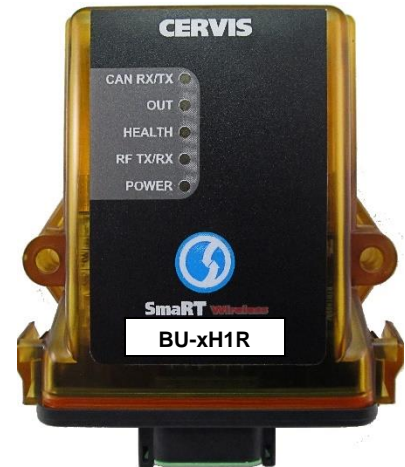


BU-xH1R Base Unit Family

Features

- ✓ DSSS Technology 900 MHz @ 10 mW, 2.4 GHz @ 100 mW
- ✓ One Form C Relay
- ✓ Up to Five Form A (SPST) Relay Outputs Standard Operation
- ✓ Single Connector for Wiring Ease
- ✓ Diagnostic LEDs
- ✓ CAN bus Capable
- ✓ Weatherproof Case



The SmaRT BU-2H1R5 and BU-9H1R5 base units feature one Form C relay output and five Form A relay outputs. CAN bus capable base units—BU-2H1R3 and BU-9H1R3—have one Form C and three Form A relay outputs. The BU-xH1R family of base units accepts a broad range of operating input power with model-dependent operating voltages of 7–32 VDC, 7–28 VAC, and 100–240 VAC. All connections are made using the single 12-wire cable harness that fits to the base unit keyed connector to guard against cross connection.

SmaRT base units feature seamless association with a SmaRT handheld unit without the need to open the case. Using Channel-Hopping Direct Sequence Spread Spectrum (DSSS) wireless technology at 900 MHz or 2.4 GHz, the base unit provides a robust link with a SmaRT handheld remote in congested radio environments, with a line-of-sight communications range of up to 1,000 feet. BU-9H1R3 and BU-2H1R3 CAN units include a CAN bus interface for applications requiring wired connectivity.

The rugged weatherproof enclosure allows the unit to operate worry-free in harsh weather conditions.

Specifications

Power

Operating V_{in} See Product Family Listing Table below

Outputs

Form C Relay (1); Form A Relay (3–5, model-dependent)
 7 A max switching @ 45° C
 100 mA min @ 5 VDC
 15 A max total output

Enclosure

Dimensions 119 x 133 x 36 mm (5.24" x 4.69" x 1.42")
Durability High Impact Polymer
Mounting 7.4 mm (0.29") dia. holes
 102 mm (4.0") center-to-center

Environment

Operating Temp –25° C to 55° C (–13° F to 131° F)
Storage Temp –40° C to 85° C (–40° F to 185° F)
Humidity 0 to 100%

Radio

Frequency 906–924 MHz or 2405–2480 MHz
RF Power See Product Family Listing Table below
License None required, license-free
Modulation Channel Hopping DSSS
Antenna Internal or external by device
Range 1000' (hardware option-dependent)

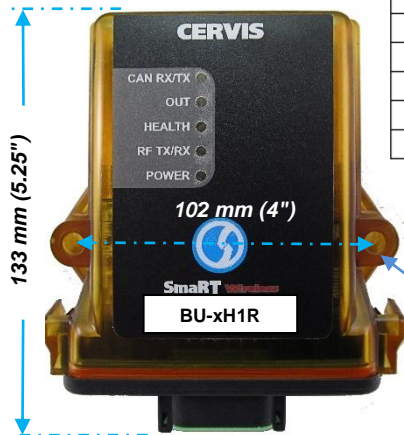
Communications

CAN Bus SAE J1939

Indicators (model dependent)

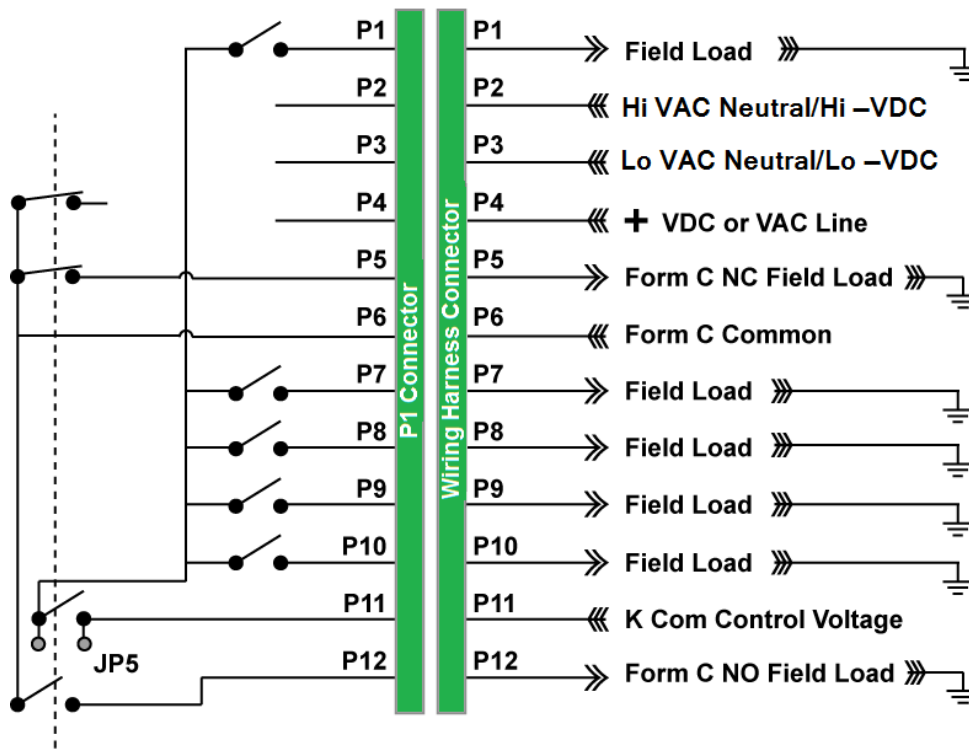
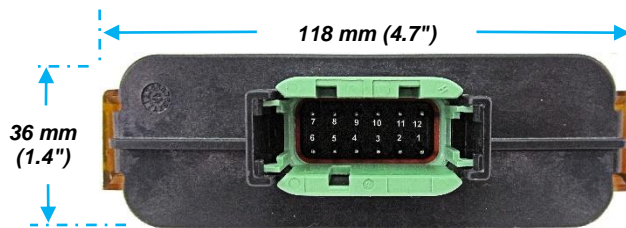
1 (CAN) Indicates CAN traffic
2 (OUT) Indicates activated relay
3 (HLTH) ON – OK
4 (TX/RX) Indicates RF traffic
5 (PWR) ON – Normal Operation
6 Unused

Mounting and Wiring



Pin	Name	Description
1	K1	Form A Relay
2	L3	Hi VAC Neutral/Hi -VDC
3	L2	Lo VAC Neutral/Lo -VDC
4	L1	+VDC or VAC Line
5	K6	Form C Relay NC
6	K6	Form C Relay Common

Pin	Name	Description
7	K5	Form A Relay or CANH
8	K4	Form A Relay
9	K3	Form A Relay or CANL
10	K2	Form A Relay
11	KCOM	Control Voltage
12	K6	Form C Relay NO



The wiring configuration shown is for a BU-xH1R5 — no CAN connection.
 For CAN bus BU-xH1R3, P7 is CANH and P9 is CANL.
 JP5 when installed (factory) isolates the Form A relays from the Form C relay.

✓ **Note:** Cable shields should be grounded only at one end of each shield segment to minimize ground loops.

✓ **Note:** BU-xH1R-CAN units are internally terminated at 4.3kΩ. Termination can be removed at the factory.

BU-xH1R Product Family Listing

Model Name	Freq.	RF Power	# of CH	Channel Type	Input Power	Antenna Style	Serial Port Style	AC Suppression
BU-9H1R5-INT-LVD	900 MHz	10 mW	6	Form C, 5 Form A	7-32 VDC	Internal	N/A	Yes
BU-9H1R3-INT-LVD-CAN	900 MHz	10 mW	4	Form C, 3 Form A	7-32 VDC	Internal	CAN	Yes
BU-9H1R5-INT-LVD-NOS	900 MHz	10 mW	6	Form C, 5 Form A	7-32 VDC	Internal	N/A	No
BU-9H1R3-INT-LVD-NOS-CAN	900 MHz	10 mW	4	Form C, 3 Form A	7-32 VDC	Internal	CAN	No
BU-9H1R5-INT-LVA	900 MHz	10 mW	6	Form C, 5 Form A	7-28 VAC	Internal	N/A	Yes
BU-9H1R3-INT-LVA-CAN	900 MHz	10 mW	4	Form C, 3 Form A	7-28 VAC	Internal	CAN	Yes
BU-9H1R5-INT-LVA-NOS	900 MHz	10 mW	6	Form C, 5 Form A	7-28 VAC	Internal	N/A	No
BU-9H1R3-INT-LVA-NOS-CAN	900 MHz	10 mW	4	Form C, 3 Form A	7-28 VAC	Internal	CAN	No
BU-9H1R5-INT-HVU	900 MHz	10 mW	6	Form C, 5 Form A	100-240 VAC	Internal	N/A	Yes
BU-9H1R3-INT-HVU-CAN	900 MHz	10 mW	4	Form C, 3 Form A	100-240 VAC	Internal	CAN	Yes
BU-9H1R5-INT-HVU-NOS	900 MHz	10 mW	6	Form C, 5 Form A	100-240 VAC	Internal	N/A	No
BU-9H1R3-INT-HVU-NOS-CAN	900 MHz	10 mW	4	Form C, 3 Form A	100-240 VAC	Internal	CAN	No
BU-9H1R5-EXT-LVD	900 MHz	10 mW	6	Form C, 5 Form A	7-32 VDC	External	N/A	Yes
BU-9H1R3-EXT-LVD-CAN	900 MHz	10 mW	4	Form C, 3 Form A	7-32 VDC	External	CAN	Yes
BU-9H1R5-EXT-LVD-NOS	900 MHz	10 mW	6	Form C, 5 Form A	7-32 VDC	External	N/A	No
BU-9H1R3-EXT-LVD-NOS-CAN	900 MHz	10 mW	4	Form C, 3 Form A	7-32 VDC	External	CAN	No
BU-9H1R5-EXT-LVA	900 MHz	10 mW	6	Form C, 5 Form A	7-28 VAC	External	N/A	Yes
BU-9H1R3-EXT-LVA-CAN	900 MHz	10 mW	4	Form C, 3 Form A	7-28 VAC	External	CAN	Yes
BU-9H1R5-EXT-LVA-NOS	900 MHz	10 mW	6	Form C, 5 Form A	7-28 VAC	External	N/A	No
BU-9H1R3-EXT-LVA-NOS-CAN	900 MHz	10 mW	4	Form C, 3 Form A	7-28 VAC	External	CAN	No
BU-9H1R5-EXT-HVU	900 MHz	10 mW	6	Form C, 5 Form A	100-240 VAC	External	N/A	Yes
BU-9H1R3-EXT-HVU-CAN	900 MHz	10 mW	4	Form C, 3 Form A	100-240 VAC	External	CAN	Yes
BU-9H1R5-EXT-HVU-NOS	900 MHz	10 mW	6	Form C, 5 Form A	100-240 VAC	External	N/A	No
BU-9H1R3-EXT-HVU-NOS-CAN	900 MHz	10 mW	4	Form C, 3 Form A	100-240 VAC	External	CAN	No
BU-2H1R5-INT-LVD	2.4 GHz	100 mW	6	Form C, 5 Form A	7-32 VDC	Internal	N/A	Yes
BU-2H1R3-INT-LVD-CAN	2.4 GHz	100 mW	4	Form C, 3 Form A	7-32 VDC	Internal	CAN	Yes
BU-2H1R5-INT-LVD-NOS	2.4 GHz	100 mW	6	Form C, 5 Form A	7-32 VDC	Internal	N/A	No
BU-2H1R3-INT-LVD-NOS-CAN	2.4 GHz	100 mW	4	Form C, 3 Form A	7-32 VDC	Internal	CAN	No
BU-2H1R5-INT-LVA	2.4 GHz	100 mW	6	Form C, 5 Form A	7-28 VAC	Internal	N/A	Yes
BU-2H1R3-INT-LVA-CAN	2.4 GHz	100 mW	4	Form C, 3 Form A	7-28 VAC	Internal	CAN	Yes
BU-2H1R5-INT-LVA-NOS	2.4 GHz	100 mW	6	Form C, 5 Form A	7-28 VAC	Internal	N/A	No
BU-2H1R3-INT-LVA-NOS-CAN	2.4 GHz	100 mW	4	Form C, 3 Form A	7-28 VAC	Internal	CAN	No
BU-2H1R5-INT-HVU	2.4 GHz	100 mW	6	Form C, 5 Form A	100-240 VAC	Internal	N/A	Yes
BU-2H1R3-INT-HVU-CAN	2.4 GHz	100 mW	4	Form C, 3 Form A	100-240 VAC	Internal	CAN	Yes
BU-2H1R5-INT-HVU-NOS	2.4 GHz	100 mW	6	Form C, 5 Form A	100-240 VAC	Internal	N/A	No
BU-2H1R3-INT-HVU-NOS-CAN	2.4 GHz	100 mW	4	Form C, 3 Form A	100-240 VAC	Internal	CAN	No
BU-2H1R5-EXT-LVD	2.4 GHz	100 mW	6	Form C, 5 Form A	7-32 VDC	External	N/A	Yes
BU-2H1R3-EXT-LVD-CAN	2.4 GHz	100 mW	4	Form C, 3 Form A	7-32 VDC	External	CAN	Yes
BU-2H1R5-EXT-LVD-NOS	2.4 GHz	100 mW	6	Form C, 5 Form A	7-32 VDC	External	N/A	No
BU-2H1R3-EXT-LVD-NOS-CAN	2.4 GHz	100 mW	4	Form C, 3 Form A	7-32 VDC	External	CAN	No

Model Name	Freq.	RF Power	# of CH	Channel Type	Input Power	Antenna Style	Serial Port Style	AC Suppression
BU-2H1R5-EXT-LVA	2.4 GHz	100 mW	6	Form C, 5 Form A	7–28 VAC	External	N/A	Yes
BU-2H1R3-EXT-LVA-CAN	2.4 GHz	100 mW	4	Form C, 3 Form A	7–28 VAC	External	CAN	Yes
BU-2H1R5-EXT-LVA-NOS	2.4 GHz	100 mW	6	Form C, 5 Form A	7–28 VAC	External	N/A	No
BU-2H1R3-EXT-LVA-NOS-CAN	2.4 GHz	100 mW	4	Form C, 3 Form A	7–28 VAC	External	CAN	No
BU-2H1R5-EXT-HVU	2.4 GHz	100 mW	6	Form C, 5 Form A	100–240 VAC	External	N/A	Yes
BU-2H1R3-EXT-HVU-CAN	2.4 GHz	100 mW	4	Form C, 3 Form A	100–240 VAC	External	CAN	Yes
BU-2H1R5-EXT-HVU-NOS	2.4 GHz	100 mW	6	Form C, 5 Form A	100–240 VAC	External	N/A	No
BU-2H1R3-EXT-HVU-NOS-CAN	2.4 GHz	100 mW	4	Form C, 3 Form A	100–240 VAC	External	CAN	No

