Functional Devices, Inc. • p: 800.888.5538 • f: 765.883.7505 • www.functionaldevices.com • sales@functionaldevices.com

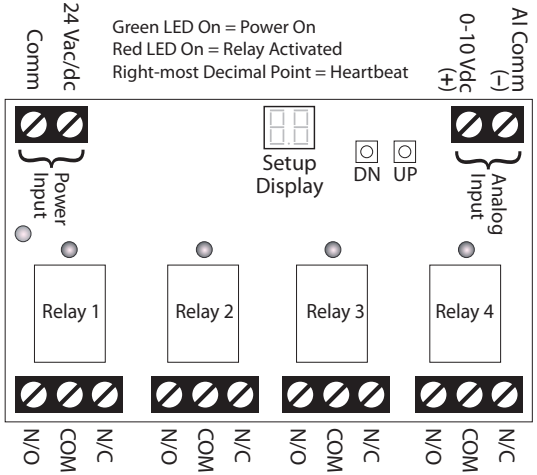
RIBMN24Q4C-PX

Bulletin B1226

Code Version 2.0

Contact Ratings:
15 Amp General Use @ 125 Vac
10 Amp General Use @ 277 Vac
10 Amp Resistive @ 30 Vdc N/O
7 Amp Resistive @ 30 Vdc N/C
1/2 HP @ 125 Vac
1 HP @ 250 Vac
1/4 HP @ 277 Vac
470 VA Pilot Duty @ 125 Vac
770 VA Pilot Duty @ 250 Vac

Power Input:
24 Vac/dc ; 50-60 Hz
200mA max.



c UL us LISTED 15M6

OPEN ENERGY MANAGEMENT EQUIPMENT

FOR SUPPLY CONNECTIONS USE #14 AWG OR LARGER WIRES RATED AT LEAST 75°C (167°F).

Notes:

• Relay will activate when Control Input voltage on the **Analog Input** terminals reaches or exceeds an individual relay's ON point.

• Both ON and OFF points are adjustable for each relay.

Factory Defaults		
Relay	ON Point (Vdc)	OFF Point (Vdc)
1	3.0	2.8
2	5.0	4.8
3	7.0	6.8
4	9.0	8.8

• Minimum ON point: 0.5Vdc

• Maximum ON point: 9.9Vdc

• Minimum OFF point: 0.3Vdc

• There will always be at least 200mV between a relay's ON and OFF points. If a relay's ON point is lowered below the set OFF point, the OFF point will move down with the ON point. However, if the relay's ON point is raised, the OFF point will remain the same as was previously set.

• Relay number will flash 3 times when voltage exceeds ON point.

• At any time during normal run mode, the voltage present on the **Analog Input** terminals can be displayed by pressing either the **UP** or **DN** buttons. (If either button is held down during **Analog Input** voltage change, display will update in real time.)

• ON points will be displayed as the relay number followed by an "n" (i.e. 1.n).

• OFF points will be displayed as the relay number followed by an "F" (i.e. 1.F).

• During normal run mode, the right-most decimal point will flash continuously.

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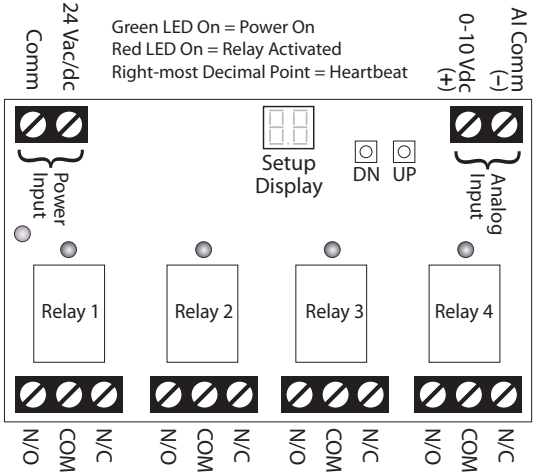

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4	9.0	8.8

• Minimum ON point: 0.5Vdc

• Maximum ON point: 9.9Vdc

• Minimum OFF point: 0.3Vdc

• There will always be at least 200mV between a relay's ON and OFF points. If a relay's ON point is lowered below the set OFF point, the OFF point will move down with the ON point. However, if the relay's ON point is raised, the OFF point will remain the same as was previously set.

• Relay number will flash 3 times when voltage exceeds ON point.

• At any time during normal run mode, the voltage present on the **Analog Input** terminals can be displayed by pressing either the **UP** or **DN** buttons. (If either button is held down during **Analog Input** voltage change, display will update in real time.)

• ON points will be displayed as the relay number followed by an "n" (i.e. 1.n).

• OFF points will be displayed as the relay number followed by an "F" (i.e. 1.F).

• During normal run mode, the right-most decimal point will flash continuously.

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Known Setpoints Setup Procedure (if desired ON and OFF voltages are known)

1. Apply 24Vac/dc to **Power Input** terminals.
2. Simultaneously press and hold both the **UP** and **DN** buttons for 3 seconds to enter Programming Mode.
   a. Display will flash between the relay number and its ON point (Example: flash "1.n" then flash "3.0" for Relay 1 set to turn on at 3.0Vdc).
3. For desired relay, adjust value to desired ON point using **UP** and **DN** buttons.
4. To save the new ON point, advance to the next relay number by pressing the **UP** and **DN** buttons simultaneously.
5. Repeat steps 3 and 4 until all ON points are adjusted to desired values.
6. Press the **UP** and **DN** buttons simultaneously again to proceed to the point at which the display flashes "1.F"
   a. Display will flash between the relay number and its OFF point (Example: flash "1.F" then flash "2.8" for Relay 1 set to turn off at 2.8Vdc).
7. For desired relay, adjust value to the desired OFF point using the **UP** and **DN** buttons (OFF point cannot be set higher than 200mV below the ON point).
8. To save the new OFF point, advance to the next relay number by pressing the **UP** and **DN** buttons simultaneously.
9. Repeat steps 7 and 8 until all OFF points are adjusted to desired values.
10. Unit will exit Programming Mode by simultaneously holding both the **UP** and **DN** buttons for 3 seconds (during which both decimal points on the display will begin flashing) **or** after 20 seconds of inactivity.
11. Follow *Checking ON and OFF Points Procedure* to verify correct ON and OFF points were set.

Unknown Setpoints Setup Procedure (if desired ON and/or OFF voltages are **not** known)

1. Apply 24Vac/dc to **Power Input** terminals.
2. Apply the DC control voltage to the **Analog Input** terminals.
3. Adjust 0-10Vdc Control Signal to the point at which Relay 1 is *desired* to be ON.
4. Press either the **UP** or **DN** button until the value stabilizes. Note the value displayed. That is the ON point for Relay 1 (1.n).
5. Adjust 0-10Vdc Control Signal to the point at which Relay 2 is *desired* to be ON.
6. Press either the **UP** or **DN** button until the value stabilizes. Note the value displayed. That is the ON point for Relay 2 (2.n).
7. Adjust 0-10Vdc Control Signal to the point at which Relay 3 is *desired* to be ON.
8. Press either the **UP** or **DN** button until the value stabilizes. Note the value displayed. That is the ON point for Relay 3 (3.n).
9. Adjust 0-10Vdc Control Signal to the point at which Relay 4 is *desired* to be ON.
10. Press either the **UP** or **DN** button until the value stabilizes. Note the value displayed. That is the ON point for Relay 4 (4.n).
11. Adjust 0-10Vdc Control Signal to the point at which Relay 4 is *desired* to be OFF.
12. Press either the **UP** or **DN** button until the value stabilizes. Note the value displayed. That is the OFF point for Relay 4 (4.F).
13. Adjust 0-10Vdc Control Signal to the point at which Relay 3 is *desired* to be OFF.
14. Press either the **UP** or **DN** button until the value stabilizes. Note the value displayed. That is the OFF point for Relay 3 (3.F).
15. Adjust 0-10Vdc Control Signal to the point at which Relay 2 is *desired* to be OFF.
16. Press either the **UP** or **DN** button until the value stabilizes. Note the value displayed. That is the OFF point for Relay 2 (2.F).
17. Adjust 0-10Vdc Control Signal to the point at which Relay 1 is *desired* to be OFF.
18. Press either the **UP** or **DN** button until the value stabilizes. Note the value displayed. That is the OFF point for Relay 1 (1.F).
19. Now that desired ON and OFF points are known for each relay, follow *Known Setpoints Setup Procedure* above.

Checking ON and OFF Points

(Relay ON and OFF points can be reviewed at any time with the following procedure.)

1. Apply 24Vac/dc to **Power Input** terminals.
2. Simultaneously press and hold both the **UP** and **DN** buttons for 3 seconds to enter Programming Mode.
   a. Display will flash between the relay number and its ON point (Example: flash "1.n" then flash "3.0" for Relay 1 set to turn on at 3.0Vdc).
3. To view the ON and OFF points for additional relays, press the **UP** and **DN** buttons simultaneously until desired relay number and state letter are displayed.
   a. State letter will either be "n" for the ON point or "F" for the OFF point.
4. Unit will exit Programming Mode by simultaneously holding both the **UP** and **DN** buttons for 3 seconds (during which both decimal points on the display will begin flashing) **or** after 20 seconds of inactivity.

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Known Setpoints Setup Procedure (if desired ON and OFF voltages are known)

1. Apply 24Vac/dc to Power Input terminals.
2. Simultaneously press and hold both the UP and DN buttons for 3 seconds to enter Programming Mode.
   a. Display will flash between the relay number and its ON point (Example: flash "1.n" then flash "3.0" for Relay 1 set to turn on at 3.0Vdc).
3. For desired relay, adjust value to desired ON point using UP and DN buttons.
4. To save the new ON point, advance to the next relay number by pressing the UP and DN buttons simultaneously.
5. Repeat steps 3 and 4 until all ON points are adjusted to desired values.
6. Press the UP and DN buttons simultaneously again to proceed to the point at which the display flashes "1.F"
   a. Display will flash between the relay number and its OFF point (Example: flash "1.F" then flash "2.8" for Relay 1 set to turn off at 2.8Vdc).
7. For desired relay, adjust value to the desired OFF point using the UP and DN buttons (OFF point cannot be set higher than 200mV below the ON point).
8. To save the new OFF point, advance to the next relay number by pressing the UP and DN buttons simultaneously.
9. Repeat steps 7 and 8 until all OFF points are adjusted to desired values.
10. Unit will exit Programming Mode by simultaneously holding both the UP and DN buttons for 3 seconds (during which both decimal points on the display will begin flashing) or after 20 seconds of inactivity.
11. Follow *Checking ON and OFF Points Procedure* to verify correct ON and OFF points were set.

Unknown Setpoints Setup Procedure (if desired ON and/or OFF voltages are not known)

1. Apply 24Vac/dc to Power Input terminals.
2. Apply the DC control voltage to the Analog Input terminals.
3. Adjust 0-10Vdc Control Signal to the point at which Relay 1 is *desired* to be ON.
4. Press either the UP or DN button until the value stabilizes. Note the value displayed. That is the ON point for Relay 1 (1.n).
5. Adjust 0-10Vdc Control Signal to the point at which Relay 2 is *desired* to be ON.
6. Press either the UP or DN button until the value stabilizes. Note the value displayed. That is the ON point for Relay 2 (2.n).
7. Adjust 0-10Vdc Control Signal to the point at which Relay 3 is *desired* to be ON.
8. Press either the UP or DN button until the value stabilizes. Note the value displayed. That is the ON point for Relay 3 (3.n).
9. Adjust 0-10Vdc Control Signal to the point at which Relay 4 is *desired* to be ON.
10. Press either the UP or DN button until the value stabilizes. Note the value displayed. That is the ON point for Relay 4 (4.n).
11. Adjust 0-10Vdc Control Signal to the point at which Relay 4 is *desired* to be OFF.
12. Press either the UP or DN button until the value stabilizes. Note the value displayed. That is the OFF point for Relay 4 (4.F).
13. Adjust 0-10Vdc Control Signal to the point at which Relay 3 is *desired* to be OFF.
14. Press either the UP or DN button until the value stabilizes. Note the value displayed. That is the OFF point for Relay 3 (3.F).
15. Adjust 0-10Vdc Control Signal to the point at which Relay 2 is *desired* to be OFF.
16. Press either the UP or DN button until the value stabilizes. Note the value displayed. That is the OFF point for Relay 2 (2.F).
17. Adjust 0-10Vdc Control Signal to the point at which Relay 1 is *desired* to be OFF.
18. Press either the UP or DN button until the value stabilizes. Note the value displayed. That is the OFF point for Relay 1 (1.F).
19. Now that desired ON and OFF points are known for each relay, follow *Known Setpoints Setup Procedure* above.

Checking ON and OFF Points

(Relay ON and OFF points can be reviewed at any time with the following procedure.)

1. Apply 24Vac/dc to Power Input terminals.
2. Simultaneously press and hold both the UP and DN buttons for 3 seconds to enter Programming Mode.
   a. Display will flash between the relay number and its ON point (Example: flash "1.n" then flash "3.0" for Relay 1 set to turn on at 3.0Vdc).
3. To view the ON and OFF points for additional relays, press the UP and DN buttons simultaneously until desired relay number and state letter are displayed.
   a. State letter will either be "n" for the ON point or "F" for the OFF point.
4. Unit will exit Programming Mode by simultaneously holding both the UP and DN buttons for 3 seconds (during which both decimal points on the display will begin flashing) or after 20 seconds of inactivity.

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