

ValvApp™ Worksheet



This worksheet is intended for the configuration of ValvApps™ used in the VC-22D Valve Controller. From the information provided below, Cla-Val will determine whether a standard ValvApp™ should be used or if a custom ValvApp™ is required. Additionally, this worksheet acts as a check list during commissioning to verify all parameters have been correctly configured in the VC-22D Valve Controller. Once this worksheet is completed, please return to your Cla-Val representative for approval. If a custom ValvApp is required and approved, a custom wiring diagram and ValvApp™ will be created and emailed to you. Please verify all *Required fields have been filled out prior to submittal.

| Information | | | Configuration: | | |
|---|-----------------------------|--|----------------|------------------------------------|--|
| *Project Name | | *Today's Date | | | |
| *Cla-Val Representative | | Project Completion Date | | | |
| Control Valve Model Number (if known) | | Customer Approval Signature | | | |
| Valve Regulation (If more than 2 PID's are required, specify in logic on page 2) | | | | | |
| PID 1 - Valve Regulation | | *Solenoid Config | | PID 2 - Valve Regulation | |
| *Control Type | | *Signal Loss | | Control Type | |
| Deadband (+/-) | | Ramping | | Deadband (+/-) | |
| | | | | Signal Loss | |
| | | | | Ramping | |
| DP Metering (133 Valve) | | | | | |
| <i>DP Metering</i> | Pressure Measurement | P1+P2 DPT | Output | | |
| Size | Body Style | Seat | Units | Output Scaling | |
| Totalizer | | | | | |
| <i>Totalizer</i> | Reset | Units | Ouput | Output Scaling | |
| Analog Inputs (4-20mA) 6 Available | | | | | |
| *Analog Input #1 (Typically reserved for control setpoint signal) | | Scaling | | Signal Powered by Controller | |
| Name | Units | 4mA = | 20mA = | Decimal | |
| *Analog Input #2 (Typically reserved for control feedback signal) | | Scaling | | Signal Powered by Controller | |
| Name | Units | 4mA = | 20mA = | Decimal | |
| <i>Analog Input #3</i> | | Scaling | | Signal Powered by Controller | |
| Name | Units | 4mA = | 20mA = | Decimal | |
| <i>Analog Input #4</i> | | Scaling | | Signal Powered by Controller | |
| Name | Units | 4mA = | 20mA = | Decimal | |
| <i>Analog Input #5</i> | | Scaling | | Signal Powered by Controller | |
| Name | Units | 4mA = | 20mA = | Decimal | |
| <i>Analog Input #6</i> | | Scaling | | Signal Powered by Controller | |
| Name | Units | 4mA = | 20mA = | Decimal | |
| Digital Inputs 6 Available | | | | | |
| <i>Digital Input 1</i> Name | | <i>Digital Input 2</i> Name | | <i>Digital Input 3</i> Name | |
| Purpose | | Purpose | | Purpose | |
| <i>Digital Input 4</i> Name | | <i>Digital Input 5</i> Name | | <i>Digital Input 6</i> Name | |
| Purpose | | Purpose | | Purpose | |

Analog Outputs (4-20mA) *Note: Analog Outputs are sourced with controller power.*

| | | | | |
|------------------|-------|---------|--------|---------|
| Analog Output #1 | | Scaling | | |
| Name | Units | 4mA = | 20mA = | Decimal |
| Analog Output #2 | | Scaling | | |
| Name | Units | 4mA = | 20mA = | Decimal |
| Analog Output #3 | | Scaling | | |
| Name | Units | 4mA = | 20mA = | Decimal |
| Analog Output #4 | | Scaling | | |
| Name | Units | 4mA = | 20mA = | Decimal |

| Solenoid Outputs | |
|------------------|--|
|------------------|--|

| Solenoid Output #1 (SO1) | | Solenoid Output #2 (SO2) | |
|---------------------------|--|---------------------------|--|
| Name | | Name | |
| Default: Closing Solenoid | | Default: Opening Solenoid | |

Note: SO1 and SO2 are a powered solid state output typically reserved for solenoids used on a 131 or 133 series valve. The output can be configured as PWM (default) or Discrete ON/OFF. If configured as discrete, a value of 0 represents an open circuit, and 1 a closed circuit.

Relay Output

Relay Output #1 (RO1) *Relay Output #2 (RO2)* **Note:** RO1 and RO2 are configured as dry contact mechanical relays typically used for alarms. These outputs are configured as Discrete ON/OFF, a value of 0 represents an open circuit, and 1 a closed circuit.

Actions/Alarms

| | |
|---------------------|-----------------|
| Action #1 | |
| Name | Describe |
| Additional Comments | |
| | |
| Action #2 | |
| Name | Describe |
| Additional Comments | |
| | |
| Action #3 | |
| Name | Describe |
| Additional Comments | |
| | |
| Action #4 | |
| Name | Describe |
| Additional Comments | |

| |
|---------------|
| Communication |
|---------------|

| | | | |
|-----------------|----------------------|---------------------------------|---|
| GSM/GPRS | Modbus TCP/IP | Modbus RTU (RS485/RS232) | Note: See ModBus specification page for register mapping and implementation. Refer to manual for more details. |
|-----------------|----------------------|---------------------------------|---|

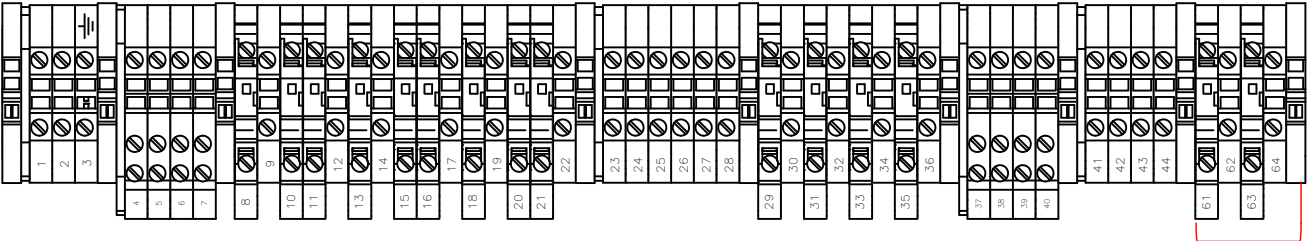
***Control Logic** (Please specify all control logic using sketches, diagrams, etc. Attach additional sheets if necessary)

* This is only to give an idea of where wires will be landed. Does not account for number of wires and Loop or Field powered. Please refer to **Electrical Wiring** section of VC-22D IOM for help wiring loop or field powered devices.



*Please refer to individual I/O sensor documents for correct wiring. This is only to give an idea of where wires will be landed. Does not account for number of wires and Loop or Field powered.

**Optional I/O does not need to be landed for App to function. To add functionality or additional I/O, contact Cla-Val rep.



Only on panels manufactured after 9/30/2022

Land AC Solenoids here

| CUSTOMER CONNECTIONS | |
|--|---------------------------|
| TERM | DESCRIPTION |
| POWER SUPPLY | |
| 1 ; (L) | 120 - 240 VAC/ 50 - 60 HZ |
| 2 ; (N) | |
| 3 ; GROUND | |
| | |
| SOLENOID OUTPUTS 120-240 VAC/50-60 HZ | |
| 4 ; SO1+ (L) | |
| 5 ; SO1- (N) | |
| 6 ; SO2+ (L) | |
| 7 ; SO2- (N) | |
| | |
| ANALOG INPUTS 4-20MA | |
| 8 ; AI1+ | |
| 9 ; AI1- | |
| 10 ; PO1 | |
| 11 ; AI2+ | |
| 12 ; AI2- | |
| 13 ; AI3+ | |
| 14 ; AI3- | |
| 15 ; PO2 | |
| 16 ; AI4+ | |
| 17 ; AI4- | |
| 18 ; AI5+ | |
| 19 ; AI5- | |
| 20 ; PO3 | |
| 21 ; AI6+ | |
| 22 ; AI6- | |
| | |
| DIGITAL INPUTS (USE WITH DRY CONTACT ONLY) | |
| 23 ; DI1+ | |
| 24 ; DI1- | |

| CUSTOMER CONNECTIONS | |
|--|-------------|
| TERM | DESCRIPTION |
| 25 ; DI2+ | |
| 26 ; DI2- | |
| 27 ; DI3+ | |
| 28 ; DI3- | |
| | |
| ANALOG OUTPUTS 4-20MA | |
| 29 ; AO1+ | |
| 30 ; AO1- | |
| 31 ; AO2+ | |
| 32 ; AO2- | |
| 33 ; AO3+ | |
| 34 ; AO3- | |
| 35 ; AO4+ | |
| 36 ; AO4- | |
| | |
| SOLENOID OUTPUTS 24 VDC | |
| 37 ; SO1+ (24VDC) | |
| 38 ; SO1- (0VDC) | |
| 39 ; SO2+ (24VDC) | |
| 40 ; SO2- (0VDC) | |
| | |
| DIGITAL OUTPUTS (OPEN/CLOSES DRY CONTACT) | |
| 41 ; RO1.1 | |
| 42 ; RO1.2 | |
| 43 ; RO2.1 | |
| 44 ; RO2.2 | |
| | |
| SPARE 24 VDC OUTPUTS (<i>on panels manufactured after 9/30/2022</i>) | |
| 61 | 24 VDC |
| 62 | 0 VDC |
| 63 | 24VDC |
| 64 | 0 VDC |

Land DC Solenoids here

| Cla-Val VC-22D Modbus Addresses | | | | | | |
|---------------------------------|-------|-------------------------------|-----------|------------|-------------|---|
| Project Name: | | | | | | |
| Date: | | | | | | |
| Modbus | Input | Description | Data Type | Access | I/O Mapping | Comments |
| 40007 Bit 0 | | Analog Input Modbus Override | Bit | Write | N/A | Overrides 4-20mA AI1 Input to use Modbus Address 43000/43001 |
| 40007 Bit 1 | | Analog Input Modbus Override | Bit | Write | N/A | Overrides 4-20mA AI2 Input to use Modbus Address 43002/43003 |
| 40007 Bit 2 | | Analog Input Modbus Override | Bit | Write | N/A | Overrides 4-20mA AI3 Input to use Modbus Address 43004/43005 |
| 40007 Bit 3 | | Analog Input Modbus Override | Bit | Write | N/A | Overrides 4-20mA AI4 Input to use Modbus Address 43006/43007 |
| 40007 Bit 4 | | Analog Input Modbus Override | Bit | Write | N/A | Overrides 4-20mA AI5 Input to use Modbus Address 43008/43009 |
| 40007 Bit 5 | | Analog Input Modbus Override | Bit | Write | N/A | Overrides 4-20mA AI6 Input to use Modbus Address 43010/43011 |
| 40008 Bit 0 | | Digital Input Modbus Override | Bit | Write | N/A | Overrides Hardwire DI1 Input to use Modbus Address 41000 |
| 40008 Bit 1 | | Digital Input Modbus Override | Bit | Write | N/A | Overrides Hardwire DI2 Input to use Modbus Address 41001 |
| 40008 Bit 2 | | Digital Input Modbus Override | Bit | Write | N/A | Overrides Hardwire DI3 Input to use Modbus Address 41002 |
| 40008 Bit 3 | | Digital Input Modbus Override | Bit | Write | N/A | Overrides Hardwire DI4 Input to use Modbus Address 41003 |
| 40008 Bit 4 | | Digital Input Modbus Override | Bit | Write | N/A | Overrides Hardwire DI5 Input to use Modbus Address 41004 |
| 40008 Bit 5 | | Digital Input Modbus Override | Bit | Write | N/A | Overrides Hardwire DI6 Input to use Modbus Address 41005 |
| 41000 | | Digital Input | Word | Read/Write | DI1 | Register Holds/Reads DI1 Value |
| 41001 | | Digital Input | Word | Read/Write | DI2 | Register Holds/Reads DI2 Value |
| 41002 | | Digital Input | Word | Read/Write | DI3 | Register Holds/Reads DI3 Value |
| 41003 | | Digital Input | Word | Read/Write | DI4 | Register Holds/Reads DI4 Value |
| 41004 | | Digital Input | Word | Read/Write | DI5 | Register Holds/Reads DI5 Value |
| 41005 | | Digital Input | Word | Read/Write | DI6 | Register Holds/Reads DI6 Value |
| 41006 | | Digital Output | Word | Read | S01 | Monitory Purposes (Optional) |
| 41007 | | Digital Output | Word | Read | S02 | Monitory Purposes (Optional) |
| 41008 | | Digital Output | Word | Read | R01 | Monitory Purposes (Optional) |
| 41009 | | Digital Output | Word | Read | R02 | Monitory Purposes (Optional) |
| 43000/43001 | | Analog Input | Int 32 | Read/Write | AI1 | Register Holds/Reads AI1 Value x100 for Two Implied Decimals |
| 43002/43003 | | Analog Input | Int 32 | Read/Write | AI2 | Register Holds/Reads AI2 Value x100 for Two Implied Decimals |
| 43004/43005 | | Analog Input | Int 32 | Read/Write | AI3 | Register Holds/Reads AI3 Value x100 for Two Implied Decimals |
| 43006/43007 | | Analog Input | Int 32 | Read/Write | AI4 | Register Holds/Reads AI4 Value x100 for Two Implied Decimals |
| 43008/43009 | | Analog Input | Int 32 | Read/Write | AI5 | Register Holds/Reads AI5 Value x100 for Two Implied Decimals |
| 43010/43011 | | Analog Input | Int 32 | Read/Write | AI6 | Register Holds/Reads AI6 Value x100 for Two Implied Decimals |
| 43036/43037 | | Analog Output | Int 32 | Read | AO1 | Monitory Purposes (Optional) - Register Holds AO1 Value x100 for Two Implied Decimals |
| 43038/43039 | | Analog Output | Int 32 | Read | AO2 | Monitory Purposes (Optional) - Register Holds AO2 Value x100 for Two Implied Decimals |
| 43040/43041 | | Analog Output | Int 32 | Read | AO3 | Monitory Purposes (Optional) - Register Holds AO3 Value x100 for Two Implied Decimals |
| 43042/43043 | | Analog Output | Int 32 | Read | AO4 | Monitory Purposes (Optional) - Register Holds AO4 Value x100 for Two Implied Decimals |

***Additional ModBus information can be found in the manual.