

## BU-xH18XF Base Units

### Features

- ✓ 18 Dedicated FET Outputs/Inputs
- ✓ CAN Bus Capable
- ✓ Four-Character Display Option
- ✓ Dual Connectors for Ease of Wiring
- ✓ Battery Backup Real-Time Clock
- ✓ Integral Weatherproof Translucent Case
- ✓ DSSS Technology (900 MHz @ 10 mW, 2.4 GHz @ 100 mW)
- ✓ Current Sense Capable
- ✓ 11 Diagnostic LEDs
- ✓ Power Cutoff FET
- ✓ PWM Control
- ✓ Dual Analog Input Capable
- ✓ Compact Design



The versatile BU-xH18XF base units feature eighteen FET (field effect transistor) high-side switching outputs or switch-to-ground digital inputs; factory configurable dual 0–10 VDC or 0–20 mA analog inputs that can also be configured as digital outputs/inputs; and control area network (CAN) Bus control capability. Eight pairs of base unit FET channels can be equipped with high-side current sense for better control of valve coil pairs.

The BU-xH18XF accept a broad range of input power, with operating voltages ranging from 7 VDC to 28 VDC. The rugged, weatherproof translucent enclosure allows these units to operate worry free in harsh weather conditions. Two 12-wire color-keyed weatherproof cables connect the controlled devices.

Using Direct Sequence Spread Spectrum (DSSS) wireless technology at 900 MHz or 2.4 GHz, the base unit provides a robust link to SmaRT handheld remotes in congested radio environments. SmaRT base units feature seamless association to SmaRT handheld remotes without the need to open either the base unit or the handheld remote case.

### Specifications

#### Power

**Operating  $V_{in}$**  +7 to +28 VDC

#### Environment

**Operating Temp** -20° C to 55° C  
(-4° F to 131° F)

**Storage Temp** -40° C to 85° C  
(-40° F to 185° F)

**Humidity** 0 to 100%

#### Enclosure

**Dimensions** 119 mm x 133 mm 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 center-to-center  
(4" center-to-center)

#### Factory Configurable Outputs/Inputs

**Digital** 18-FET, Open Drain; Input/Output

**Analog** Two 0–10 V or 4–20 mA inputs,  
or digital Input/Output

**Current** 2 A Per channel  
15 A Max. @ 55° C

#### Indicators (red LEDs)

- |                      |  |
|----------------------|--|
| <b>Unmarked</b>      | – Power polarity reversed when lit           |
| <b>+V1, +V2, +V3</b> | – Voltages OK when lit steady                |
| <b>1</b> Health      | – blinks 1x/sec when active                  |
| <b>2</b> RF TX       | – flashes when active                        |
| <b>3</b> RF RX       | – flashes when active                        |
| <b>4</b> CAN TX      | – flashes when active                        |
| <b>5</b> CAN RX      | – flashes when active                        |
| <b>6</b> Output      | – blinks 1x/sec when active                  |
| <b>7</b> Input       | – blinks 1x/sec when active                  |
| <b>8</b> Error       | – solid – channel output low or high current |

#### Radio

**Frequency**

**BU-9H18XF**

906–924 MHz

**BU-2H18XF**

2405–2580 MHz

**Power**

10 mW

100 mW

**License**

License-Free

**Modulation**

DSSS

**Antenna**

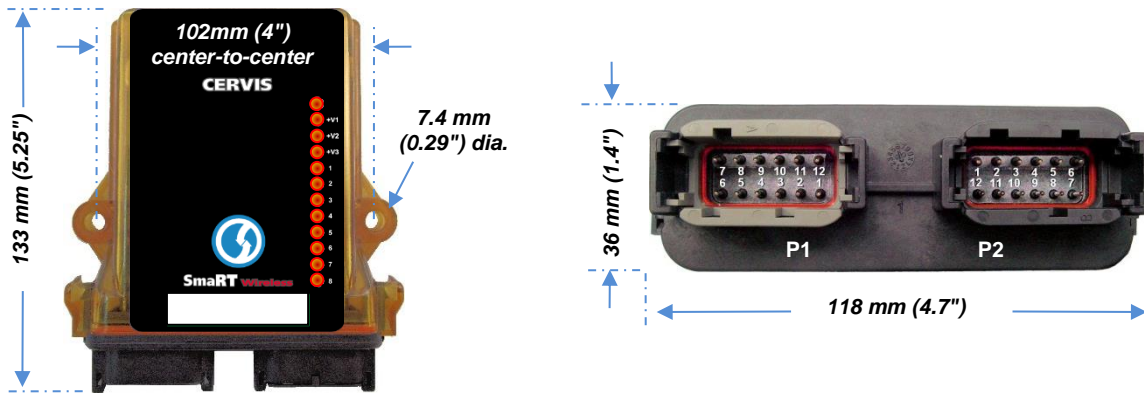
Internal or External (RP-TNC)

#### Umbilical Communications (option)

**CAN Bus**

SAE J1939

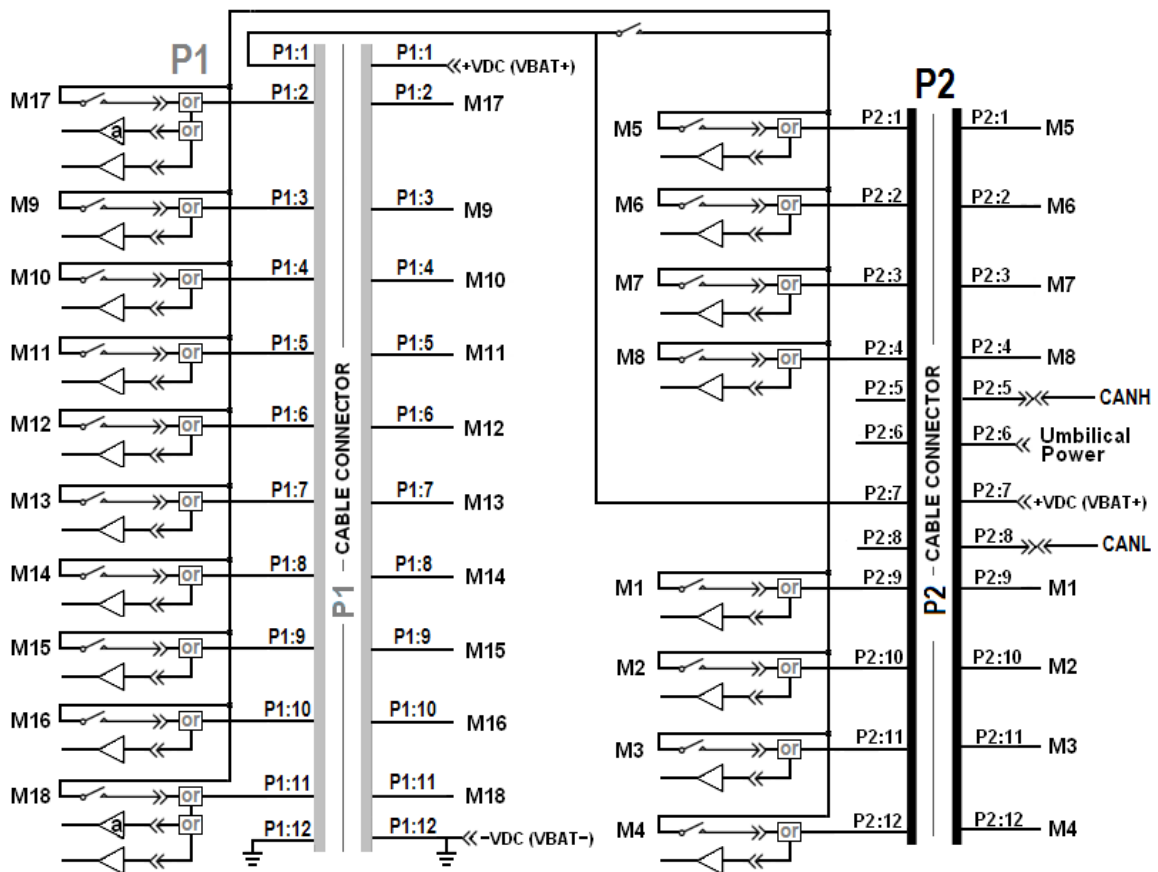
## SmaRT BU-xH18XF Dimensions



## SmaRT BU-xH18XF P1 and P2 Pinout and Wiring

P1 Pin	Assigned	P1 Pin	Assigned
P1:1	+VDC	P1:7	M13
P1:2	M17	P1:8	M14
P1:3	M9	P1:9	M15
P1:4	M10	P1:10	M16
P1:5	M11	P1:11	M18
P1:6	M12	P1:12	-VDC

P2 Pin	Assigned	P2 Pin	Assigned
P2:1	M5	P2:7	+VDC
P2:2	M6	P2:8	CANL
P2:3	M7	P2:9	M1
P2:4	M8	P2:10	M2
P2:5	CANH	P2:11	M3
P2:6	Umbilical PWR	P2:12	M4



## SmaRT BU-xH18XF Options

Name	Freq.	RF Power	Type	Input Power	Serial Port	Analog Channels	Antenna
BU-2H18XF-EXT-CAN	2.4 GHz	100 mW	18 FET	7–28 VDC	CAN	N/A	External
BU-2H18XF-INT-CAN	2.4 GHz	100 mW	18 FET	7–28 VDC	CAN	N/A	Internal
BU-2H18XF-EXT-DIS-CAN	2.4 GHz	100 mW	18 FET	7–28 VDC	CAN	N/A	External
BU-2H18XF-INT-DIS-CAN	2.4 GHz	100 mW	18 FET	7–28 VDC	CAN	N/A	Internal
BU-2H18XF-EXT-DIS-AI2-CAN	2.4 GHz	100mW	18 FET	7–28 VDC	CAN	(2) 4–20 mA IN	External
BU-2H18XF-INT-DIS-AI2-CAN	2.4 GHz	100 mW	18 FET	7–28 VDC	CAN	(2) 4–20 mA IN	Internal
BU-2H18XF-EXT-AI2-CAN	2.4 GHz	100 mW	18 FET	7–28 VDC	CAN	(2) 4–20 mA IN	External
BU-2H18XF-INT-AI2-CAN	2.4 GHz	100 mW	18 FET	7–28 VDC	CAN	(2) 4–20 mA IN	Internal
BU-2H18XF-EXT-DIS-AV2-CAN	2.4 GHz	100 mW	18 FET	7–28 VDC	CAN	(2) 0–10 V IN	External
BU-2H18XF-INT-DIS-AV2-CAN	2.4 GHz	100 mW	18 FET	7–28 VDC	CAN	(2) 0–10 V IN	Internal
BU-2H18XF-EXT-AV2-CAN	2.4 GHz	100 mW	18 FET	7–28 VDC	CAN	(2) 0–10 V IN	External
BU-2H18XF-INT-AV2-CAN	2.4 GHz	100 mW	18 FET	7–28 VDC	CAN	(2) 0–10 V IN	Internal
BU-2H18XF-EXT-SC	2.4 GHz	100 mW	18 FET	7–28 VDC	RS-232	N/A	External
BU-2H18XF-INT-SC	2.4 GHz	100 mW	18 FET	7–28 VDC	RS-232	N/A	Internal
BU-9H18XF-EXT-CAN	900 MHz	10 mW	18 FET	7–28 VDC	CAN	N/A	External
BU-9H18XF-INT-CAN	900 MHz	10 mW	18 FET	7–28 VDC	CAN	N/A	Internal
BU-9H18XF-EXT-DIS-CAN	900 MHz	10 mW	18 FET	7–28 VDC	CAN	N/A	External
BU-9H18XF-INT-DIS-CAN	900 MHz	10 mW	18 FET	7–28 VDC	CAN	N/A	Internal
BU-9H18XF-EXT-DIS-AI2-CAN	900 MHz	10 mW	18 FET	7–28 VDC	CAN	(2) 4–20 mA IN	External
BU-9H18XF-INT-DIS-AI2-CAN	900 MHz	10 mW	18 FET	7–28 VDC	CAN	(2) 4–20 mA IN	Internal
BU-9H18XF-EXT-AI2-CAN	900 MHz	10 mW	18 FET	7–28 VDC	CAN	(2) 4–20 mA IN	External
BU-9H18XF-INT-AI2-CAN	900 MHz	10 mW	18 FET	7–28 VDC	CAN	(2) 4–20 mA IN	Internal
BU-9H18XF-EXT-DIS-AV2-CAN	900 MHz	10 mW	18 FET	7–28 VDC	CAN	(2) 0–10 V IN	External
BU-9H18XF-INT-DIS-AV2-CAN	900 MHz	10 mW	18 FET	7–28 VDC	CAN	(2) 0–10 V IN	Internal
BU-9H18XF-EXT-AV2-CAN	900 MHz	10 mW	18 FET	7–28 VDC	CAN	(2) 0–10 V IN	External
BU-9H18XF-INT-AV2-CAN	900 MHz	10 mW	18 FET	7–28 VDC	CAN	(2) 0–10 V IN	Internal
BU-9H18XF-EXT-SC	900 MHz	10 mW	18 FET	7–28 VDC	RS-232	N/A	External
BU-9H18XF-INT-SC	900 MHz	10 mW	18 FET	7–28 VDC	RS-232	N/A	Internal

✓ **Note:** BU-xH18XF-CAN units are internally terminated at 1.0kΩ. Termination can be removed at the factory.