Quick Start Guide
VR15-3, VR20-3, VR25-3, VR30-3

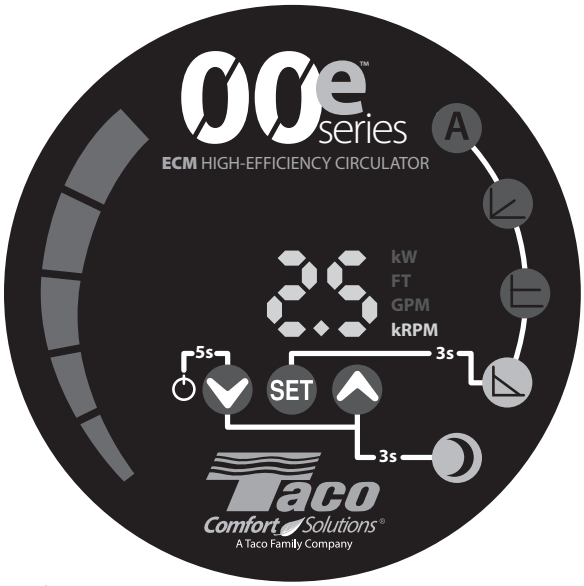
301-386

SUPERSEDES: NEW

EFFECTIVE: 06/29/17

Plant ID No. 001-3452

Quick Start Guide for 00e VR-15, 20, 25 & 30 -3 Models



1. Change Mode: Auto (A) (factory default),

Proportional Pressure, Constant Pressure, Constant Speed and Mode Set Values

1.1. Press [SET] Button for 3 seconds

1.2. Current mode setting flashes

1.3. While mode flashes use [∧] or [∨] keys to select new mode

1.4. New mode flashes

1.5. Press [SET] button to enter new mode

1.6. Press [∧] or [∨] keys to change FT/RPM Mode Set Value

1.7. Press [Set] to program new head/speed set value

2. Manual Standby (pump motor off)

2.1. Press and hold [∨] Button until the pump stops and the display has a readout "off"

3. Manual On (take pump out of standby mode)

3.1. Press [∨] button

3.2. "Off" changes to value in readout

4. Display Performance Data:

4.1. Regardless of settings, the real time numeric pump performance is displayed on the LED user interface (Corresponding graphical performance is indicated in the bar graph at the left hand side of the display)

4.2. Toggling between Watts, GPM, Ft Head and kRPM (RPM x 1,000) is accomplished by pressing [∧] or [∨] button until the desired data is read (this does not affect the operation of the pump)

5. Button Lock and unlock

5.1. Press and hold [∨] and [SET] button for 5 seconds for locking and unlocking buttons

5.2. Changing operational mode and mode set value is inactive during lockout

6. Operating Modes:

6.1. (A) Automatic (Factory Default)

6.1.1. Automatically adjusts proportional curve based on system demands

6.1.2. Mode set valve adjustment not possible in Auto Mode

6.2. Differential Pressure or Proportional Pressure(ft)

6.2.1. Zero flow head is 50% of head setting (inclining performance curve)

6.2.2. Head setting value adjustable

6.3.1. Differential head is constant from zero flow to max speed

6.3.2. Head setting value adjustable (see Section 2.2)

6.4. Variable Constant Speed (kRPM)

6.4.1. User adjustable constant curve speed (see Section 2.1)

6.4.2. Used for system balancing and 0-10Vdc remote control

6.5. Night Setback

6.5.1. Used with TRV (non-electric zone valve) systems

6.5.2. Pump goes to setback (min speed) with system setback

6.5.3. Mode set value adjustment not possible in Setback Mode

6.5.4. To enable/disable the night setback feature, simply press and hold the [∧] and [∨] buttons simultaneously for 3 seconds.

For more detailed pump functionality and control instructions, refer to full manual; reference number 302-385. If additional support is required, contact Taco technical support at 401-942-8000

Quick Start - Remote Control (0-10Vdc and Relay) Remote Relay Monitoring

1.1. For remote monitoring overloads or pump operation there is a relay switch block located opposite of the digital inputs (NC / C / NO) accessible by removing the wiring bay cover.

1.2. Factory default setting is to have the relay change position (i.e. from closed to open) if the pump goes into a fault condition. The relay trigger can be changed to "Pump Enable", "Pump Ready", "Pump Operation", "Always On", or "No Function" by changing the Pump Configuration via a laptop and Ethernet cable

Note: The relay is a potential free changeover contact and is rated at 230 VAC, 3A, AC1 or 32VDC, 3A

0-10Vdc Set-up and Wiring

2. The following describes the settings, connections and applications for 0-10 Vdc external control of Taco 00e™ VR 15, 20, 25 and 30 ECM Pumps – 3 models. Applications includes:

- ***Application 1:*** 0-10 Vdc On/Off/Speed Control
- ***Application 2:*** Switched Off/Medium Speed & 0-10 Vdc Minimum/Maximum Speed Control
- ***Application 3:*** Switched Enable/Disable & 0-10 Vdc Minimum/Maximum Speed Control

Note: Pump needs to set to Constant Speed (see Quick Start Guide above)

Application 1 (Mode 1) - On/Off/Speed Modulation with External 0-10 Vdc Control Input

1. Control and Wiring (0-10 Vdc On/Off/Speed Control)

1.1.1. Wire 0-10 Vdc "+" to "Set 1" and "Set 3" terminals. Wire 0-10 Vdc "-" to 0V terminal – Fig 4

Note: Insure that Mode Dial is set to Mode 1. Changing modes needs a hard reset (powered off for 10 seconds and powered on) for mode setting change to take effect (Fig 4)

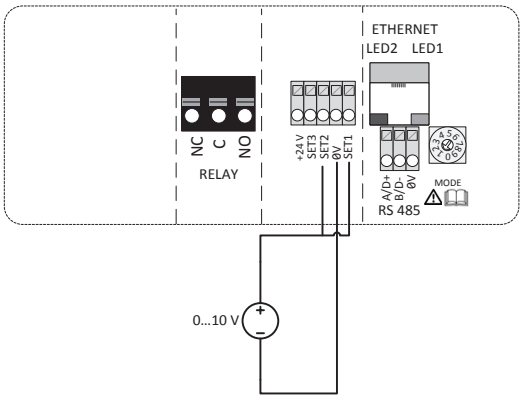


Fig 4

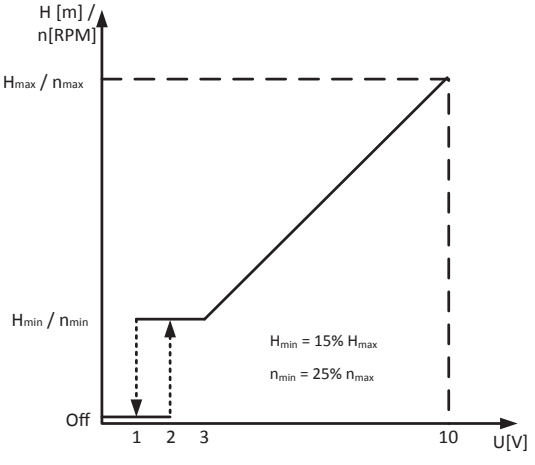


Fig 5

1.2. Sequence of Operation – Fig 5:

1.2.1. Start-up:

1.2.1.1. 0 to 2.0 Vdc pump is in "Stand-by" or "Off" mode (power to the drive is active, power to the motor is off)

1.2.1.2. 2.0 to 3.0 Vdc pump runs at minimum speed

1.2.1.3. 3.0 to 10 Vdc pump modulates linearly between min and max speed based on 0-10 Vdc input signal

1.2.2. Shut down:

1.2.2.1. Pump ramps down to minimum speed at 3.0 Vdc

1.2.2.2. Stays at minimum speed between 3.0 and 1.0 Vdc

1.2.2.3. Below 1.0 Vdc pump returns to "Standby" or Off mode

Application 2 (Mode 1) - Speed Modulation with External 0-10 Vdc Control Input, Switched Medium Speed

2. Control and Wiring (0-10 Vdc/External Switched Medium Speed/Min/Max Speed Control)

2.1. Wire make/break contact (switch) across "Set 3" and "Set 1" – Fig 6

2.2. Wire 0-10 Vdc "+" to "Set 2" terminal – Fig 6

2.3. Wire 0-10 Vdc "-" to "0V" terminal – Fig 6

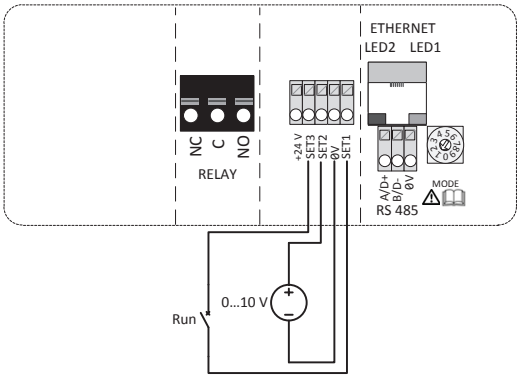


Fig 6

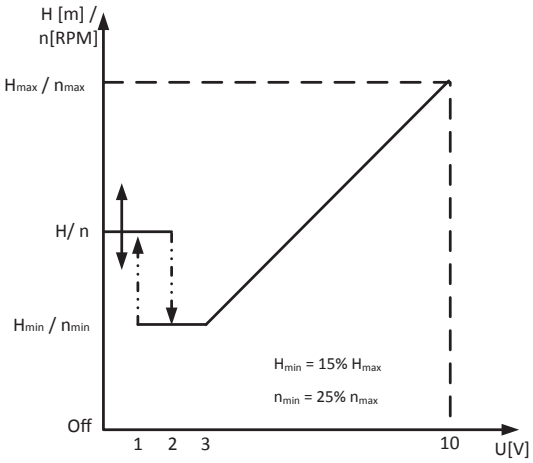


Fig 7

2.4. Sequence of Operation – Fig 7:

2.4.1. Start-up:

2.4.1.1. Open "switch" across "Set 3" and "Set 1" pump in standby (regardless of 0-10 Vdc signal)

2.4.1.2. Close "switch" pump runs at medium speed from 0-2.0 Vdc

2.4.1.3. 2.0 to 3.0 Vdc pump runs at minimum speed

2.4.1.4. 3.0 to 10 Vdc pump modulates linearly between min and max speed based on 0-10 Vdc input signal

2.4.2. Shut Down:

2.4.2.1. Pump ramps down to minimum speed at 3.0 Vdc

2.4.2.2. Stays at minimum speed between 3.0 and 1.0 Vdc

2.4.2.3. Below 1.0 Vdc pump returns to medium speed

2.4.2.4. Open "switch" across "Set 3" and "Set 1" pump is in standby (regardless of 0-10 Vdc signal)

Application 3 (Mode 2) - Speed Modulation with External 0-10 Vdc Control Input, Switched Enable/Disable

3. Insure Mode Dial set to Mode 2 – Fig 8

4. Control and Wiring (0-10 Vdc Speed Control, On/Off with external switch).

Fig 8

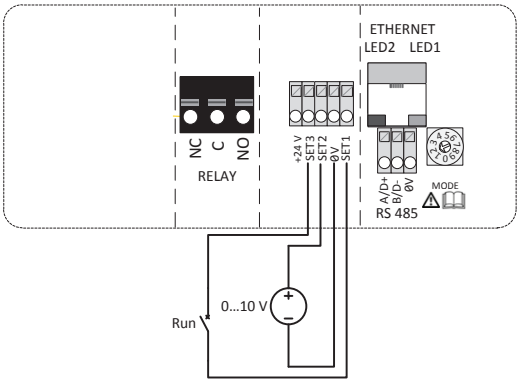
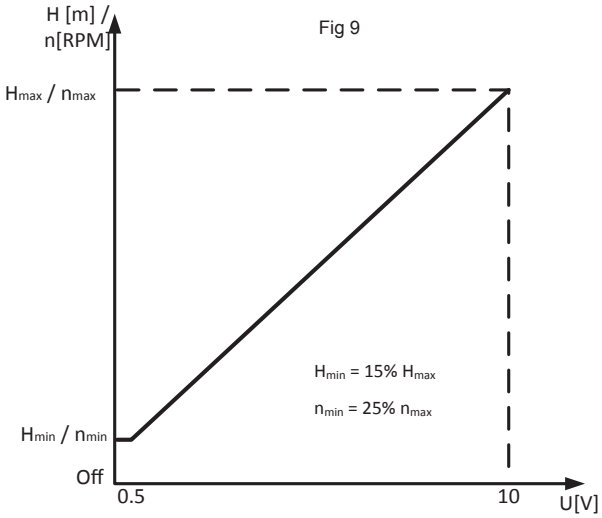


Fig 9



4.1. Wire make/break contact (switch) across "Set 3" and "Set 1" – Fig 8

4.2. Wire 0-10 Vdc [⩘] to "Set 2" terminal – Fig 8

4.3. Wire 0-10 Vdc "-" to 0V terminal – Fig 8

4.4. Sequence of Operation – Fig 9:

4.4.1. Start-up:

4.4.1.1. Close "switch" enables pump – but is in stand-by mode from 0-0.5 Vdc

4.4.1.2. 0.5 to 10 Vdc pump modulates linearly between min and max speed based on 0-10 Vdc input

4.4.2. Shut down:

4.4.2.1. Pump ramps down to minimum speed at 0.5 Vdc

4.4.2.2. Stays at minimum speed between 0.5 and 0 Vdc

4.4.2.3. 0 Vdc (or loss of Vdc signal) pump in stand-by mode

4.4.2.4. Open "switch" pump is in standby (disable) mode (regardless of 0-10 Vdc signal)

For more detailed pump functionality and control instructions, refer to full manual; reference number 302-385.
If additional support is required, contact Taco technical support at 401-942-8000

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