

00625-01 Energy Harvesting Bundle

For CSI 9420 & Rosemount 848T Wireless Transmitters

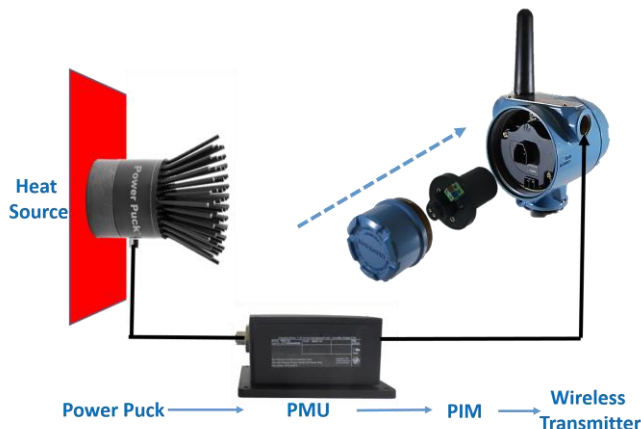


Power Puck® energy harvesters reduce or eliminate the need for battery replacements in wireless transmitters. They are available for a wide range of wireless transmitters, including the Emerson CSI 9420 Wireless Vibration Transmitter and Emerson Rosemount 848T Wireless Temperature Transmitter.

The 9420/848T solution uses an external Power Management Unit (PMU) to manage external power from the Power Puck and its internal backup batteries to power the transmitter. The backup batteries are used to supplement energy harvesting only if necessary.

Perpetua offers the 00625-01 solution for use in Non-Hazardous locations (also referred to as "Safe Area" or "Ordinary Locations").

Diagram



Performance

The tables below summarize power source lifetimes for the transmitters. Power life >10 years means power generated by the energy harvester is fully powering the transmitters.

For example, the 848T table shows transmitters operating at a 4-second update rate, with the power source life increasing from 0.7 years with a battery alone to >10 years with the Power Puck at any temperature difference greater than 35°C.

"No EH" references the power life with no energy harvesting.

848T Performance

Power Life in Years for the 848T Wireless Transmitter with Energy Harvesting						
Temperature Difference	No EH	35°C	40°C	50°C	60°C	70°C
		63°F	72°F	90°F	108°F	126°F
1 sec.	NA	NA	NA	NA	NA	NA
2 sec.	NA	NA	NA	NA	NA	NA
4 sec.	0.70	>10	>10	>10	>10	>10
8 sec.	1.40	>10	>10	>10	>10	>10
16 sec.	2.40	>10	>10	>10	>10	>10
32 sec.	4.10	>10	>10	>10	>10	>10
60 sec.	6.30	>10	>10	>10	>10	>10

CSI 9420 Performance

Power Life in Years for the CSI 9420 With Energy Harvesting						
Configuration: 2 Accelerometers, LCD						
Temperature Difference	No EH	35C	40C	50C	60C	70C
		63F	72F	90F	108F	158F
1 min.	0.3	0.4	0.4	0.5	0.6	0.8
3 min.	0.5	1.8	2.7	>10	>10	>10
5 min.	0.6	7.4	>10	>10	>10	>10
10 min.	1.2	>10	>10	>10	>10	>10
20 min.	1.6	>10	>10	>10	>10	>10
40 min.	2.4	>10	>10	>10	>10	>10
60 min.	3	>10	>10	>10	>10	>10
120 min.	3.6	>10	>10	>10	>10	>10

Specifications

Power Puck Energy Harvester	
Diameter, contact	60mm (2.4 in.)
Diameter, fins projected	99mm (3.9 in.)
Height	101mm (4 in.)
Weight	374g (0.8 lb.)
Electrical connector	M12 - Eurofast
Ingress Protection	IP67
Maximum Service Temperature	105°C (220°F)
Minimum Service Temperature	-45°C (-50°F)

Power Management Unit (PMU)	
Dimensions	125 x 80 x 57 mm 4.9 x 3.2 x 2.3 inches
Weight	1.06 kg (2.4 lb.)
Ingress Protection	IP68
Battery Backup Capacity	38 Ah
Maximum Service Temperature	80°C (175°F)
Minimum Service Temperature	-45°C (-50°F)

Mounting Accessories

The standard Power Puck mount is magnetic, intended for flat, metal surfaces <105°C. Other optional mounting adapters are available for 1-, 2-, 3-, 4-, 6-, 8-, 10-, 12-inch NPS pipe sizes or cylindrical surfaces up to 450°C. Surfaces >105°C require extenders to reduce the temperature applied to the Power Puck to ≤ 105°C.

The PMU comes standard with an integrated magnetic mount for attachment to ferromagnetic surfaces.

Description

The product ships with:

- (1) Power Puck
- (1) Power Management Unit (PMU)
- (2) 6m cables connecting the Power Puck to the PMU and PMU to the transmitter
- (1) Transmitter Power Interface Module

Part Number: 00625-01

Benefits

- Reduces or eliminates battery replacements
- Provides reliable operation where dust, moisture, debris, and extreme temperatures are common
- Switches automatically to backup battery power should the temperature delta become too small for energy harvesting

For More Information

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