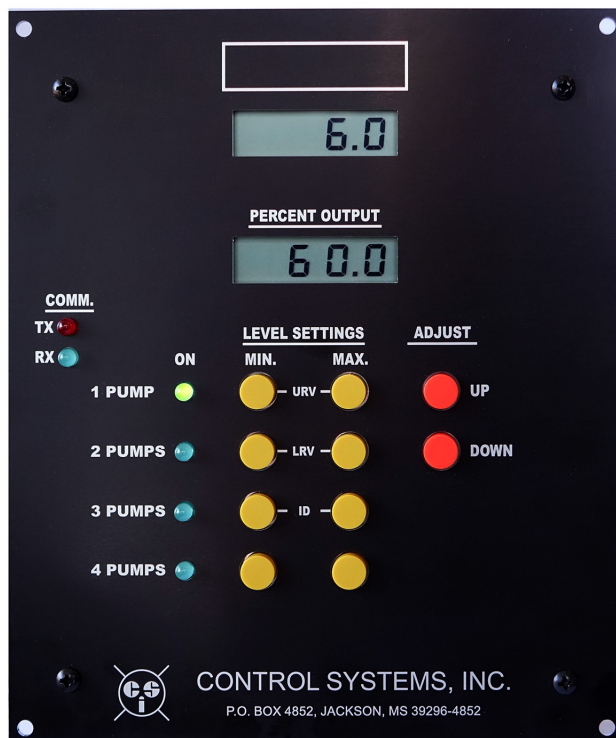




PRODUCT DATA BULLETIN

BULLETIN
FDC101A
FREQUENCY
DRIVE
CONTROLLER



STANDARD FEATURES

- UL APPROVED FOR USE IN INDUSTRIAL CONTROL PANELS.
- TWO 3 ½ DIGIT LCD DISPLAYS. (FOR LEVEL INPUT AND OUTPUT)
- MIN. AND MAX. LEVEL SETPOINTS FOR EACH RANGE.
- INPUT STATUS LED'S ON BACK OF BOARD.
- CONTROL RANGE PILOT LIGHTS.
- OPTICALLY ISOLATED RUNNING INPUTS.
- PUMP UP OR DOWN OPERATION.
- ISOLATED 4-20 MADC LEVEL INPUT.
- TWO OR FOUR ISOLATED 4-20 MADC OUTPUTS.
- SETPOINTS ARE VIEWABLE ON DISPLAY.
- SETPOINTS ADJUSTABLE FROM FRONT.
- RS485 MODBUS SCADA COMMUNICATIONS.
- LAMP TEST FEATURE
- 115/120 VAC @ 60 HZ POWER
- PANEL MOUNTED UNIT
- NAMEPLATE DIMENSIONS:
6 3/4" WIDE X 8" HIGH

DESCRIPTION

The FDC101A is a 120 VAC powered, electronic unit that controls the speed (pacing) of one to four variable frequency drives by monitoring input level and conditioning the analog outputs based on the level and individual field-set Low and High adjustments. Inputs include one isolated 4-20 mADC level input, four pump running inputs and a lamp test. There are up to four isolated 4-20 mADC outputs used to pace each drive. All of the isolated analog outputs mirror each other. Each analog output has its own indicating LED which is on when the current loop is made and will vary in brightness along with the changing output signal. Two 3 ½ digit LCD displays indicate level and percent output. Four green LED's on the front panel indicate how many pumps are running. Individual setpoints are used to set levels for minimum and maximum speeds with one, two, three or four pumps running. All settings can be reviewed and set at any time by viewing the digital level display on the front of the unit. It is the total number of pumps running, in any order, which determines which output range will be selected. The unit can be set to operate in either pump-up or pump-down mode. An RS485 Modbus port is standard for communications to remote telemetry systems. This device is UL approved for use in industrial control panels.

SUGGESTED SPECIFICATIONS

Provide an electronic, solid state, panel-mounted controller that can be field configured to control the speed of up to four Variable Frequency Drives (VFD's) based on how many drives are running. The controller shall be provided with the following features: (1) an isolated 4-20 mADC input signal with 20-bit analog-to-digital converter (2) Up to four isolated 4-20 mADC output signals to pace up to four drive controllers. Each analog output has its own indicating LED which is on when the current loop is made and will vary in brightness along with the changing output signal. The analog signal shall be the same at each output. Individual 16-bit digital-to-analog converters drive the outputs. Each of the outputs shall be capable of driving up to a 500 Ohm load. (3) Two LCD 3 ½ digit (1999 count) displays: The first display may be field calibrated to indicate the value of the 4-20 mADC input signal. The second display shall be calibrated to indicate the percentage of the analog output that is being fed to the drives. (4) All control points (high and low settings) shall be adjustable from the front of the unit with the analog input indicator displaying the setpoints. (5) The unit shall vary the 4-20 mADC outputs proportionally between the minimum and maximum level settings, when the controller is receiving a positive pump running signal. (6) The operator shall be able to select individual minimum and maximum speed levels with one, two, three or four pumps running. (7) Four optically isolated inputs to receive dry contact, positive running signals from the pumps. (8) Four individual green LED pilot lights to indicate when one, two, three or four pump running input signals are being received. (9) The outputs can be selected to operate in either pump-up or pump-down mode (10) A lamp test feature to test the front panel LED indicators and LCD displays. (11) RS485 serial communications terminals for communications to remote telemetry systems using Modbus protocol. (12) All I/O connectors shall be quick-connect type. (13) Operating power is 120VAC, 60 hz.

SPECIFICATIONS

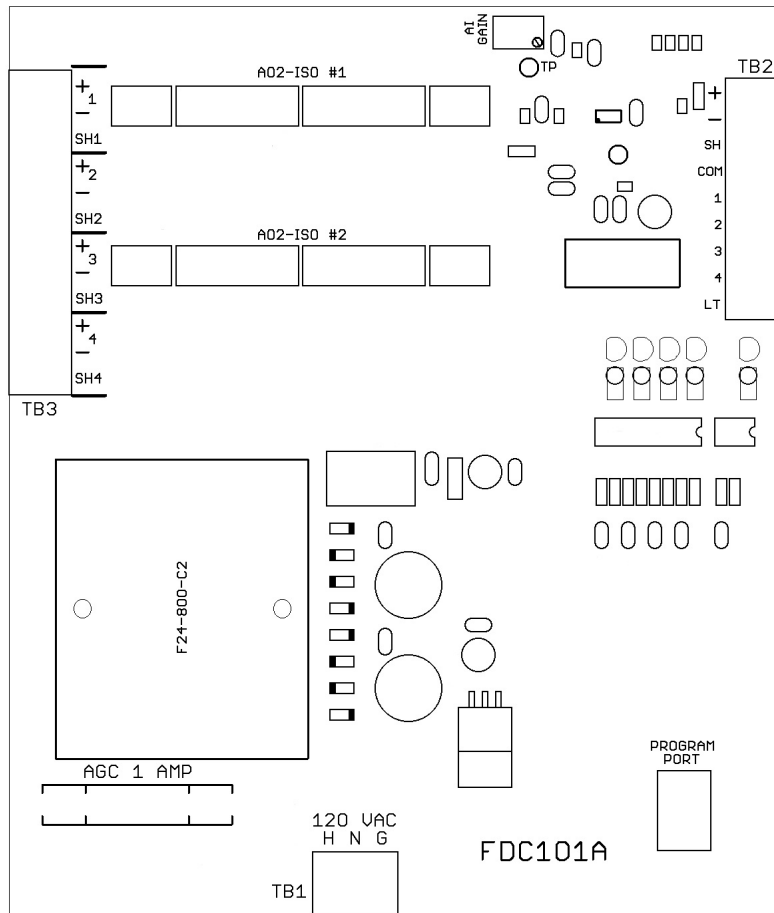
- SUPPLY VOLTAGE: 115/120 VAC, 50/60 Hz
- MAX SUPPLY CURRENT USED: 75 ma
- MAX POWER CONSUMPTION: 9 Watts
- INPUT CONTROL VOLTAGE: 12 VDC @ 12 mADC
- NAMEPLATE DIMENSIONS: 6 3/4" Wide X 8" High
- PANEL CUTOUT DIMENSIONS: 6" Wide X 7" High

FDC101A FIELD CONNECTIONS

- (4-20ma Outputs)**
TB3 Connections
1. Out-1 (+)
 2. Out-1 (-)
 3. Out-1 shield
 4. Out-2 (+)
 5. Out-2 (-)
 6. Out-2 shield
 7. Out-3 (+)
 8. Out-3 (-)
 9. Out-3 shield
 10. Out-4 (+)
 11. Out-4 (-)
 12. Out-4 shield

DIP Switches are located under TB3.

- Dip 1: pump Up/Dwn**
Dip 2: dec. point #1
Dip 3: dec. point #2
Dip 4: 4800/9600 baud



- TB2 Connections**
9. 4-20ma (+)
 8. 4-20ma (-)
 7. Shield
 6. Input Common
 5. In-1
 4. In-2
 3. In-3
 2. In-4
 1. Lamp Test input

RS485 terminals are on TB4 which is on the lower board below TB2.

The programming port is only used for updating the board firmware. This is NOT a port for other communications.

TB1: AC Power

ORDERING INFORMATION

Frequency Drive Controller: FDC101A

WARRANTY: Control Systems, Inc. (CSI) warrants equipment of its own manufacture to be free from defects in material and workmanship, under normal conditions of use and service, and will replace any component found to be defective on its return to CSI, transportation charges prepaid, within one year of its original purchase. CSI will extend the same warranty protection on accessories which is extended to CSI by the original manufacturer. CSI also assumes no liability, express or implied, beyond its obligation to replace any component involved. Such warranty is in lieu of all other warranties express or implied.



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