a radio or solenoid.

30 Volt dc Module

With the 30 Vdc module, the ROC800 can accept 11 to 30 Vdc (nominal) input power from an AC/DC converter or other 11 to 30 Vdc supply. The input source should be fused and connected to the + and – terminals.

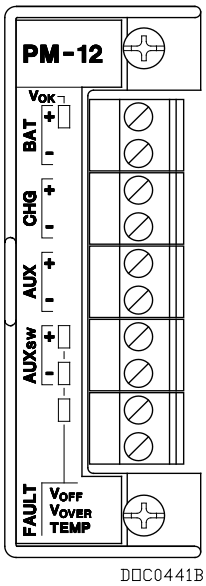
The AUX+ and AUX– can be used to supply reverse polarity protected voltage (Voltage output follows input) to external devices, such as a radio or solenoid.

The AUX_{SW}+ and AUX_{SW}– terminals can be used to provide switched power for external devices.

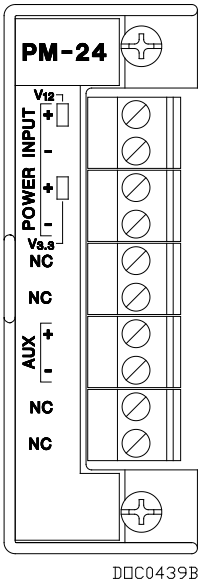
Compatibility and Installation

You can install and remove a Power Input Module from the module slot, when not under power, by removing the two captive screws accessible from the front of the unit.

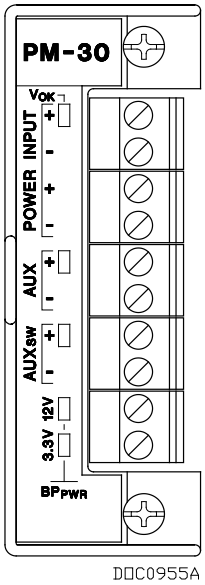
Note: The design of the PM-30 and PM-24 power modules does not include the low voltage cutoff feature present in the PM-12 module: should power fall below the set LoLo alarm (a default of 10.1 V), the PM-12 module ceases to provide power to the backplane. Thus, the module shuts down CPU operations. For the PM-24 and PM-30 modules, when power falls below the LoLo alarm point, the CPU goes into sleep mode. In sleep mode, the backplane still receives power, the DO modules continue to hold their logic, but nothing controls I/O at this point. If you need both the increased power capacity offered by the PM-30 and low voltage cutoff, refer to the options provided in the description of the PM-30 module in Chapter 3 of the *ROC800-Series Remote Operations Controller Instruction Manual* (part D301217X012).



12 Vdc Power Input Module



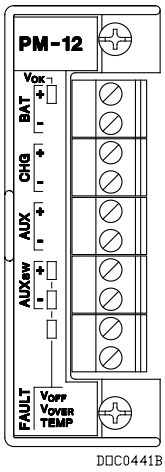
24 Vdc Power Input Module



30 Vdc Power Input Module

12 Vdc Power Input Module

Field Wiring Terminals



Terminal	Label	Definition
1	BAT+	Source/Battery Power
2	BAT–	Source/Battery Return
3	CHG+	Voltage Monitor Signal
4	CHG–	Voltage Monitor Common
5	AUX+	Auxiliary Output Power
6	AUX–	Auxiliary Output Return
7	AUXsw+	Switched Auxiliary Output Power
8	AUXsw–	Switched Auxiliary Output Return

Power

Input (BAT +/–)	Operating Range	11.5 to 14.5 Vdc
	Input Current	5 A maximum
Usable Power	60 W maximum	
Voltage Monitor (CHG +/–)	Input Voltage	18 Vdc maximum
Output (AUX+/–)	Output Voltage	Input Vdc (BAT +/–) minus 0.7 Vdc, reverse polarity protected
	Output Current	2.5 A maximum (fuse limited)
Switched Output (AUXsw +/–)	Output Voltage	Input Vdc (BAT +/–) minus 0.7 Vdc, reverse polarity protected
	Output Current	0.5 A maximum (circuit limited)
	Input Switch-On Resistance (BAT+ to AUXsw+)	0.1 Ω

Physical

Dimensions	26 mm W by 75 mm H by 133 mm D (1.03 in. W by 2.96 in. H by 5.24 in. D)	
Weight	97.5 g (3.44 oz)	
Wiring	12 to 22 American Wire Gauge (AWG) at the removable terminal block	
LEDs	V_{OK}	Indicates voltage is in tolerance on BAT+ and BAT–.
	V_{OFF}	Indicates the AUXsw+ output is disabled by the CPU control line.
	V_{OVER}	Indicates the AUXsw+ is disabled due to excess voltage on BAT+.
	TEMP	Indicates the AUXsw+ output is disabled due to the excess temperature of the Power Input Module.

Environmental

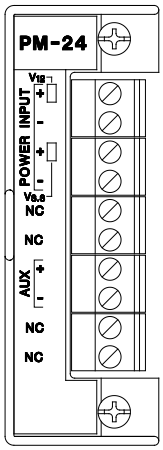
Same as the ROC800-Series unit in which it is installed.

Approvals

Same as the ROC800-Series unit in which it is installed.

24 Vdc Power Input Module

Field Wiring Terminals



Terminal	Label	Definition
1	+	Source/Battery Power
2	-	Source/Battery Return
3	+	Source/Battery Power[1]
4	-	Source/Battery Return[2]
5	NC	No Connection
6	NC	No Connection
7	AUX_{SW}+	Switched Auxiliary Output Power
8	AUX_{SW} –	Switched Auxiliary Output Return
9	NC	No Connection
10	NC	No Connection

1. Internally connected to terminal 1.
2. Internally connected to terminal 2.

Power

Input (Power Input +/−)	Operating Range	20 to 30 Vdc
	Input Current	1 to 2 A maximum
Usable Power	-40°C to 55°C	30 W maximum
	-40°C to 80°C	24 W maximum
Output (AUX+/−)	Output Voltage	11.3 Vdc, reverse polarity protected
	Output Current	0.5 A maximum (circuit limited)

Physical

Dimensions	26 mm W by 75 mm H by 133 mm D (1.03 in. W by 2.96 in. H by 5.24 in. D)	
Weight	120 g (4.24 oz)	
Wiring	12 to 22 American Wire Gauge (AWG) at the removable terminal block	
LEDs	V_{12}	Indicates the module is providing voltage to the backplane.
	$V_{3.3}$	Indicates the module is providing voltage to the CPU.

Environmental

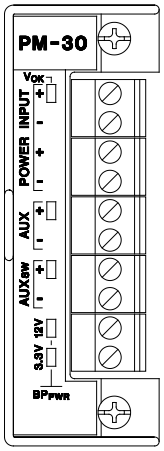
Same as the ROC800-Series unit in which it is installed.

Approvals

Same as the ROC800-Series unit in which it is installed.

30 Vdc Power Input Module

Field Wiring Terminals



Terminal	Label	Definition
1	+	Source/Battery Power
2	-	Source/Battery Return
3	+	Source/Battery Power[1]
4	-	Source/Battery Return[2]
5	AUX+	Auxiliary Output Power
6	AUX-	Auxiliary Output Return
7	AUX_{SW}+	Switched Auxiliary Output Power
8	AUX_{SW} –	Switched Auxiliary Output Return
9	NC	No Connection
10	NC	No Connection

1. Internally connected to terminal 1.
2. Internally connected to terminal 2.

Power

Input (BAT +/–)	Operating Range	11 to 30 Vdc
	Input Current	2 to 7 A maximum
Usable Power	76 W maximum	
Current Output	2.5 to 6.5A	
Output (AUX+/–)	Output Voltage	Input Vdc (BAT +/-) minus 0.7 Vdc
	Output Current	800 mA ± 10% maximum (circuit limited)
Switched Output (AUXsw +/–)	Output Voltage	Input Vdc (BAT +/-) minus 0.7 V dc
	Output Current	800 mA ± 10% maximum (circuit limited)

Physical

Dimensions	26 mm W by 75 mm H by 133 mm D (1.03 in. W by 2.96 in. H by 5.24 in. D)	
Weight	120 g (4.24 oz)	
Wiring	12 to 22 American Wire Gauge (AWG) at the removable terminal block	
LEDs	V_{OK}	Indicates voltage is in tolerance on BAT+ and BAT–.
	V_{12}	Indicates the module is providing 12 Vdc power to the backplane.
	$V_{3.3}$	Indicates the module is providing 3.3 Vdc power to the backplane.
	AUX+	Indicates the Auxiliary Output Power is enabled.
	AUX_{sw}+	Indicates the Switched Auxiliary Output Power is enabled.

Environmental

Same as the ROC800-Series unit in which it is installed.

Approvals

Same as the ROC800-Series unit in which it is installed.

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