OMNTEC
Advanced Tank Monitoring & Leak Detection

1. Open the camera app
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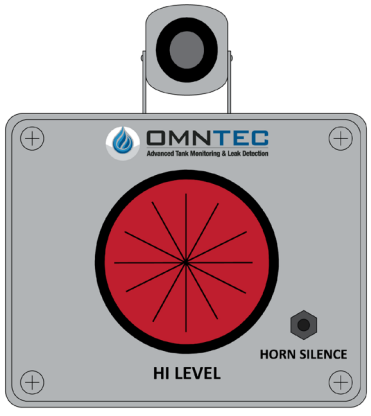
RAS SERIES

WIRING INSTRUCTIONS



REMOTE OVERFILL ANNUNCIATORS

Revision 1.2

Document No. DI00001

OMNTEC Mfg., Inc. has been certified by DQS Inc. to ISO 9001:2015

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This document refers to wiring OMNTEC RAS-Series remote annunciators to either PROTEUS® OEL8000III-K or OEL8000-X Series ATG controllers.

NOTE: Your PROTEUS controller will have an MCU board which may have either 5 or 3 onboard relays.

5-RELAY PROTEUS MCU BOARD

PROTEUS controllers, with 5 MCU relays, will have one, 10-pin, J16 connector at the top of the MCU board, above the 5 relays. J16 is imprinted on the MCU just below the connector. To the left of the J16 is an additional 4-pin, J17 connector. J17 is imprinted on the MCU just below this connector.
(See Figure 1A; red rectangle)

If you have this PROTEUS 5-relay MCU controller, refer to section 1 wiring (page 3) within this document.

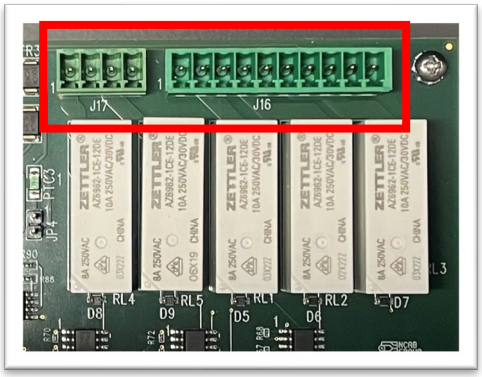

Figure 1A

3-RELAY PROTEUS MCU BOARD
(Low-Current Relay Board)

Older PROTEUS controllers, with 3 MCU relays, will have one, 10-pin, J9 connector at the top of the MCU board, above the 3 relays. J9 is imprinted on the MCU just to the right of the connector.
(See Figure 1B; red rectangle)

The 10-pin connector on all PROTEUS MCU boards, regardless of the J9 or J16 imprint, are the same connector.

If you have this PROTEUS 3-relay MCU controller, refer to section 2 wiring (page 7) within this document.

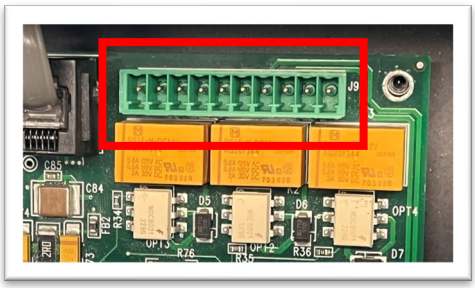

Figure 1B

3-RELAY PROTEUS MCU BOARD
(High-Current Relay Board)

Some PROTEUS controllers, with 3 MCU relays, will have one, 10-pin, J16 connector at the top of the MCU board, above the 3 relays. J16 is imprinted on the MCU just below the connector.
(See Figure 1C; red rectangle)

There is also a J17 imprint on the MCU (to the left of the J16 connector) without the J17 connector.

If you have this PROTEUS 3-relay MCU controller, refer to section 2 wiring (page 7) within this document.

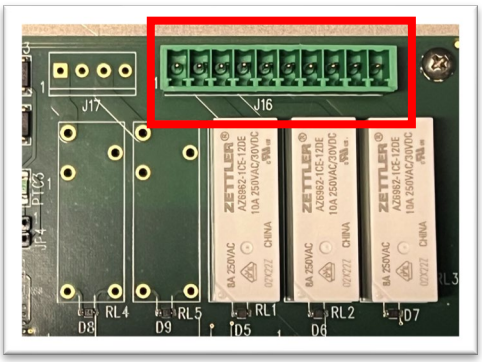

Figure 1C

SECTION 1 - RAS WIRING TO A PROTEUS® WITH A 5-RELAY MCU BOARD

IMPORTANT - Review programming of the ATG to ensure proper RAS remote annunciator functionality.

Refer to the PROTEUS System Programming Manual, **DOC00008**, (from www.omntec.com) regarding **interface board & relay programming**.

DO NOT INSTALL RAS SERIES REMOTE ANNUNCIATORS IN HAZARDOUS LOCATIONS.

1. IMPORTANT - Review Before Wiring Remote Annunciator

a) Bring the remote annunciator cable into the remote annunciator via conduit.

b) Make the wiring connections. See **1.2.2** and **1.2.1** for MCU J16 (10-pin) and J17 (4-pin) connectors. These connectors sit side-by-side at the top of the MCU board near the relays.

c) **Ground (GND) jumpers, as detailed in the document, must be installed or the RAS Series remote annunciator will not operate properly.**

d) Wire descriptions in this document are based on the color coding used by the RAS remote annunciators. If you are using a cable with a different color code, refer to the notes you made when you spliced the annunciator wires to the cable wires.

e) Ensure that the conduit connection is watertight.

f) **Please check the rules, regulations and laws of your local government if the tank(s) require its own independent light.**

2. Remote Annunciator Connections at the Controller

At a minimum, the optional remote annunciators (RAS Series) require #22 AWG, low-voltage, communication wire. Use part number **EC-6** (6-conductor cable) for RAS-1 (5-wire), and RAS-2 (6-wire) remote annunciators. Use part number **EC-12** (12-conductor cable) for RAS-3 (7-wire), and RAS-4 (8-wire) remote annunciators.

MCU J17
4-Pin Connector Pinout

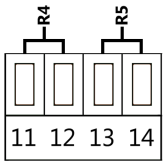

Figure 1.2.1

MCU J16
10-Pin Connector Pinout

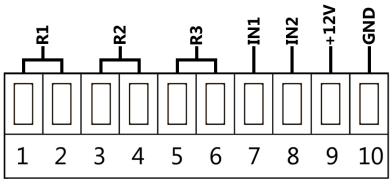

Figure 1.2.2

MCU J16 and J17 Connector Jumper Wiring when used with an RAS Remote Annunciator

(refer to **Figure 1.2.3** and **Table 1.2.1)**

IMPORTANT: Ground (GND) jumpers, as detailed in this document, must be installed or the RAS Series remote annunciator will not operate properly.

RAS-4 High-Level Alarm Wiring:

Individual RAS-4 wiring (see **Figure 1.2.3** and **Table 1.2.1**) for a 4-tank application. Additional wiring configurations on the following pages.

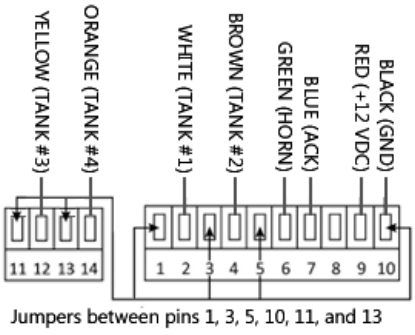

Figure 1.2.3

	MCU J16 Pin No.	Wire	Designation
R1	1		Jumper to Ground (GND)
	2	WHITE	LED for Tank #1
R2	3		Jumper to Ground (GND)
	4	BROWN	LED for Tank #2
R3	5		Jumper to Ground (GND)
	6	GREEN	Horn Alarm
	7	BLUE	Horn Silence (Acknowledge) Switch
	8		
	9	RED	12 VDC
	10	BLACK	Ground (GND)
	MCU J17 Pin No.	**Wire**	**Designation**
R4	11		Jumper to Ground (GND)
	12	YELLOW	LED for Tank #3
R5	13		Jumper to Ground (GND)
	14	ORANGE	LED for Tank #4

Table 1.2.1

3. Remote Annunciator Wiring Configurations

Each LED corresponds to a specific tank number (1-4). If multiple remote annunciators are used, then adjust the tank numbers to reflect LED/tank relationship. For example, if four RAS-1 annunciators are being used, the LED wire (white) from one remote annunciator is designated to Tank #1. The other LED wires (white) from the second, third, and fourth annunciators are designated to Tank #2, #3, and #4. Keep a record indicating the connectivity between LEDs and tank numbers.

3.1. RAS-1 and RAS-1-NYS

A. Common High-Level Alarm Wiring (refer to **Figure 1.3.1** and **Table 1.3.1**)

At Alarm Acknowledgement:

- Horn = Turns "OFF"
- Light = Stays "OFF"

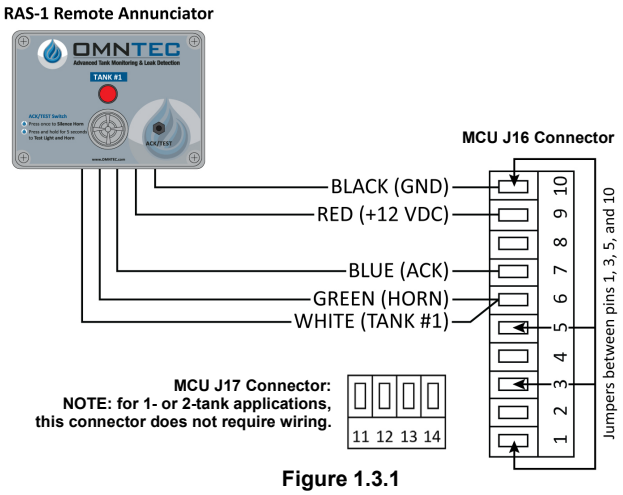

Figure 1.3.1

RAS-1 COMMON ALARM WIRING DIAGRAM			
	MCU J16 Pin #	**Wire Color**	**Designation**
R1	1		Jumper to Ground (GND)
	2		Unused
R2	3		Jumper to Ground (GND)
	4		Unused
R3	5		Jumper to Ground (GND)
	6	GREEN	Horn Alarm
		WHITE	LED for Tank #1
	7	BLUE	Horn Silence (Acknowledge) Switch
	8		UNUSED
	9	RED	+12 VDC
	10	BLACK	Ground (GND)
	MCU J17 Pin #	**Wire Color**	**Designation**
R4	11	N/A	N/A
	12	N/A	N/A
R5	13	N/A	N/A
	14	N/A	N/A

Table 1.3.1

B. Individual High-Level Alarm Wiring (refer to **Figure 1.3.2** and **Table 1.3.2**)

At Alarm Acknowledgement:

- Horn = Turns "OFF"
- Light = Stays "ON"

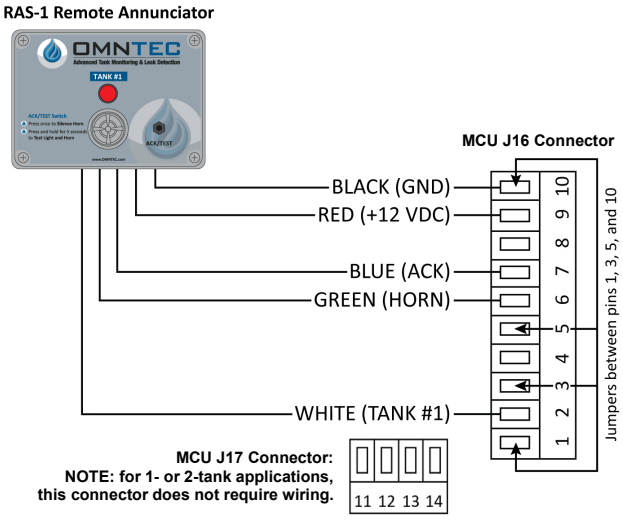

Figure 1.3.2

RAS-1 INDIVIDUAL ALARM WIRING DIAGRAM			
	MCU J16 Pin #	**Wire Color**	**Designation**
R1	1		Jumper to Ground (GND)
	2	WHITE	LED for Tank #1
R2	3		Jumper to Ground (GND)
	4		Unused
R3	5		Jumper to Ground (GND)
	6	GREEN	Horn Alarm
			Unused
	7	BLUE	Horn Silence (Acknowledge) Switch
	8		UNUSED
	9	RED	+12 VDC
	10	BLACK	Ground (GND)
	MCU J17 Pin #	**Wire Color**	**Designation**
R4	11	N/A	N/A
	12	N/A	N/A
R5	13	N/A	N/A
	14	N/A	N/A

Table 1.3.2

3.2. RAS-2 High-Level Alarm Wiring (refer to **Figure 1.3.3** and **Table 1.3.3**) *Same applies when using (2) RAS-1-NYS*

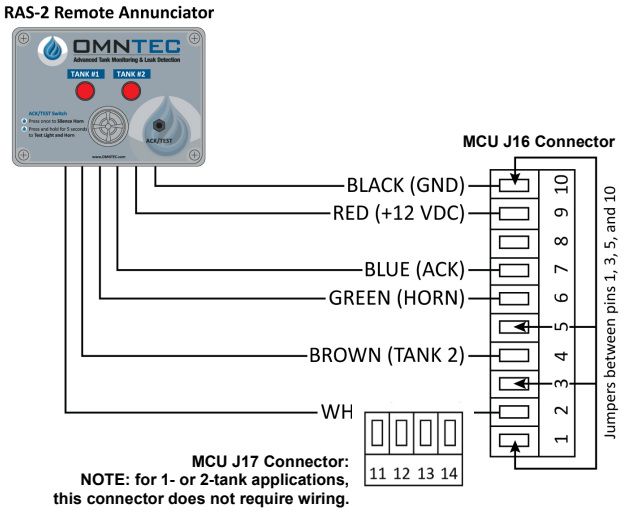

Figure 1.3.3

RAS-2 INDIVIDUAL ALARM WIRING DIAGRAM			
	MCU J16 Pin #	**Wire Color**	**Designation**
R1	1		Jumper to Ground (GND)
	2	WHITE	LED for Tank #1
R2	3		Jumper to Ground (GND)
	4	BROWN	LED for Tank #2
R3	5		Jumper to Ground (GND)
	6	GREEN	Horn Alarm
			Unused
	7	BLUE	Horn Silence (Acknowledge) Switch
	8		UNUSED
	9	RED	+12 VDC
	10	BLACK	Ground (GND)
	MCU J17 Pin #	**Wire Color**	**Designation**
R4	11	N/A	N/A
	12	N/A	N/A
R5	13	N/A	N/A
	14	N/A	N/A

Table 1.3.3

3.3 RAS-3 High-Level Alarm Wiring (refer to **Figure 1.3.4** and **Table 1.3.4**)

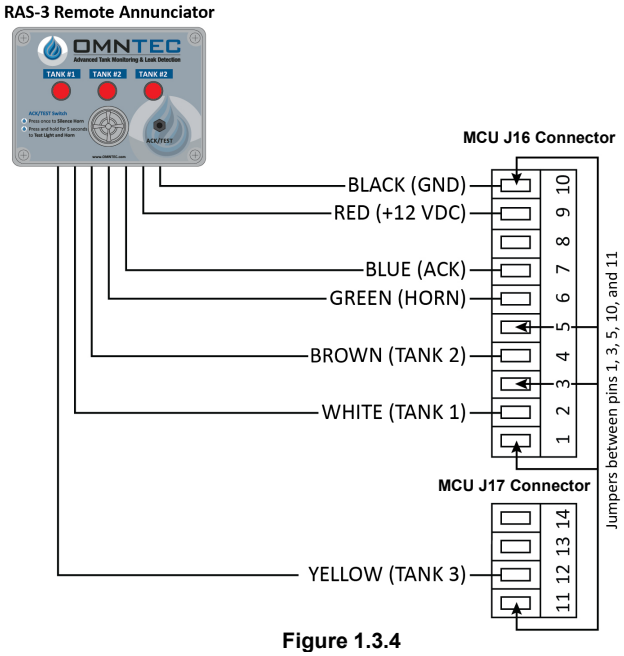

Figure 1.3.4

RAS-3 INDIVIDUAL ALARM WIRING DIAGRAM			
	MCU J16 Pin #	**Wire Color**	**Designation**
R1	1		Jumper to Ground (GND)
	2	WHITE	LED for Tank #1
R2	3		Jumper to Ground (GND)
	4	BROWN	LED for Tank #2
R3	5		Jumper to Ground (GND)
	6	GREEN	Horn Alarm
			Unused
	7	BLUE	Horn Silence (Acknowledge) Switch
	8		UNUSED
	9	RED	+12 VDC
	10	BLACK	Ground (GND)
	MCU J17 Pin #	**Wire Color**	**Designation**
R4	11		Jumper to Ground (GND)
	12	YELLOW	LED for Tank #3
R5	13	N/A	N/A
	14	N/A	N/A

Table 1.3.4

3.4 RAS-4 High-Level Alarm Wiring (refer to **Figure 1.2.3** and **1.2.1**; page 3)

3.5. Multiple Remote Annunciators

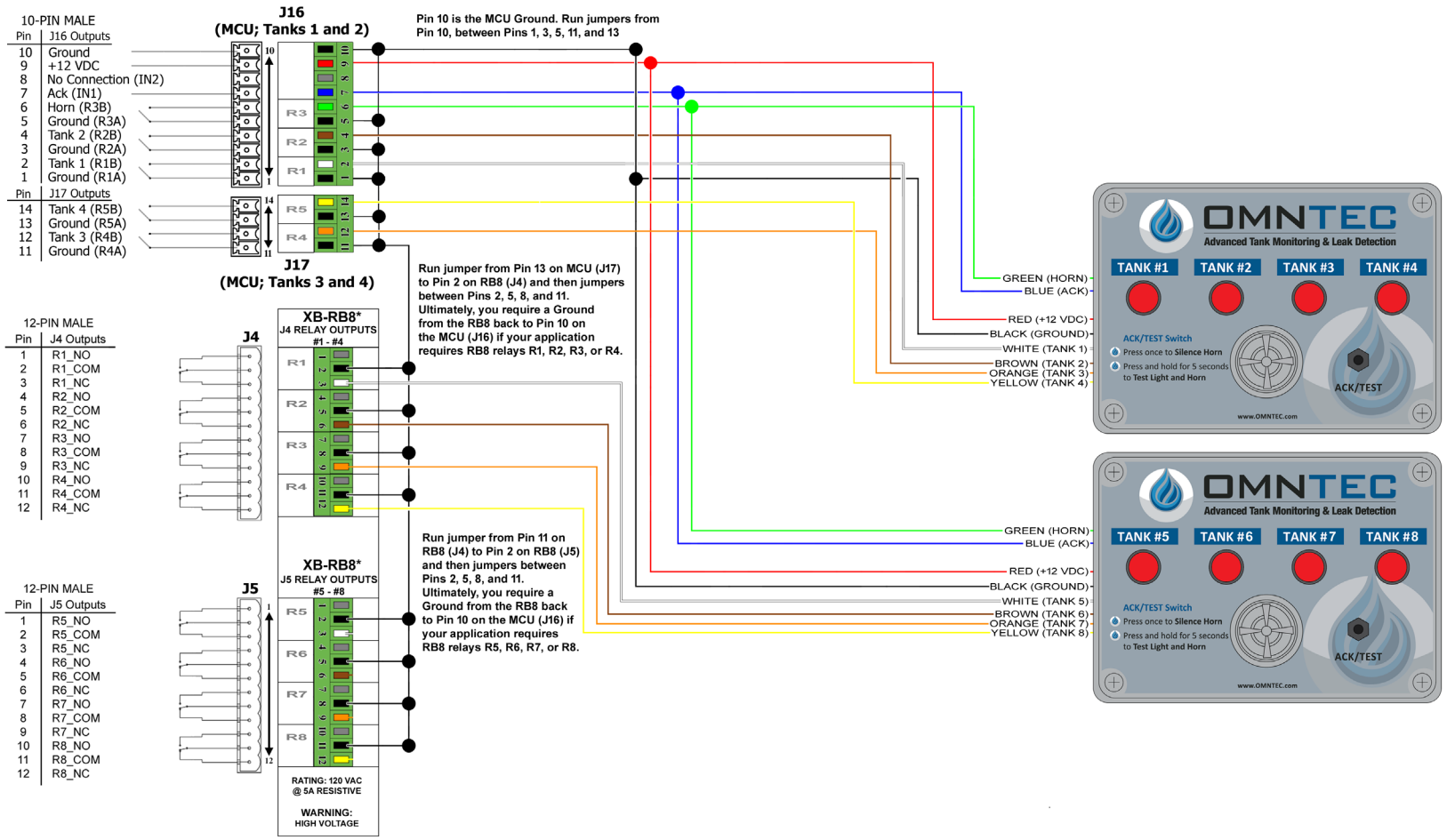

Figure 1.3.5

SECTION 2 - RAS WIRING TO A PROTEUS® WITH A 3-RELAY MCU BOARD

IMPORTANT - Review programming of the ATG to ensure proper RAS remote annunciator functionality.

Refer to the PROTEUS System Programming Manual, **DOC00007**, (from www.omntec.com) regarding **interface board & relay programming**.

DO NOT INSTALL RAS SERIES REMOTE ANNUNCIATORS IN HAZARDOUS LOCATIONS.

1. Important - Review Before Wiring Remote Annunciator

a) Bring the remote annunciator cable into the remote annunciator via conduit.

b) Make the wiring connections. (See **Figure 2.2.1** and **2.2.2** for MCU J9 connector)

c) **NOTE: Ground (GND) jumpers, as detailed in this document, must be installed or the RAS Series remote annunciator will not operate properly.**

d) Wire descriptions are based on the color coding used by the annunciators. If you are using a cable with a different color code, refer to the notes you made when you spliced the annunciator wires to the cable wires.

e) Ensure that the conduit connection is watertight.

f) **Please check the rules, regulations and laws of your local government if the tank(s) require its own independent light.**

2. Remote Annunciator Connections at the Controller

At a minimum, the optional Remote Annunciators (RAS Series) require #22 AWG low-voltage communication wire. Use part number **EC-6** (6-conductor cable) for RAS-1 (5-wire) and RAS-2 (6-wire) remote annunciators.

MCU J9 Connector Pinout

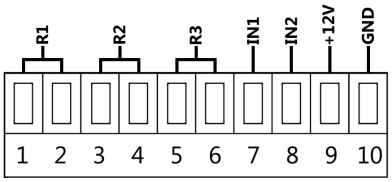

Figure 2.2.1

MCU J9 Connector Jumper Wiring when used with an RAS Remote Annunciator

(refer to **Figure 2.2.2** and **Table 2.2.1**, Individual RAS-1 Wiring shown, additional wiring configurations on following pages)

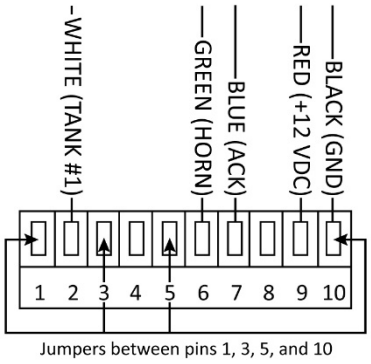

Figure 2.2.2

	MCU J9 Pin No.	Wire	Designation
R1	1		Jumper to Ground (GND)
	2		
R2	3		Jumper to Ground (GND)
	4		
R3	5		Jumper to Ground (GND)
	6	GREEN	Horn Alarm
	7	BLUE	Horn Silence (Acknowledge) Switch
	8		
	9	RED	12 VDC
	10	BLACK	Ground (GND)

Table 2.2.1

3. Remote Annunciator Wiring Configurations

Each LED corresponds to a specific tank number (1-2). If multiple remote annunciators are used, then adjust the tank numbers to reflect LED/tank relationship. For example, if two RAS-1 annunciators are being used, the LED wire (white) from one remote annunciator is designated to Tank #1 and the other LED wire (white) from the second annunciator is designated to Tank #2. Keep a record indicating the connectivity between LEDs and tank numbers.

3.1. RAS-1 and RAS-1-NYS

A. Common High-Level Alarm Wiring (refer to **Figure 2.3.1** and **Table 2.3.1**)

At Alarm Acknowledgement:

- Horn = Turns "OFF"
- Light = Stays "OFF"

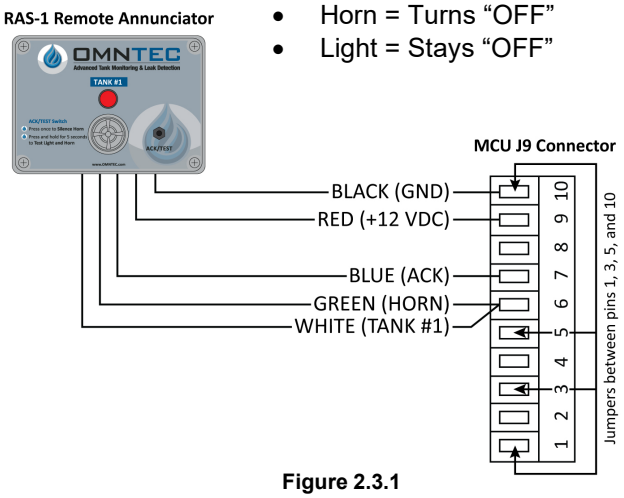

Figure 2.3.1

RAS-1 COMMON ALARM WIRING DIAGRAM			
	MCU J9 Pin #	Wire Color	Designation
R1	1		Jumper to Ground (GND)
	2		Unused
R2	3		Jumper to Ground (GND)
	4		Unused
R3	5		Jumper to Ground (GND)
	6	GREEN	Horn Alarm
		WHITE	LED for Tank #1
	7	BLUE	Horn Silence (Acknowledge) Switch
	8		UNUSED
	9	RED	+12 VDC
	10	BLACK	Ground (GND)

Table 2.3.1

B. Individual High-Level Alarm Wiring (refer to **Figure 2.3.2** and **Table 2.3.2**)

At Alarm Acknowledgement:

- Horn = Turns "OFF"
- Light = Stays "ON"

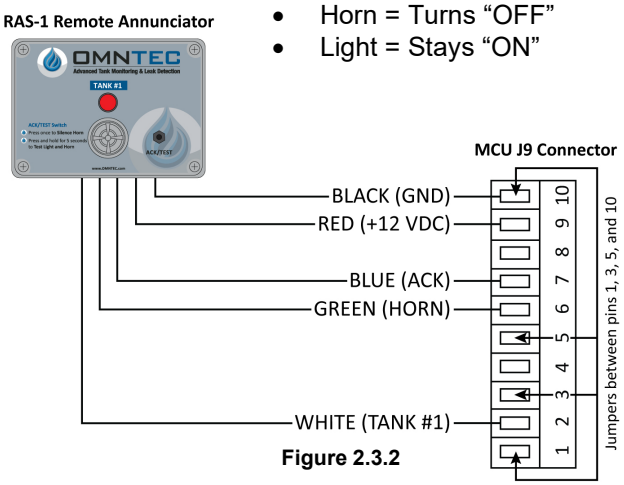

Figure 2.3.2

RAS-1 INDIVIDUAL ALARM WIRING DIAGRAM			
	MCU J9 Pin #	Wire Color	Designation
R1	1		Jumper to Ground (GND)
	2	WHITE	LED for Tank #1
R2	3		Jumper to Ground (GND)
	4		Unused
R3	5		Jumper to Ground (GND)
	6	GREEN	Horn Alarm
	7	BLUE	Horn Silence (Acknowledge) Switch
	8		UNUSED
	9	RED	+12 VDC
	10	BLACK	Ground (GND)

Table 2.3.2

3.2. RAS-2 High-Level Alarm Wiring (refer to **Figure** and **Table 2.3.3**) *Same applies when using (2) RAS-1-NYS*

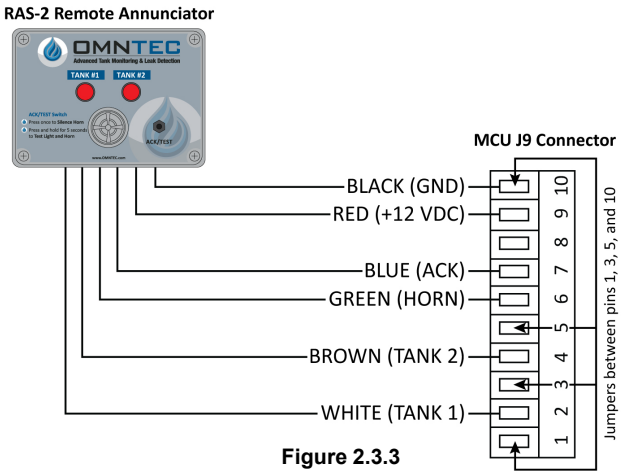

Figure 2.3.3

RAS-2 INDIVIDUAL ALARM WIRING DIAGRAM			
	MCU J9 Pin #	Wire Color	Designation
R1	1		Jumper to Ground (GND)
	2	WHITE	LED for Tank #1
R2	3		Jumper to Ground (GND)
	4	BROWN	LED for Tank #2
R3	5		Jumper to Ground (GND)
	6	GREEN	Horn Alarm
	7	BLUE	Horn Silence (Acknowledge) Switch
	8		UNUSED
	9	RED	+12 VDC
	10	BLACK	Ground (GND)

Table 2.3.3

3.3. RAS-3 and Up High-Level Alarm Wiring (refer to **Figure 2.3.4**) *Same applies when using (2) RAS-1-NYS*

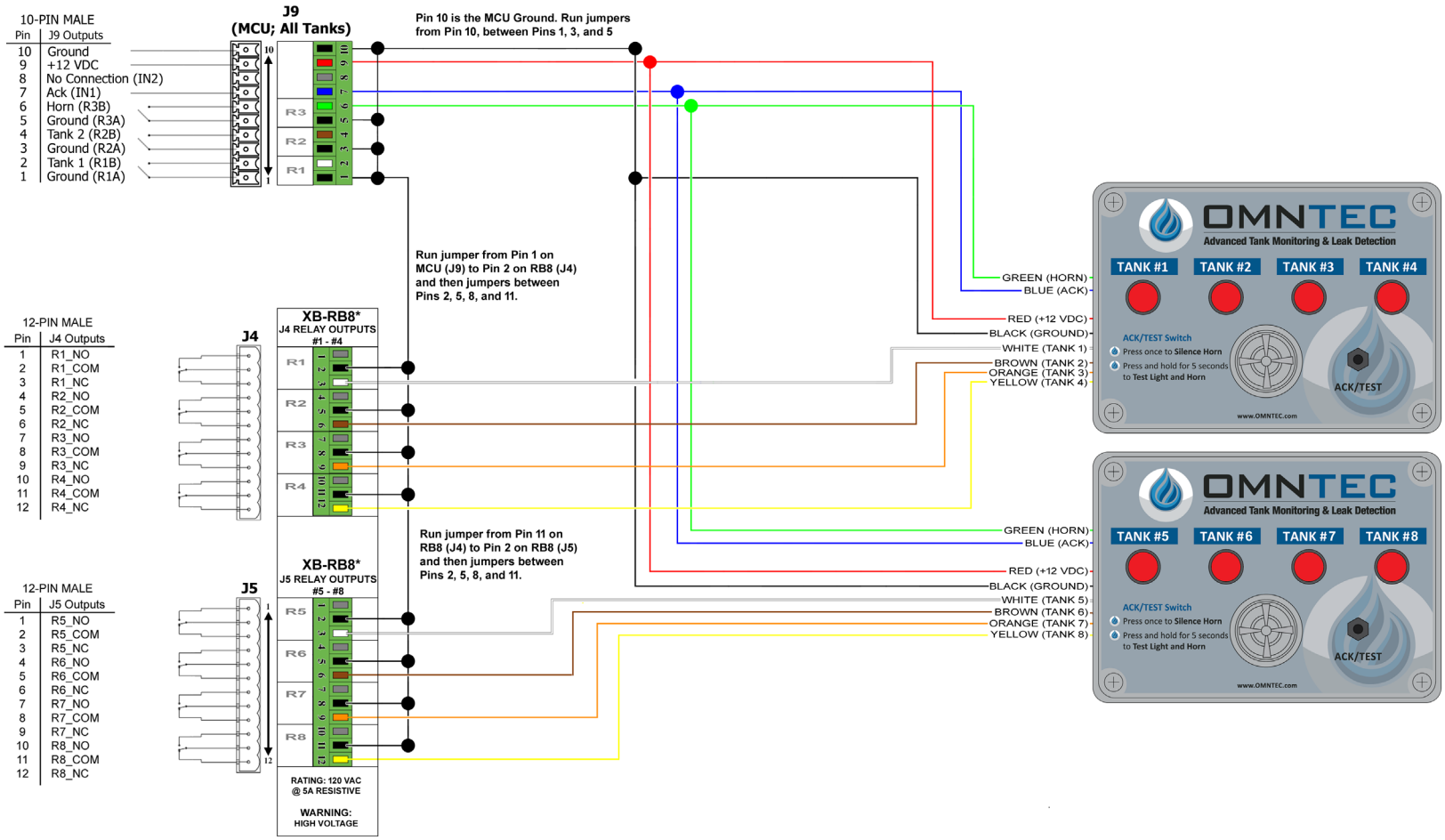

Figure 2.3.4