



# SmaRT DIN-9H1R5 Base Unit User Manual

U082.0.1 DIN-9H1R5

**FCC Statements****15.19 – Two Part Warning**

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

**15.21 – Unauthorized Modification**

**NOTICE:** The manufacturer is not responsible for any unauthorized modifications to this equipment made by the user. Such modifications could void the user's authority to operate the equipment.

**15.105(b) – Note:**

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. The equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

**Industry Canada Statement**

This device complies with Canadian RSS-210.

The installer of this radio equipment must ensure that the antenna is located or pointed such that it does not emit RF field in excess of Health Canada limits for the general population; consult Safety Code 6, obtainable from Health Canada's website [www.hc-sc.gc.ca/ewh-smmt/pubs/radiation/radio\\_guide-lignes\\_direct-eng.php](http://www.hc-sc.gc.ca/ewh-smmt/pubs/radiation/radio_guide-lignes_direct-eng.php).

Cet appareil est conforme à la norme canadienne RSS-210.

L'installateur de cet équipement radio doit s'assurer que l'antenne est située ou dirigée de manière à ne pas émettre un champ RF excédant les limites imposées par Santé Canada pour la population en général; consultez le Code de sécurité 6, disponible sur le site web de Santé Canada [www.hc-sc.gc.ca/ewh-smmt/pubs/radiation/radio\\_guide-lignes\\_direct-eng.php](http://www.hc-sc.gc.ca/ewh-smmt/pubs/radiation/radio_guide-lignes_direct-eng.php).

**Industry Canada Statement**

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

**IC Unlicensed Devices EIRP Statements for Removable Antennas**

**Part 1: Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.**

*Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.*

**Part 2: This radio transmitter (LOBSRF-305) has been approved by Industry Canada to operate with the antenna type listed below with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.**

*Le présent émetteur radio (LOBSRF-305) a été approuvé par Industrie Canada pour fonctionner avec les types d'antenne énumérés ci-dessous et ayant un gain admissible maximal et l'impédance requise pour chaque type d'antenne. Les types d'antenne non inclus dans cette liste, ou dont le gain est supérieur au gain maximal indiqué, sont strictement interdits pour l'exploitation de l'émetteur.*

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Cervis, Inc. reserves the right to change this manual or edit, delete, or modify any information without prior notification.

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## Definitions

### **Associate**

SmaRT configuration method using a series of specific remote unit button presses to establish a communication link between a SmaRT handheld and a SmaRT base unit.

### **Disassociate/Dissociate**

Dissolution of all established communication links between handhelds and a base unit.

### **DSSS**

Direct sequence spread spectrum; an advance wireless communication technology.

### **PTO**

Push to Operate: Command broadcast only while a button is depressed. The command ends when the button is released.

### **DIN-9H1R5**

Base unit with six relay outputs controlled by a SmaRT handheld remote. Each SmaRT DIN-9H1R5 can communicate with up to eight SmaRT remote control units. A DIN-9H1R5 can be mounted on a standard 35mm DIN rail.

### **Line of Sight (aka Direct-Line-of-Sight)**

Type of communication between transceivers, or a transmitter and a receiver, where the pathway between the two units must be clear of obstacles.

### **TX/RX**

Transmit/Receive

### **Snubber (Snubber Circuit)**

Electrical circuit used to suppress electrical spikes (transients) by diverting excess current around the protected device.

### **RS-232**

Low-speed serial interface used for configuration of the base unit.

### **SmaRT Connect**

Cervis software that allows a base unit to be configured through the base unit RS-232 port.

## **Cervix Inc. Safety Precautions**

- ✓ ***Read and follow all instructions.***
- ✓ ***Failure to abide by Safety Precautions may result in equipment failure, loss of authority to operate the equipment, and personal injury.***
- ✓ ***Use and maintain proper wiring. Follow equipment manufacturer instructions. Improper, loose, and frayed wiring can cause system failure, equipment damage, and intermittent operation.***
- ✓ ***Changes or modifications made to equipment not expressly approved by the manufacturer will void the warranty.***
- ✓ ***Owner/operators of the equipment must abide by all applicable Federal, State, and Local laws concerning installation and operation of the equipment. Failure to comply could result in penalties and could void user authority to operate the equipment.***
- ✓ ***Make sure that the machinery and surrounding area is clear before operating. Do not activate the remote control system until certain that it is safe to do so.***
- ✓ ***Turn off the handheld remote and remove power from the base unit before attempting any maintenance. This will prevent accidental operation of the controlled machinery.***
- ✓ ***Power can be removed from the base unit by detaching the input power from the base unit connectors terminal 7 and terminal 8.***
- ✓ ***Use a damp cloth to keep units clean.***
- ✓ ***Do not allow liquid to enter the handheld or base unit enclosures. Do not use high pressure equipment to clean the handheld remote or base unit.***
- ✓ ***Disconnect the base unit before welding on the machine. Failure to disconnect the base unit may result in destruction of or damage to the base unit.***
- ✓ ***Keep high-energy RF devices away from handheld remotes. Activation of high-power communication radios, for instance, in close proximity to the handheld remotes can result in interference and “false” circuit activation.***
- ✓ ***Operate and store units only within the specified operation and storage temperatures defined in the specifications section of this document.***

## 1.0 SmaRT DIN-9H1R5 Base Unit

The SmaRT DIN-9H1R5 Base Unit for industrial control systems features one Form C and five Form A relay outputs. Each Form C relay contact can switch a resistive load of 10A max. @ 250VAC/30VDC. Each Form A is rated at 5A max @ 250VAC/30VDC resistive load and 2A max @ 250VAC/30VDC inductive load. Using Direct Sequence Spread Spectrum (DSSS) wireless technology at 900MHz the base unit provides a robust link with a handheld in congested radio environments at extended ranges. The SmaRT base unit enclosure allows it to be mounted either horizontally or vertically on a standard 35mm DIN rail. Four status/diagnostic LEDs as shown in Figure 1 are used to determine the state of the unit.

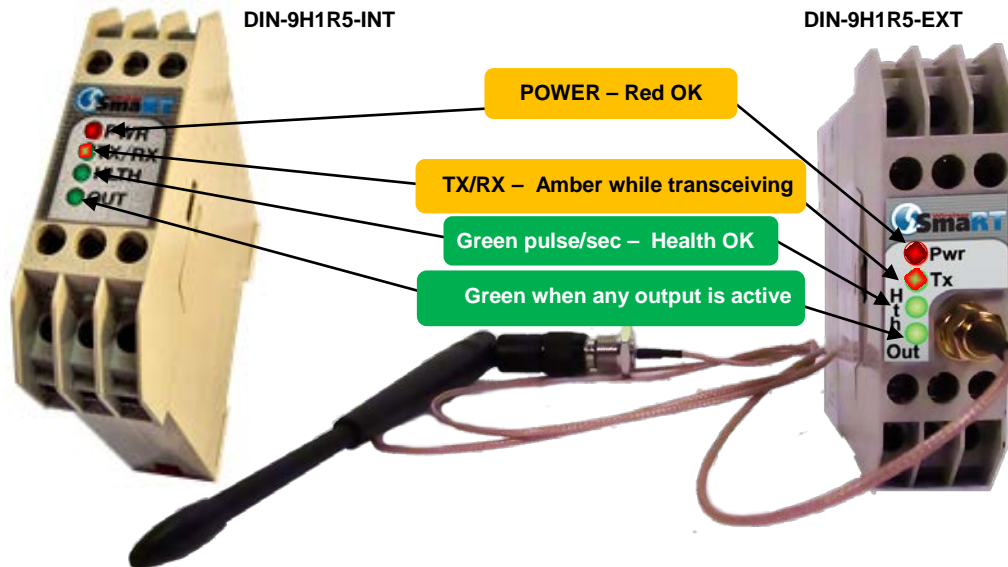


Figure 1. DIN-9H1R5-INT and DIN-9H1R5-EXT LEDs

### DIN-9H1R5 Base Unit Features

- Input power +7 to +32VDC
- 900MHz Direct Sequence Spread Spectrum Technology (DSSS)
- Internal or external antenna
- 1 Form C Relay Contact output, 5 Form A Relay Contact outputs
- DIN enclosure with screw terminal connections
- Can be mounted horizontally or vertically on a standard 35mm DIN rail
- Size M3 (flat or Phillips) screw terminals
- Four LED diagnostic indicators
- Compact design, durable UL94V-0 rated ABS plastic enclosure

## 2.0 Smart DIN-9H1R5 Installation

### CAUTION



Make sure the machine on which the base unit is to control is disabled during installation.

The base unit enclosure and connectors are **NOT** rated for high pressure washing. Doing so could damage the base unit or connectors.

Mounting of the base unit is left much to your discretion with the following guidelines:

- Make sure that the configuration diagrams supplied with the system are available.
- Always mount the receiver away from any intense radio or electric disturbance sources.
- Mount the unit where you have enough room for your wiring connections.

## 2.1 DIN-9H1R5 Base Unit Mounting Dimensions

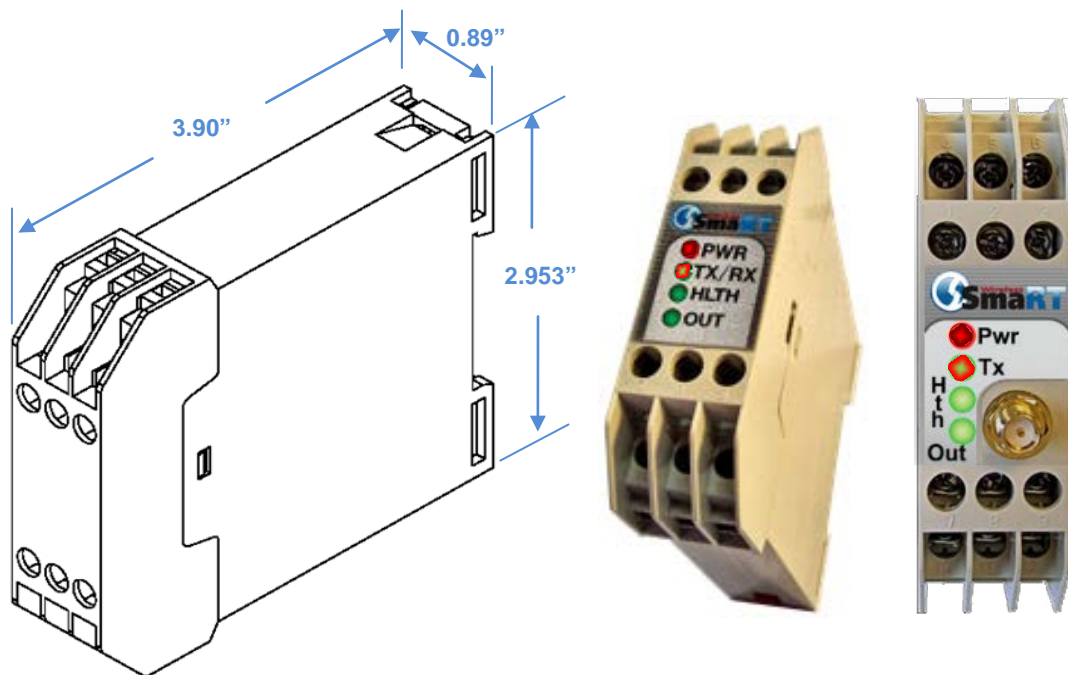
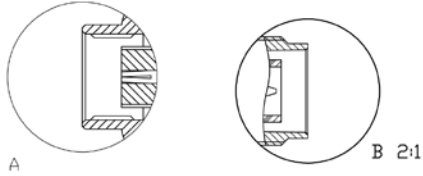


Figure 2. DIN-9H1R5 Base Unit Mounting Dimensions

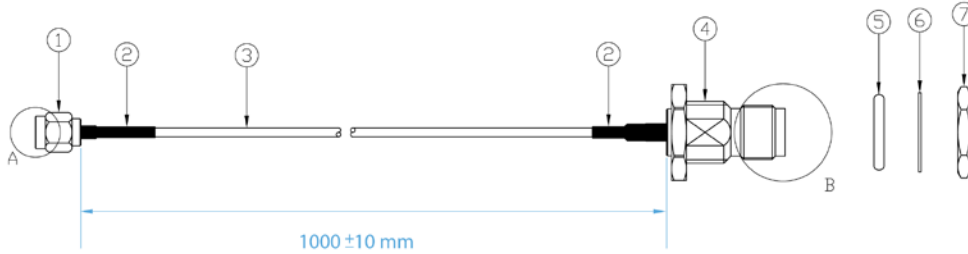
## 2.2 External Antenna Mounting

### DIN-9H1R5 Antenna Extension/Adapter Cable (AA7-07) Dimensions in millimeters



Note: The orientation on drawing is for reference only

NO	DESCRIPTION	Q'TY
07	Nut	1
06	Washer	1
05	O-ring (Black)	1
04	RP TNC bulk Jack with O-ring	1
03	RG178-MIT coaxial cable (Brown)	1
02	Heatshrink (Black)	2
01	RP SMA Straight Plug	1



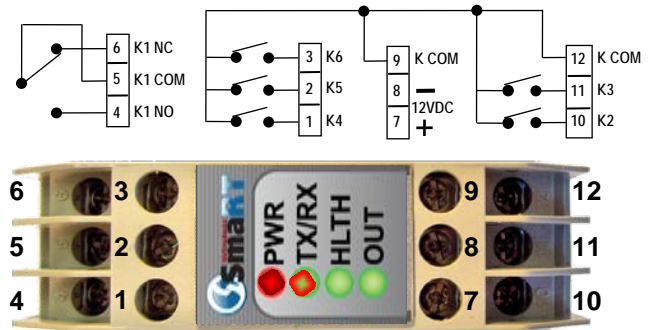
BB3-06 900MHz Antenna and AA7-07 Extension/Adapter

Figure 3. External Antenna Mounting Details



## 2.3 Smart DIN-9H1R5 Terminal Connections

- Terminal 6: K1 Normally Closed
- Terminal 5: K1 Common
- Terminal 4: K1 Normally Open
- Terminal 3: K6
- Terminal 2: K5
- Terminal 1: K4
- Terminal 9: K Common
- Terminal 8: - 12VDC
- Terminal 7: + 12VDC
- Terminal 12: K Common
- Terminal 11: K3
- Terminal 10: K2



✓*Note: Terminal connections for a DIN-9H1R5-INT and a DIN-9H1R5-EXT are identical.*

*Figure 4. DIN-9H1R5-INT and DIN-9H1R5-EXT Terminal Connections*

### 3.0 SmaRT Handheld Remote to DIN-9H1R5 Communications

The DIN-9H1R5 communications link to the system SmaRT remote are established at the factory before a system is shipped. There may be times when it is necessary to establish, re-establish, or break the link in the field. The process used to establish the link is Associate, while the process used to break the link is called Dissociate. Appendix C of this manual describes common Associate and Dissociate procedures for a variety of SmaRT remote control units.

To Associate or Dissociate the DIN-9HR5 to or from a **standard** SmaRT remote control unit, please refer to Appendix C.

✓ **Note:** Custom engineered systems may have a unique way of establishing the communications link between the system remote control unit and the base unit. If you have a customized system and need to Associate or Dissociate, please refer to the custom Engineered System Manual or Engineered Application Specific Supplement document provided with the custom system when shipped.

### 4.0 SmaRT DIN-9H1R5 Variations

Table 1. SmaRT DIN-9H1R5 Variations

Model	Freq.	RF Power	Input Power	Output Type	Serial Port	SmaRT Connect	Antenna Type	AC Suppression
DIN-9H1R5-INT-LVD	900MHz	10mW	7–32VDC	1 Form C, 5 Form A	RS-232	Yes	Internal	No
DIN-9H1R5-EXT-LVD	900MHz	10mW	7–32VDC	1 Form C 5 Form A	RS-232	Yes	External	No

### 5.0 DIN-9H1R5 Antenna and Cable

Table 2. Compatible DIN-9H1R5 External Antenna Details

Part	Cervis #
900MHz IS BAND Swivel Antenna	BB3-06
3ft. antenna extension/adaptor cable RP-SMA Plug to RP-TNC Jack	AA7-07

✓ **Note:** Only the antenna recommended by Cervis, Inc. is to be used with the SmaRT base unit.

## 6.0 SmaRT DIN-9H1R5 Specifications

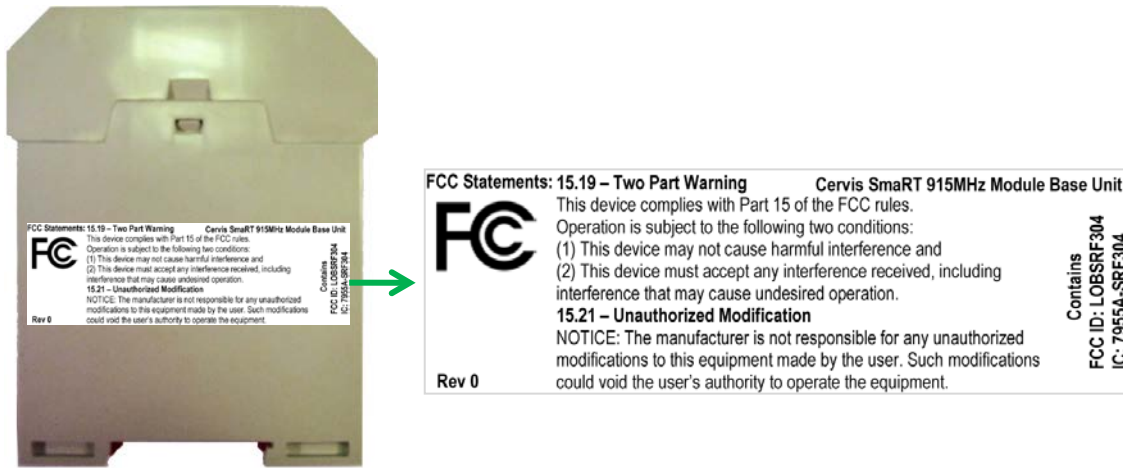
Table 3. SmaRT DIN-9H1R5 Specifications

SmaRT DIN-9H1R5 Specs				
<b>Power</b>	<b>Vin</b>	+7 to +32VDC		
<b>Radio</b>	<b>Frequency</b>	906 – 924MHz		
	<b>RF Power</b>	10mW		
	<b>License</b>	License Free		
	<b>Modulation</b>	DSSS		
	<b>Antenna</b>	Internal or External		
<b>Environment</b>	<b>Operating Temp</b>	-25°C to 60°C (-13°F to 140°F)		
	<b>Storage Temp</b>	-40°C to 85°C (-40°F to 185°F)		
	<b>Humidity</b>	0 to 95% non-condensing		
<b>Indicators (4)</b>	<b>Out</b>	Green – Output Active		
	<b>Health</b>	Green – Pulse/sec. OK Red or Amber/sec. Fault		
	<b>TX/RX</b>	Green – Transmit Red – Receive		
	<b>Power</b>	Red – OK		
<b>Enclosure</b>	<b>Dimensions</b>	22.6mm x 82mm x 99mm (0.89" x 3.23" x 3.90")		
	<b>Durability</b>	Durable UL94V-0 rated ABS plastic		
	<b>Mounting</b>	35mm standard DIN rail		
	<b>Weight</b>	4 ounces (0.114 kilogram)		
<b>Outputs (6)</b>	<b>One</b>	Relay, Form C		
	<b>Five</b>	Relays, Form A		
	<b>Form C Rating</b>	10A max. @ 250VAC/30VDC resistive load		
	<b>Form A Rating</b>	5A max. @ 250VAC/30VDC resistive load 2A max. @ 250VAC/30VDC inductive load		
	<b>Total</b>	20A max. using both wetting terminals		
<b>Terminals</b>	<b>Assignments</b>	Term 1:K4	Term 2:K5	Term 3:K6
		Term4:K1 NO	Term 5:K1 common	Term 6:K1 NC
		Term 7: +12VDC	Term 8: – 12VDC	Term 9:K common
		Term 10:K2	Term 11:K3	Term 12:K common

## Appendix A: Exposure to Radio Frequency Energy

A SmaRT base unit when active sends out radio frequency (RF) through its external antenna. Base units using an external antenna should be mounted to ensure the antenna is at least 20cm away from the human body. Only the external antenna recommended by Cervis, Inc. is to be used (see Table 2).

## Appendix B: Agency Identification Label Location



✓ *Note: The base unit label position is identical for both internal antenna and external antenna base units.*

Figure 5. Agency Identification Label Locations

## Appendix C: Typical Handheld to Base Unit Communication

Handheld remote and base unit communications are established at Cervis before shipping when systems are ordered. However, it may be necessary to establish or re-establish communication between a remote and a base unit at some point. The Associate procedure is used to do this.

A standard Smart System consists of one handheld remote and one base unit. Each base unit is capable of communicating with up to eight handheld remotes. Each handheld must first establish a communications link with the base unit before the base unit will recognize the handheld unit. This process is called Associate.

In some cases it may become necessary to break the communication link between the handheld and the DIN-9H1R5. This process is called Dissociate. *Be aware that when a handheld is dissociated from a base unit, all communication links to that particular base unit are erased from the base unit memory!* For instance, a particular DIN-9H1R5 is associated to Handheld Remotes 1 through 5. Remote 2 dissociates—breaks the communication link—from the base unit. All five handheld remotes are removed from the base unit memory. The Associate procedure must be used by any handheld that now needs to control that DIN-9H1R5.

The following Associate and Dissociate procedures are general methods of associating or dissociating Cervis handheld remotes to the DIN-9H1R5. Custom systems may have different Associate methods unique to the custom system design in which case the documentation provided for that system must be referenced for the appropriate Associate procedure.

### C1: DIN-9H1R5/PTO Remote Communication

#### To Associate

The base unit and handheld must be OFF prior to attempting to associate. Base unit and PTO 2, 4, and 6 button handheld association is established using the following steps:

1. Remove power from the base unit and turn off (PTO – time out) the hand-held device.
2. Stand near the base unit in unobstructed, clear line-of-sight with the handheld in hand.
3. Simultaneously press and hold the Associate (B1) and Dissociate (B2) buttons. RX and ER light.
4. Continue to hold both buttons until TX and RX light steady.
5. When TX and RX light, release B1 and B2. ER and BA light.

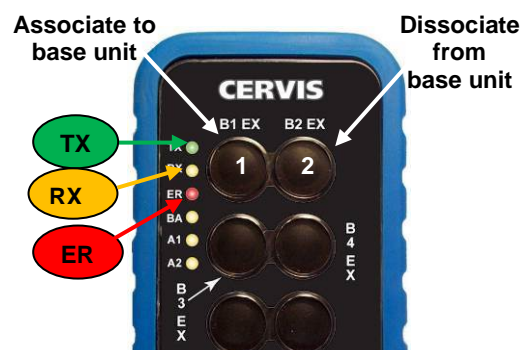
✓ **Note:** *If the next button press is not immediately performed (approximately 2sec.), all LEDs flash and the Associate procedure is aborted. The process must be started anew to establish the communication link.*

6. Immediately press and hold the Associate button (B1). All LEDs light.
7. TX begins to slowly blink. Continue to hold B1.
8. Apply power to the base unit.

The handheld and base unit begin to establish a communication link while the Associate button is held. Once the process is complete, all LEDs light briefly and then go out.

9. Release the Associate button. The Smart System is ready for use with that particular handheld remote.

**Figure 6. Associate/Dissociate Buttons**



## To Dissociate

In some circumstances it may become necessary to break the communication link, or dissociate a base unit and a PTO handheld remote.

### CAUTION



Using the following steps will break all previously established handheld remote links. It will be necessary to perform the Association Procedure (Heading 0 above) using each handheld to re-establish communication links with a base unit.

1. Remove power from the base unit.
2. Stand near the base unit in line of sight with the handheld in your hand.
3. Press and hold both Associate (Button 1) and Dissociate (Button 2; see Figure 6). RX and ER light.
4. Continue to hold both buttons until TX and RX light steady.
5. When TX and RX light, release B1 and B2. ER and BA light.

✓ **Note:** *If the next button press is not performed within the two second interval all LEDs flash and the procedure is aborted. The process must be started anew to break the communication link.*

6. Press and hold the Dissociate button B2. (See Figure 6 above.) All LEDs light.
7. TX begins to slowly blink. Continue to hold B2.
8. Apply power to the base unit while continuing to hold the Dissociate button.

The base unit and all previously linked handhelds begin to Dissociate communication links. Once the process is complete, all LEDs light briefly and then go out.

9. Release the Dissociate button.

The SmaRT base unit will not communicate with any handheld remote units. A handheld remote must use the Association Procedure (Heading 0 above) to re-establish a communication link with the base unit.

## C2: DIN-9H1R5/CB Remote Communication

### CAUTION



**To prevent inadvertent movement of the machine, be sure to remove power from the Base Unit before attempting to Associate or Dissociate.**

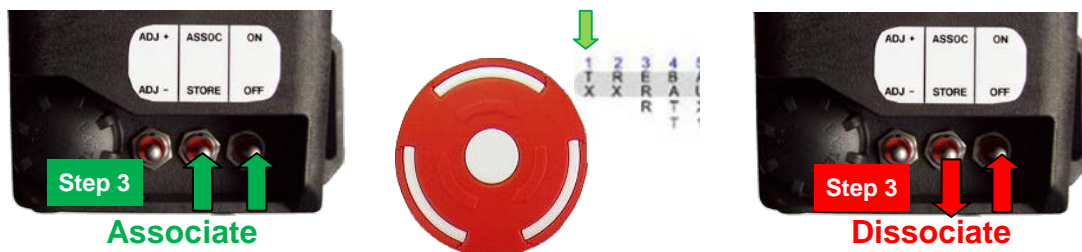
The console remote must be **OFF** and the base unit must have power removed before the Association process can be started.

✓ **Note:** The Machine Stop button must be in the UP position prior to activating and using the console remote.

### To Associate (see Figure 7)

1. Stand near the base unit with the console remote OFF and power removed from the base unit (P1 and P2 cables detached from the base unit, or the power source is removed.)
2. Twist to pull UP the red Stop button on the remote.
3. Hold the Associate switch SW13 UP. While holding the Associate switch UP, activate the console remote by holding switch SW12 UP (ON). Continue to hold both switches.
4. Observe the LEDs. When TX begins to blink, power up the base unit while continuing to hold SW13 and SW12. When TX, RX, ERR, and BAT light solid, release SW13 and SW12.

A successful association is indicated when LEDs **TX** and **RX** are rapidly blinking in unison.



**Figure 7. Associate and Dissociate Switch Actuations**

### To Dissociate (see Figure 7)

The CB remote must be **OFF** and the base unit must have power removed before the Dissociation process can be started.

✓ **Note:** The Machine Stop button must be in the UP position prior to activating and using the console remote.

1. Stand near the base unit with the console remote OFF and power removed from the base unit (P1 and P2 cables detached from the base unit, or the power source is removed.)
2. Twist to pull UP the red Stop button on the remote.
3. Hold the Associate switch SW13 DOWN. While holding the Associate switch DOWN, activate the console remote by holding switch SW12 UP (ON). Continue to hold both switches.
4. Observe the LEDs. When TX begins to blink, power up the base unit while continuing to hold SW13 and SW12. When TX, RX, ERR, and BAT light solid, release SW13 and SW12.

✓ **Note:** Be aware that all remote associations to the base unit are now broken.



### C3: DIN-9H1R5/MCB Remote Communication

**CAUTION**



To prevent inadvertent movement of the machine, be sure to remove power from the Base Unit before attempting to Associate or Dissociate.

#### To Associate (see Figure 8)

The MCB remote must be **OFF** and the base unit must have power removed before the Association process can be started.

✓ **Note:** The Machine Stop button must be in the UP position prior to activating and using the console remote.

1. Stand near to the base unit with the remote **OFF** and **power removed** from the base unit (disconnect P1 and P2 or turn the source power OFF).
2. Release the **STOP** button on the MCB handheld by pulling up.
3. Push and hold **S1 UP** and then press the **Power ON** button. All four LEDs light solid.
4. Observe the LEDs. When TX begins to blink, power up the base unit while continuing to hold S1 and the Power button. When all four LEDs light solid, release S1 and Power Button.

A successful Association is indicated when LEDs TX and RX are rapidly blinking in unison.



Figure 8. MCB Switch Actuation for Associate and Dissociate



### To Dissociate (see Figure 8)

The MCB remote must be **OFF** and the base unit must have power removed before the Dissociation process can be started.

✓ **Note:** The Machine Stop button must be in the UP position prior to activating and using the console remote.

1. Stand near to the base unit with the remote **OFF** and **power removed** from the base unit (disconnect P1 and P2 or turn the source power OFF).
2. Release the **STOP** button on the MCB handheld by pulling up.
3. Push and hold **S1 DOWN** and then press the **Power ON** button. All four LEDs light solid.
4. Observe the LEDs. When TX begins to blink, power up the base unit while continuing to hold SW1 and the Power button. When all four LEDs light solid, release SW1 and the pushbutton.

✓ **Note:** Be aware that all remote associations to the base unit are now broken.

## C4: DIN-9H1R5/PG Remote Communication

**CAUTION**



To prevent inadvertent movement of the machine, be sure to remove power from the Base Unit before attempting to Associate or Dissociate.

### To Associate (See Figure 9).

The PG remote must be **OFF** and the base unit must have power removed before the Association process can be started.

✓ **Note:** The Machine Stop button must be in the UP position prior to activating and using the console remote.

1. Stand near to the base unit with the remote **OFF** and **power removed** from the base unit (disconnect P1 and P2 or turn the source power OFF).
2. Release the **STOP** button on the PG handheld by twisting and pulling up.
3. Push and hold **SW1 UP** and **SW7 UP**. All four LEDs light solid.
4. Observe the LEDs. When TX begins to blink, power up the base unit while continuing to hold SW1 and SW7. When all four LEDs light solid, release SW1 and SW7.

A successful association is indicated when LEDs TX and RX are rapidly blinking in unison.



Figure 9. PG Switch Actuation for Associate and Dissociate

### To Dissociate (see Figure 9)

The PG remote must be **OFF** and the base unit must have power removed before the Dissociation process can be started.

✓ **Note:** The Machine Stop button must be in the UP position prior to activating and using the console remote.

1. Stand near to the base unit with the remote **OFF** and **power removed** from the base unit (disconnect P1 and P2 or turn the source power OFF).
2. Release the **STOP** button on the PG handheld by twisting and pulling up.
3. Push and hold **SW1 UP** and **SW7 DOWN**. All four LEDs light solid.
4. Observe the LEDs. When TX begins to blink, power up the base unit while continuing to hold SW1 and SW7. When all four LEDs light solid, release SW1 and SW7.

✓ **Note:** Be aware that all remote associations to the base unit are now broken.

## C5: DIN-9H1R5/XX-218 Remote Communication

### CAUTION



*To prevent inadvertent movement of the machine, be sure to remove power from the Base Unit before attempting to Associate or Dissociate.*

### To Associate (see Figure 10)

Associate mode is used to establish the communications link between the 18-button handheld remote and base unit on a 1-to-1 basis.

To Associate:

- there must be a clear line of sight between the handheld and the base
- the handheld must be near the base unit—within 6’—and
- both units must be OFF (powered down).

The 18-button handheld is turned off by pressing its OFF button when the unit is ON, or by allowing the unit to time-out. Off is indicated when none of the LEDs are active when any function button is pressed. The SmaRT base unit is safely powered down by disconnecting the power source from the unit.



*Figure 10. XX-218 Associate Mode*

✓ **Note:** *Observe LED states while performing the following procedure.*

1. Remove power from the base unit and turn off the handheld.
2. Stand near the base unit with the handheld in a clear, unobstructed line-of-sight.
3. Press and hold **button 2**, then press and hold **button 1**. Both buttons should be held simultaneously.
4. Wait until the amber LED2 goes out. Release the two buttons being held.
5. Press and release B16. The GREEN LED1 and the RED LED3 turn **ON**.
6. Power up the base unit.

If the Association is successful, the AMBER LED2 will flash. If communications are not established following the Associate procedure, please repeat until communication between the handheld and base unit is achieved.

To Dissociate (see Figure 11)



Figure 11. XX-218 Dissociate Mode

✓ **Note:** Observe LED states while performing the following procedure.

1. Remove power from the base unit and turn off the handheld.
2. Stand near the base unit with the handheld in a clear, unobstructed line-of-sight.
3. Press and hold **button 2**, then press and hold **button 1**. Both buttons should be held simultaneously.
4. Wait until the amber LED2 goes out. Release the two buttons being held.
5. Press and release B17. The GREEN LED1 and the RED LED3 turn **ON**.
6. Power up the base unit.

If dissociation is successful, green LED1 on the handheld remote will continually flash (TX) indicating that the handheld and the base unit are not communicating

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