

DELTA SMART SYSTEM

TYPE 358 PROGRAMMABLE CONTROLLER/CHARACTERIZER/RETRANSMITTER

FIELD MOUNTED, ACCEPTS mADC AND VDC ANALOG INPUTS

FEATURES

- Accepts current or voltage signals from any process variable transmitter
- Provides on/off control of up to six pumps, motors, valves or other devices
- Characterizes input signal 20 point programmable curve
- All displayed values and settings are in terms of engineering units
- Includes rotation software for up to six pumps, feeders, or other devices
- Programmable time overrides and relay actuation delays
- Retransmits a linear or characterized signal equivalent to the input signal, can include an optional RS—232, 422, or 485 communications port
- Can be programmed remotely as well as interrogated by host computers, PLCs, telemetry systems
- Integral keypad for programming
- Sixteen character alpha-numeric LCD display scalable to readout in terms of any engineering units
- Six 10 amp SPDT relays
- Isolated 4-20 mADC scaleable output
- Integral dc supply for two-wire transmitter loop power
- NVR Memory protection; no batteries
- Programmable anti-tamper feature
- Self-checking provides diagnostics
- Type 4X epoxy/glass enclosure
- PID control; proportional, reset, and derivative action to control valve or feeder unit

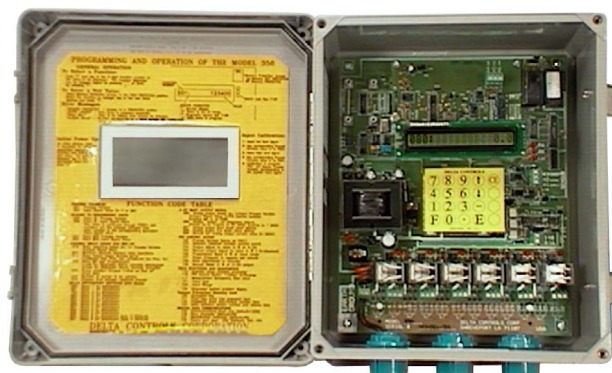
SYSTEM DESCRIPTION

The Delta Type 358 Smart System is a microprocessor based instrument capable of accepting the current or voltage output signal of any process variable transmitter. Using that signal as an input, the Smart System can be programmed to control the start/stop or open/close operation of up to six external devices such as pumps, motors or valves using six 10 amp relays.

The Smart System accepts 4-20 mADC, 0-20 mADC, 0-10 volt DC and 1-5 volt DC and other input signals. The input signal can be characterized using a curve of up to 20 points. Regardless of which input signal range is used, the 358 can retransmit the incoming signal as received or characterized as a 4-20 mADC signal.

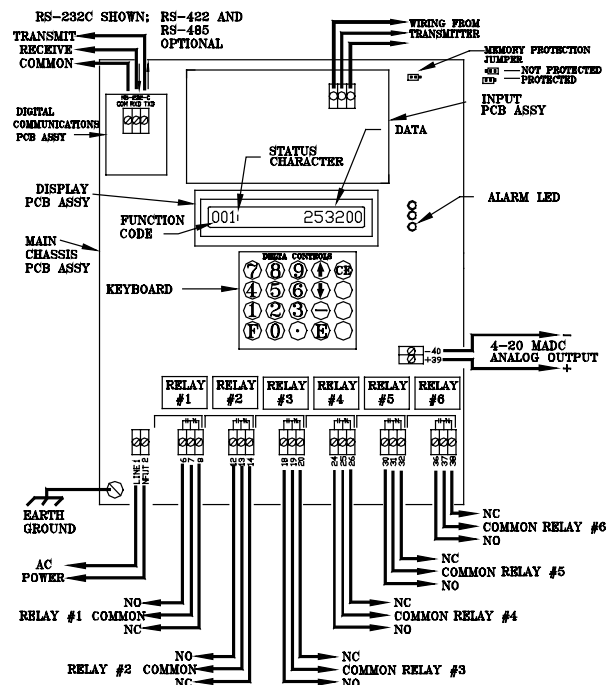
Complete multiple pump control software is included to permit rotation of pumps based on first on/first off or programmed time intervals. Up to six pumps can be controlled. If fewer than six pumps, the remaining relays can be used for alarms since any number of relays can be selected for control or alarm functions. Pumps can easily be deleted from rotation when out of service.

RS-232C, RS-422 and RS-485 are offered as options with the Smart System



APPLICATIONS

- Multiple pump control and rotation
- Flow or pressure control using staging signals to primary movers
- Control of level using a capacitance probe or head pressure sensor
- Water pressure control in tall buildings
- Wastewater treatment and management
- Metering open channel flow using an RF admittance probe sensor
- pH control in tanks, pits, and channels
- Temperature control of cookers, autoclaves, incinerators, heaters, ovens, etc.
- Batch control using weigh cells
- Centrifuge control and alarm of speed



INSTRUMENT LAYOUT AND WIRING DIAGRAM

MODEL NUMBERING SYSTEM



EXAMPLE 358 - 01 - V - E - 4X - RS232-TH

SUPPLY VOLTAGE	
M/N	SINGLE PHASE VOLTAGE
1	120 VAC, 50/60 Hz
2	240 VAC, 50/60 Hz
3	24 VDC

INPUT TYPE	
M/N	TYPE
I	MADC
V	VOLTS DC

MAX INPUT RANGE*	
M/N	RANGE
A	4-20
B	1-5
C	0-0.4
D	0-1
E	0-3
F	0-5
G	0-10
H	0-20

*field selectable

ADDITIONAL OPTIONS	
M/N	DESCRIPTION
ID	ILLUMINATED LCD DISPLAY
RS232	RS-232 DIGITAL COMM PORT
RS422	RS-422 DIGITAL COMM PORT
RS485	RS-485 DIGITAL COMM PORT
PSM	2" PIPESTAND MOUNT BKT

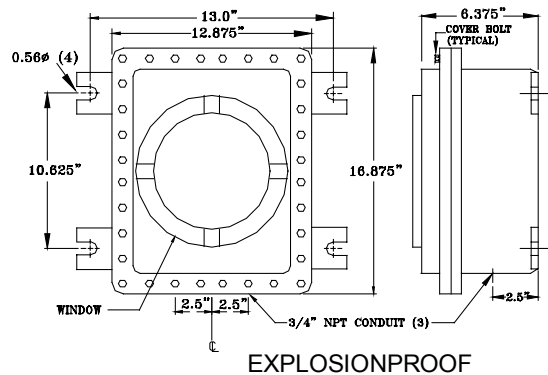
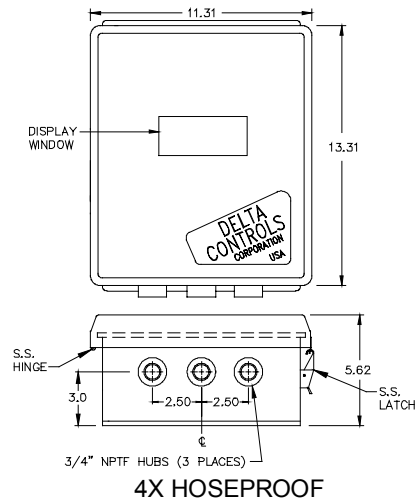
HOUSING RATING	
M/N	HOUSING (UL & CSA LISTED)
4X	HOSEPROOF, SS TRIMMED FIBERGLASS, CORROSION RESISTANT
7C	EXPLOSION PROOF; CLASS 1, DIVISION 1 GROUPS C,D; ALSO 4X; ALUMINUM
7B	SAME; EXCEPT ALSO GROUP B

**MADE IN THE USA BY
DELTA CONTROLS**

SPECIFICATIONS

- GENERAL TYPE:** Microprocessor based.
- POWER REQUIREMENTS:** 120 or 240 VAC, 50/60 Hz standard, 24 VDC is optional. Power consumption is 12 watts.
- LOOP POWER SUPPLY:** provides 24 VDC for two or three wire transmitter. Selection is by terminal wiring
- AMBIENT TEMPERATURE RANGE:** -20°F to +160°F (-30 to 70°C)
- SIGNAL INPUTS:** 4-20 mA DC, 0-1 to 0-20 mA DC, 1-5 VDC, 0-1 to 0-10 VDC or "RT3" temperature transducer.
- ELECTRONIC ENCLOSURES:** Type 4X epoxy/glass standard.
Optional explosion proof + 4X aluminum
- ANALOG OUTPUT:** 4-20 mA DC isolated, 1,000 ohms maximum. Better than 0.001 (12 bit) resolution.
- DIGITAL INTERFACE:** Optional RS-232C, RS-422 or RS-485.
- PROGRAM DATA ENTRY:** Board mounted keypad, 20 keys including function, enter, scroll up/down, and clear entry keys.
- PROGRAM PARAMETERS:** Display scaling, dampening, characterization of input signal (up to 20 points), relay set points, relay direct or reverse action, pump control rotation (lead/lag or alternate for up to 6 pumps), baud rate for digital output, lockout code, and system reset.
- READ ONLY PARAMETERS:** Measured value in engineering units, characterized measured value in engineering units, input signal values in current or voltage units, and current software version.
- INDICATION:** Board mounted sixteen character, alphanumeric LCD display. Failure mode LED alarm.
- MEMORY PROTECTION:** Non-volatile RAM. Maintains stored data for more than 5 years following loss of supply power. No need to replace batteries and reprogram.
- CONTROL/ALARM RELAYS:** Six 10 Amp @ 250 VAC, SPDT standard; DPDT is optional.
- WIRING CONNECTIONS:** Clamp type terminal strips provided for wire sizes up to 12 gage (2.1mm)

OUTLINE DIMENSIONS



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