

WirelessHART Datapoints Device Variables

Overview

Wireless HART systems publish data values of discrete datapoints using dedicated (pre-assigned) HART 'Device Variables'. The Device Variables are transmitted wirelessly in preconfigured Burst Messages, each containing eight (8) Device Variables' values.

Sensor and operating data may be generated from up to three sources, PCU, PORT1 or PORT2, and the identifier numbers associated with each variable originating from one of these sources is unique within the overall system. For example, the Device Variable reporting temperature from the PCU will have a different identifier number than the Device Variable reporting temperature from, say, PORT1.

WirelessHART PCU-X00 Repeater Published Data List

Device Variable	Device Variable Code	Engineering Units	Dynamic Variable Assignment	Burst Message #	Description
Repeater Electronics Temperature	1	Degrees Celsius	PV	0	Current operating temperature of the PCU electronics.
Repeater Battery Life	243	Days	SV	0	Number of days remaining before battery should be replaced.
Repeater Battery Voltage	242	Volts	TV	0	Battery input voltage.
Repeater Total Operating Time	11	Seconds	QV	0	Time the PCU has been powered since the time of manufacture.
Repeater Continuous Uptime	12	Seconds		0	Time the PCU has been operating since last being reset.
Repeater Average Wake Time	7	Milliseconds		0	Duration CPU is awake over each update period.
Repeater Battery Capacity Depleted	35	Coulombs		0	Total charge drawn from the battery.
Repeater Heartbeat	0	Dimensionless		0	Incrementing count value useful for confirming PCU and Sensor Probes are operating reliably.

WirelessHART PCU-X01 Sensor Hub Published Data List

Device Variable	Device Variable Code	Engineering Units	Dynamic Variable Assignment	Burst Message #	Description
Sensor Hub Electronics Temperature	1	Degrees Celsius		1	Current operating temperature of the PCU electronics.
Sensor Hub Battery Life	243	Days		1	Number of days remaining before battery should be replaced.
Sensor Hub Battery Voltage	242	Volts		1	Battery input voltage.
Sensor Hub Total Operating Time	11	Seconds		1	Time the PCU has been powered since the time of manufacture.
Sensor Hub Continuous Uptime	12	Seconds		2	Time the PCU has been operating since last being reset.
Sensor Hub Battery Capacity Depleted	35	Coulombs		2	Total charge drawn from the battery.
Sensor Hub Acceleration Millisecond Counter	2	Milliseconds		1	Time duration during which the PCU has experienced vibrations exceeding the user-configurable threshold.
Sensor Hub Heartbeat	0	Dimensionless		1	Incrementing count value useful for confirming PCU and Sensor Probes are operating reliably.
PORT 1 Sensor Probe Temperature	14	Degrees Celsius	SV	0	Current temperature of the PORT1 Sensor Probe.
PORT 1 Sensor Probe HC Detector 1 Level [2]	20	Percent		2	PORT1 HC Detector 1 exposure (hydrocarbon saturation level).
PORT 1 Sensor Probe HC Detector 2 Level	21	Percent		2	PORT1 HC Detector 2 exposure (hydrocarbon saturation level).
PORT 1 Sensor Probe HC Detector 3 Level	22	Percent		2	PORT1 HC Detector 3 exposure (hydrocarbon saturation level).
PORT 1 Sensor Probe HC Detector Max Level	23	Percent	PV	0	Current maximum of the PORT1 HC Detectors 1, 2 and 3.
PORT 1 Sensor Probe Liquid Level [1]	15	Inches		0	Liquid level in increments of 0.5 in.
PORT 1 Sensor Probe Acceleration Millisecond Counter	16	Milliseconds		0	Time duration during which the PORT1 Sensor Probe has experienced vibrations exceeding the user-configurable threshold.
PORT 1 Sensor Probe Heartbeat	13	Dimensionless		1	Incrementing count value useful for confirming PORT1 Sensor Probe is operating reliably.
PORT 2 Sensor Probe Temperature	25	Degrees Celsius	QV	0	Current temperature of the PORT2 Sensor Probe.
PORT 2 Sensor Probe HC Detector 1 Level [2]	31	Percent		2	PORT2 HC Detector 1 exposure (hydrocarbon saturation level).
PORT 2 Sensor Probe HC Detector 2 Level	32	Percent		2	PORT2 HC Detector 2 exposure (hydrocarbon saturation level).
PORT 2 Sensor Probe HC Detector 3 Level	33	Percent		2	PORT2 HC Detector 3 exposure (hydrocarbon saturation level).
PORT 2 Sensor Probe HC Detector Max Level	34	Percent	TV	0	Current maximum of the PORT2 HC Detectors 1, 2 and 3.
PORT 2 Sensor Probe Liquid Level [1]	26	Inches		0	Liquid level in increments of 0.5 in.
PORT 2 Sensor Probe Acceleration Millisecond Counter	27	Milliseconds		0	Time duration during which the PORT2 Sensor Probe has experienced vibrations exceeding the user-configurable threshold.
PORT 2 Sensor Probe Heartbeat	24	Dimensionless		1	Incrementing count value useful for confirming PORT2 Sensor Probe is operating reliably.

[1] Data only valid for HCDW sensor probes. Symmetry of port data allows either sensor probe type to be installed on a given port.

[2] Hydrocarbon detection for HCDW probes only. For HCD probes this sensor provides a simple integrity check only.

WirelessHART PCU-X11 Inclinometer Published Data List

Device Variable	Device Variable Code	Engineering Units	Dynamic Variable Assignment	Burst Message #	Description
Inclinometer Electronics Temperature	1	Degrees Celsius		0	Current operating temperature of the PCU electronics.
Inclinometer Battery Life	243	Days		1	Number of days remaining before battery should be replaced.
Inclinometer Battery Voltage	242	Volts		1	Battery input voltage.
Inclinometer Total Operating Time	11	Seconds		2	Time the PCU has been powered since the time of manufacture.
Inclinometer X Angle	3	Degrees	PV	0	Current tilt angle of the inclinometer X-axis with respect to the horizon.
Inclinometer Y Angle	4	Degrees	SV	0	Current tilt angle of the inclinometer Y-axis with respect to the horizon.
Inclinometer Acceleration Millisecond Counter	2	Milliseconds		0	Time duration during which the PCU has experienced vibrations exceeding the user-configurable threshold.
Inclinometer Heartbeat	0	Dimensionless		1	Incrementing count value useful for confirming PCU and Sensor Probes are operating reliably.
PORT 1 Sensor Probe Temperature	14	Degrees Celsius	QV	0	Current temperature of the PORT1 Sensor Probe.
PORT 1 Sensor Probe HC Detector 1 Level [2]	20	Percent		2	PORT1 HC Detector 1 exposure (hydrocarbon saturation level).
PORT 1 Sensor Probe HC Detector 2 Level	21	Percent		2	PORT1 HC Detector 2 exposure (hydrocarbon saturation level).
PORT 1 Sensor Probe HC Detector 3 Level	22	Percent		2	PORT1 HC Detector 3 exposure (hydrocarbon saturation level).
PORT 1 Sensor Probe HC Detector Max Level	23	Percent	TV	0	Current maximum of the PORT1 HC Detectors 1, 2 and 3.
PORT 1 Sensor Probe Liquid Level [1]	15	Inches		0	Liquid level in increments of 0.5 in.
PORT 1 Sensor Probe Acceleration Millisecond Counter	16	Milliseconds		0	Time duration during which the PORT1 Sensor Probe has experienced vibrations exceeding the user-configurable threshold.
PORT 1 Sensor Probe Heartbeat	13	Dimensionless		1	Incrementing count value useful for confirming PORT1 Sensor Probe is operating reliably.
PORT 2 Sensor Probe Temperature	25	Degrees Celsius		1	Current temperature of the PORT2 Sensor Probe.
PORT 2 Sensor Probe HC Detector 1 Level [2]	31	Percent		2	PORT2 HC Detector 1 exposure (hydrocarbon saturation level).
PORT 2 Sensor Probe HC Detector 2 Level	32	Percent		2	PORT2 HC Detector 2 exposure (hydrocarbon saturation level).
PORT 2 Sensor Probe HC Detector 3 Level	33	Percent		2	PORT2 HC Detector 3 exposure (hydrocarbon saturation level).
PORT 2 Sensor Probe HC Detector Max Level	34	Percent		1	Current maximum of the PORT2 HC Detectors 1, 2 and 3.
PORT 2 Sensor Probe Liquid Level [1]	26	Inches		1	Liquid level in increments of 0.5 in.
PORT 2 Sensor Probe Acceleration Millisecond Counter	27	Milliseconds		1	Time duration during which the PORT2 Sensor Probe has experienced vibrations exceeding the user-configurable threshold.
PORT 2 Sensor Probe Heartbeat	24	Dimensionless		2	Incrementing count value useful for confirming PORT2 Sensor Probe is operating reliably.

[1] Data only valid for HCDW sensor probes. Symmetry of port data allows either sensor probe type to be installed on a given port.

[2] Hydrocarbon detection for HCDW probes only. For HCD probes this sensor provides a simple integrity check only.