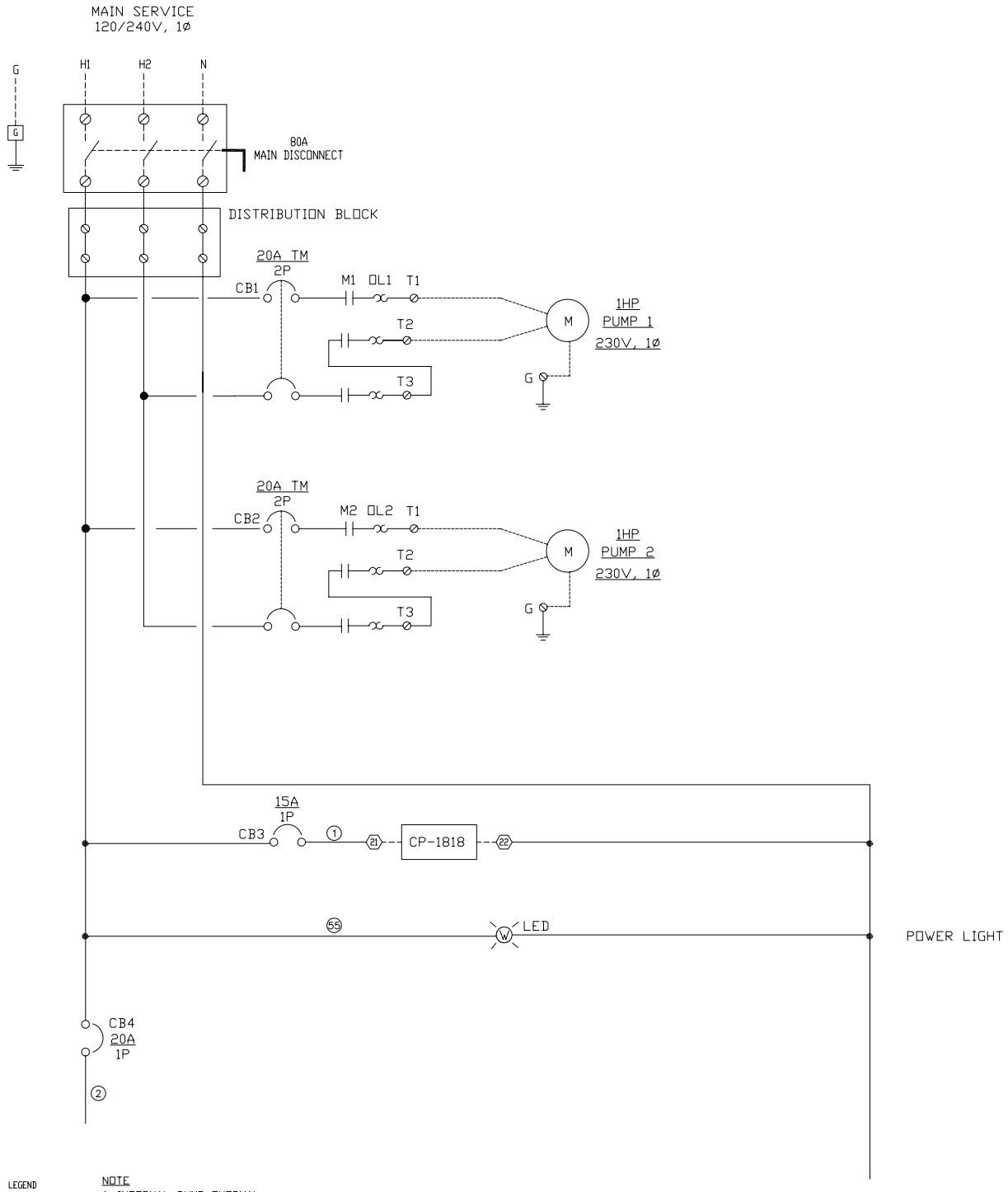


LEGEND

WIRING BY VENDOR

WIRING BY CUSTOMER

NOTE

1. INTERNAL PUMP THERMAL OVERLOAD IS RECOMMENDED.
2. PLC WILL INDICATE NUMBER OF HIGH LEVEL ALARMS AND NUMBER OF TIMES A PUMP IS TURNED TO HAND POSITION.

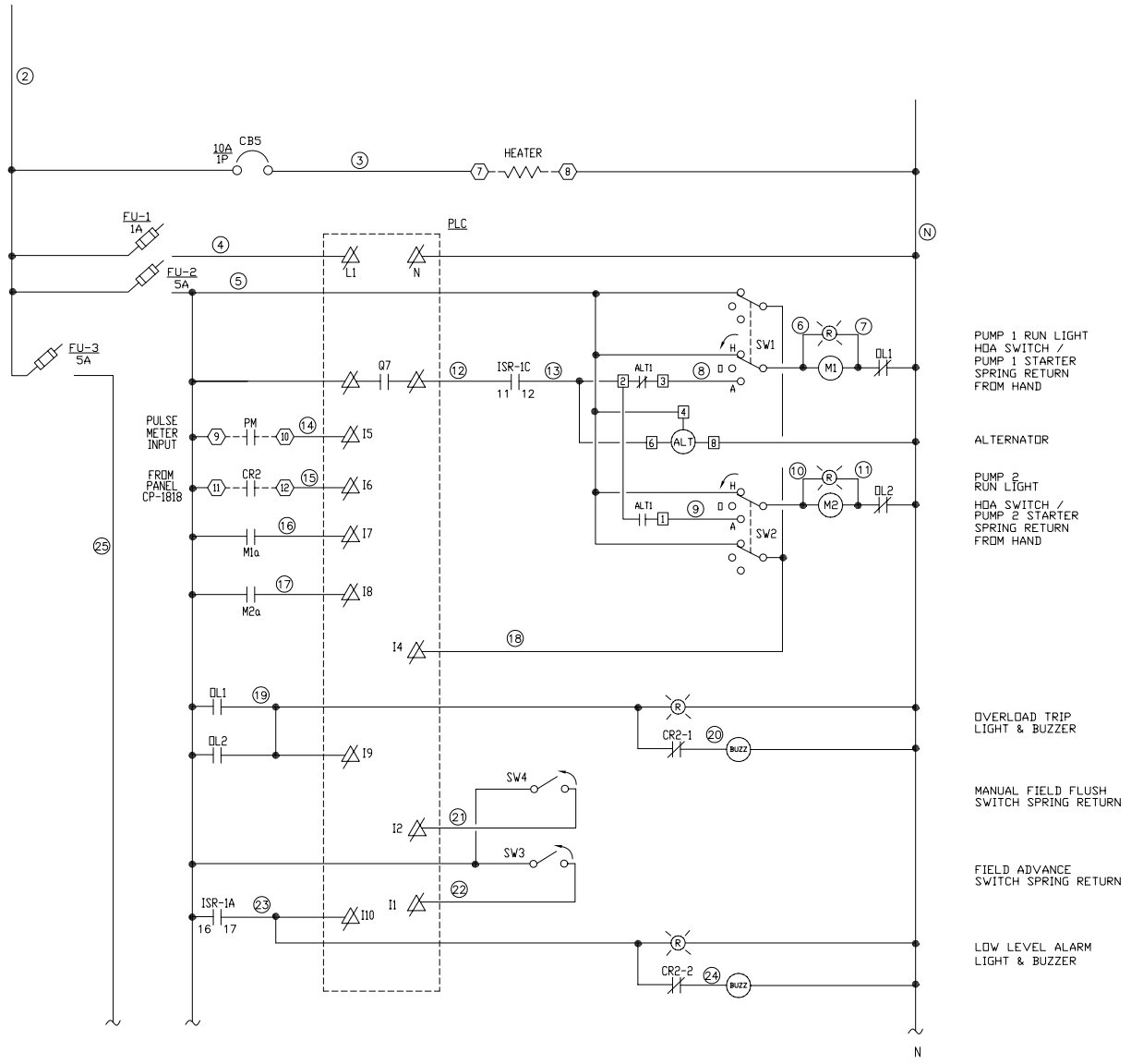
PROGRAM

PULSE 6 FIELDS W/O BACKWASH VALVE r1 FOR PANEL CP-1811

Delta Environmental Products, Inc.
P.O. Box 969 Denham Springs, LA 70727

Schematic Diagram
Filter System

DWN BY:	DATE:	SCALE:	DWG. NO.:	JOB NO.:
S.HODGES	05/09/08	N.T.S.	1 OF 6	CP-1811r1



LEGEND

—— WIRING BY VENDOR

---- WIRING BY CUSTOMER

NOTE

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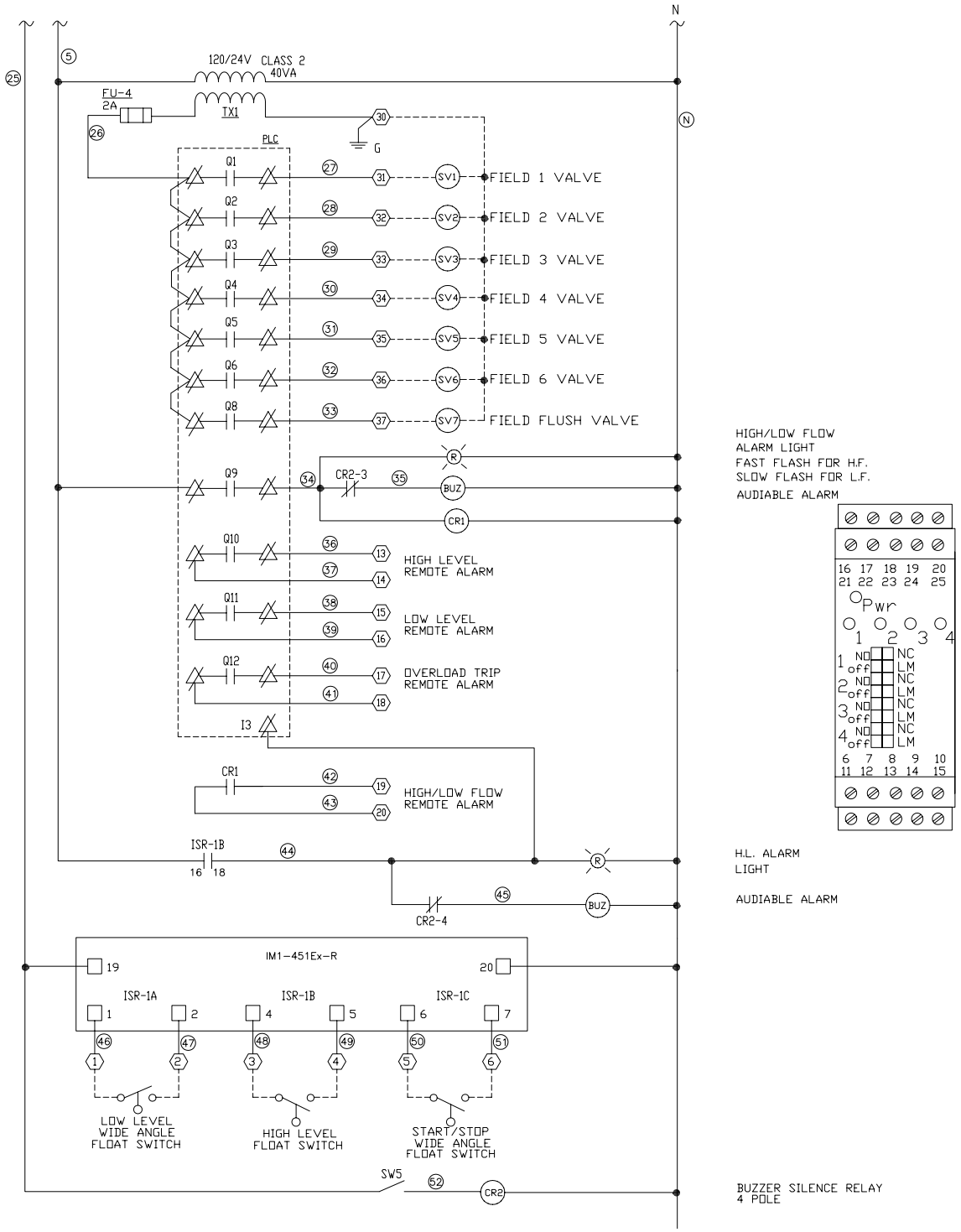
PROGRAM

PULSE 6 FIELDS W/O BACKWASH VALVE r1 FOR PANEL CP-1811

Delta Environmental Products, Inc.
P.O. Box 969 Denham Springs, LA 70727

Schematic Diagram
Filter System

DWN BY:	DATE:	SCALE:	DWG. NO.:	JOB NO.:
S.HODGES	05/09/08	N.T.S.	2 OF 6	CP-1811r1



LEGEND

WIRING BY VENDOR

WIRING BY CUSTOMER

NOTE

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2. PLC WILL INDICATE NUMBER OF HIGH LEVEL ALARMS AND NUMBER OF TIMES A PUMP IS TURNED TO HAND POSITION.

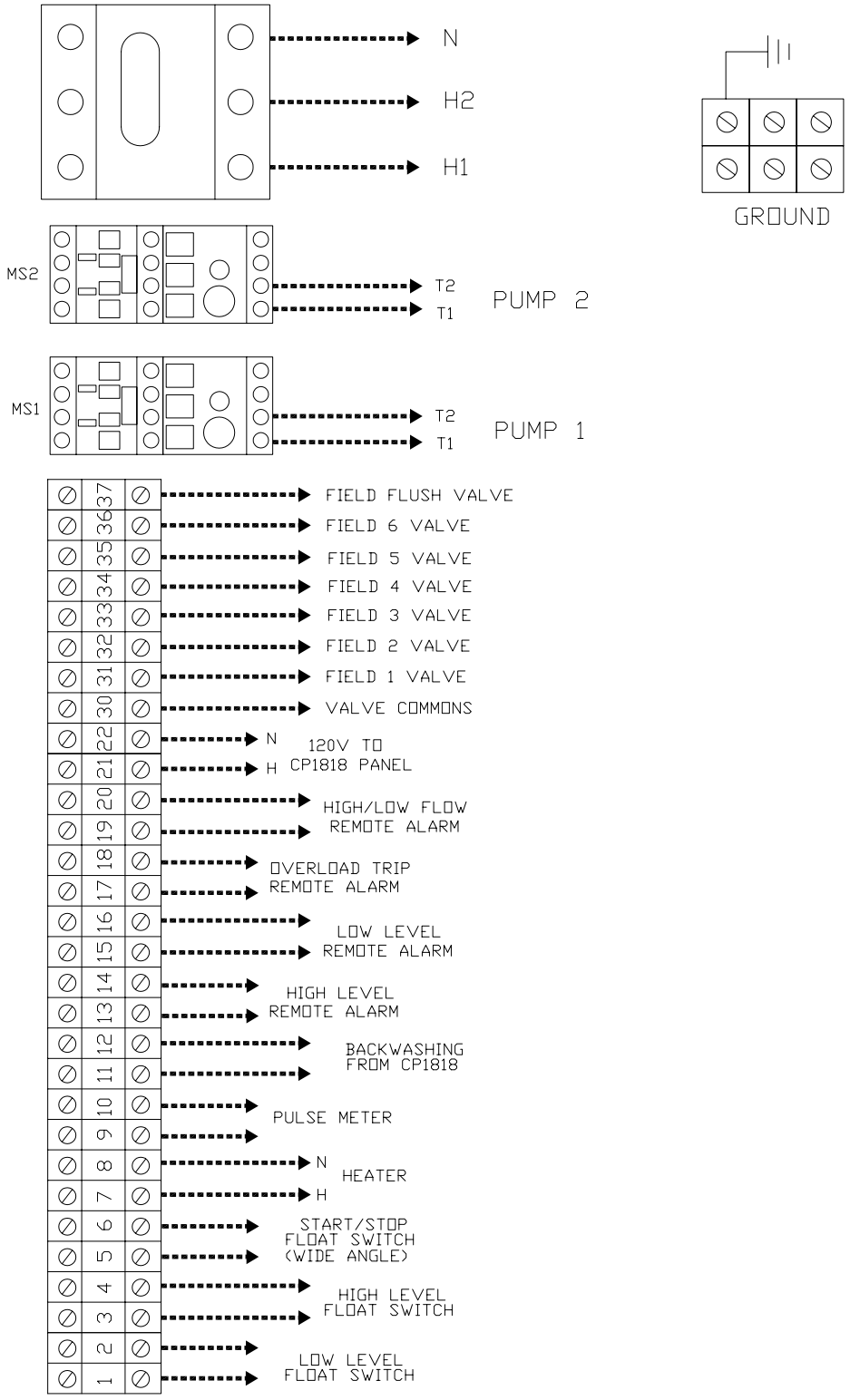
PROGRAM

PULSE 6 FIELDS W/O BACKWASH VALVE r1 FOR PANEL CP-1811

Schematic Diagram
Filter System

Delta Environmental Products, Inc.
P.O. Box 969 Denham Springs, LA 70727

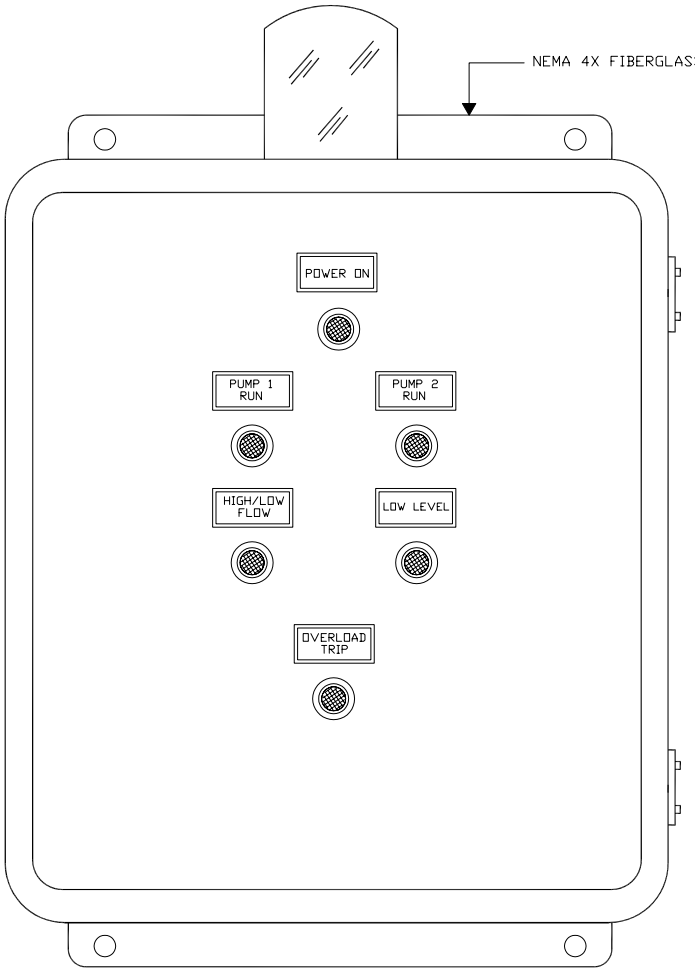
DWN BY:	DATE:	SCALE:	DWG. NO.:	JOB NO.:
S.HODGES	05/09/08	N.T.S.	3 OF 6	CP-1811r1



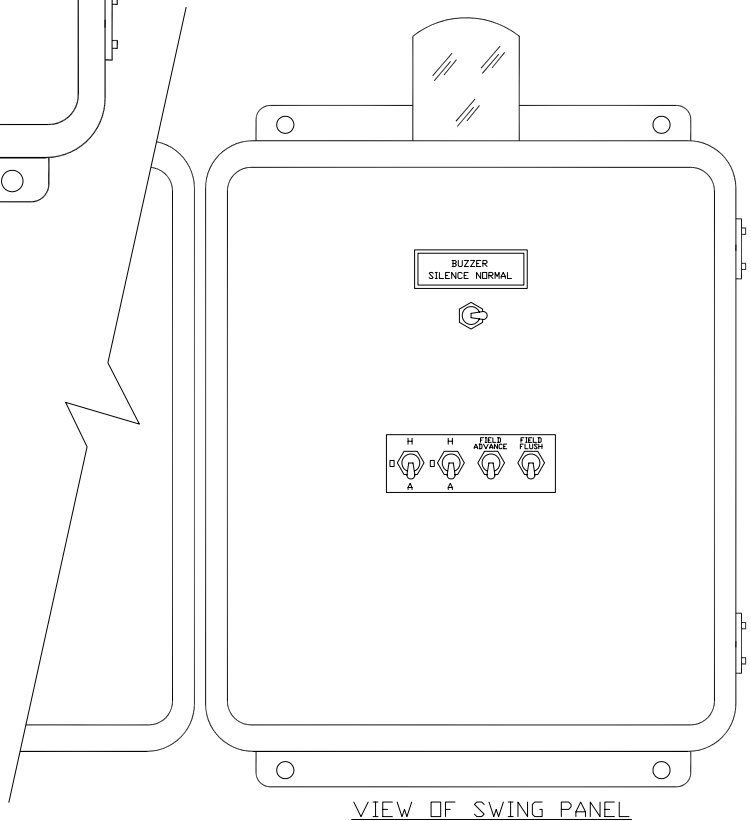
Schematic Diagram
Filter System

Delta Environmental Products, Inc.
P.O. Box 969 Denham Springs, LA 70727

DWN BY:	DATE:	SCALE:	DWG. NO.:	JOB NO.:
S.HODGES	05/09/08	N.T.S.	4 OF 6	CP-1811r1



VIEW OF FRONT OF ENCLOSURE

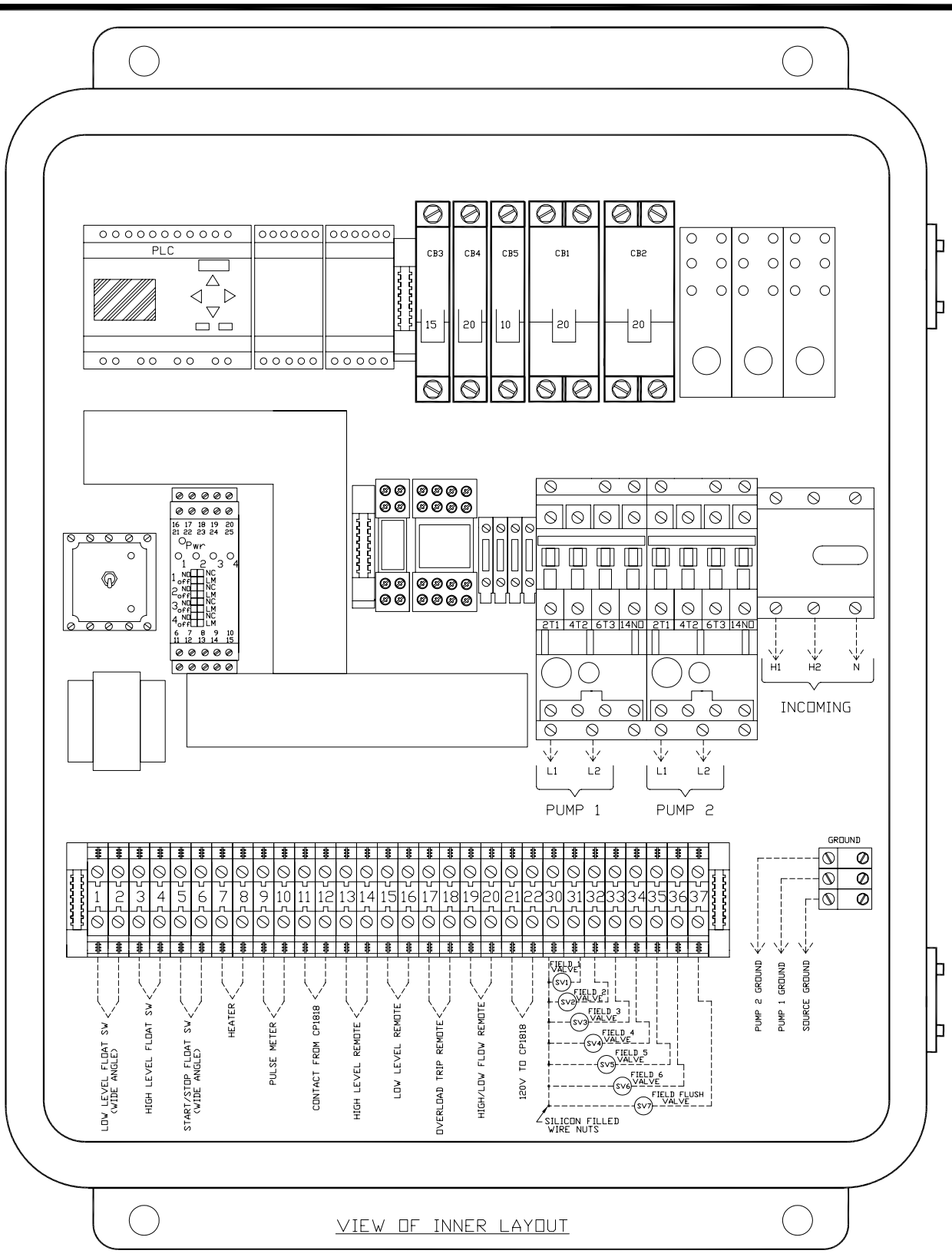


VIEW OF SWING PANEL

Delta Environmental Products, Inc.
P.O. Box 969 Denham Springs, LA 70727

ENCLOSURE
Filter System

DWN BY:	DATE:	SCALE:	DWG. NO.:	JOB NO.:
S.HODGES	05/09/08	N.T.S.	5 OF 6	CP-1811r1



VIEW OF INNER LAYOUT

Delta Environmental Products, Inc.
P.O. Box 969 Denham Springs, LA 70727

ENCLOSURE
Filter System

DWN BY:	DATE:	SCALE:	DWG. NO.:	JOB NO.:
S.HODGES	05/09/08	N.T.S.	6 OF 6	CP-1811r1

CP 1811

INPUTS

I1 – FIELD ADVANCE SWITCH
I2 – MANUAL FIELD FLUSH SWITCH
I3 – HIGH LEVEL ALARM
I4 – HOA SWITCHES IN HAND POSITION
I5 – PULSE METER
I6 – FILTER BACKWASHING INPUT FROM CP1818
I7 – PUMP 1 RUN CONTACT
I8 – PUMP 2 RUN CONTACT
I9 – PUMP 1 & 2 FAIL FROM O.L.
I10 – LOW LEVEL ALARM

OUTPUTS

Q1 - FIELD 1 VALVE
Q2 - FIELD 2 VALVE
Q3 - FIELD 3 VALVE
Q4 - FIELD 4 VALVE
Q5 - FIELD 5 VALVE
Q6 - FIELD 6 VALVE
Q7 - PUMP CALL
Q8 – FIELD FLUSH VALVE
Q9 - HIGH/LOW FLOW ALARM (FAST = HF, SLOW = LF)
Q10- HIGH LEVEL REMOTE ALARM
Q11- LOW LEVEL REMOTE ALARM
Q12- PUMP FAIL REMOTE ALARM

IN PLC

PUMP 1 RUN TIME
PUMP 2 RUN TIME
PUMP 1 START COUNTS
PUMP 2 START COUNTS
NUMBER OF TIMES STARTED ON HIGH LEVEL
NUMBER OF TIMES MANUALLY STARTED

GENERAL INFORMATION
PANEL CP-1811

1. Time between dosing can be set.
2. One field will dose for each pump cycle.
3. Each field dosing time can be different.
4. Any field (except field 6) can be taken out of service by setting dosing time at 0 seconds.
5. Dosing valves are normally closed.
6. Vacuum relief valves will be required on each line for field draining if required.

BLOCK SETTINGS

BLOCK	DESCRIPTION	NON-ADJUST	FACTORY SETTINGS	PLC NUMERATOR
B01	Field 1 Run Time		12 minutes	00:12h
B02	Field 2 Run Time		12 minutes	00:12h
B03	Field 3 Run Time		12 minutes	00:12h
B04	Field 4 Run Time		12 minutes	00:12h
B05	Field 5 Run Time		12 minutes	00:12h
B06	Field 6 Run Time		12 minutes	00:12h
B07	TH = Pulse To Start (Do Not Change) TL = Off Time		1 second 2 hours	01:00s 02:00h
B08	Field Flush Time After Pump Starts After Numerous Cycles		2 minutes	02:00m
	Open Field Flush Valve When Pump Stops	X	0 minutes	00:00m
	Open Field Flush Valve After Momentary Switch Operation	X	1 minute	01:00m

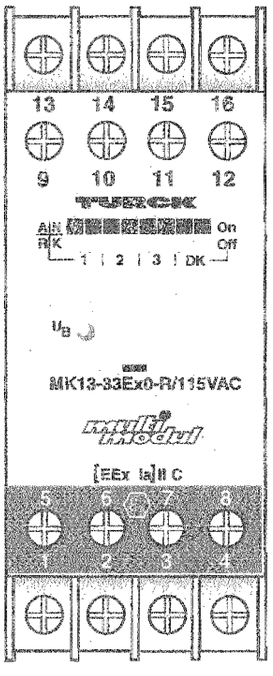
Contd.

Contd.

BLOCK	DESCRIPTION	NON-ADJUST	FACTORY SETTINGS	PLC NUMERATOR
B37	No. of Pump Starts Until Field Flush Valve Opens		84	84
(1) B39	No. of Fields		6	6
(2) B54	High Flow On/Off Alarm		50 On 40 Off	50 40
(3) B59	Low Flow On/Off Alarm		5 On 6 Off	5 6

(1) Only determines number of sequential field flush cycles when time to field flush.
(2) Alarms over 50, resets under 40 GPM
(3) Alarms under 5, resets over 6 GPM

TURCK Multiple Channel Switching Amplifiers



These devices are three-channel switching amplifiers with intrinsically safe input circuits. They are used to isolate and transfer discrete signals from a hazardous location to a non-hazardous location. Inputs are typically NAMUR sensors or dry contacts, although devices providing a variable resistance conforming to DIN 19234 may be used - e.g. variable resistors, thermistors, etc.

Each device provides one SPST relay output per channel. When the relay is energized, the 2-color switching status LED for that channel illuminates yellow.

Eight programming switches located on the front cover of each device select the output mode of each channel and enable input circuit monitoring.

The three switches labeled "A/R" select the output mode for each channel. Positions "A" and "R" represent direct mode (N.O.) and inverse mode (N.C.), respectively. The output function is dependent on the input device. See the truth table opposite for detailed output function.

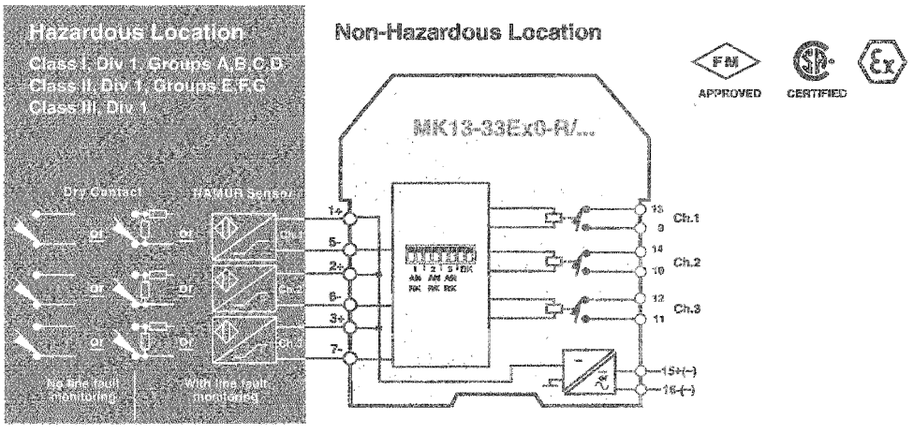
The three switches labeled "N/K" activate input circuit monitoring for each channel. Position "N" enables input circuit monitoring; position "K" disables input circuit monitoring.

The two switches labeled "D and "K" determine which conditions should be monitored for all channels with enabled input circuit monitoring. When switch "D" is set to ON, input circuits will be monitored for wire-break. When switch "K" is set to ON, input circuits will be monitored for short-circuit. When input circuit monitoring is enabled and a corresponding fault in the input circuit occurs, the respective output is de-energized and the 2-color switching status LED illuminates red. If dry contacts are the input devices, resistors must be connected to the contacts or the "N/K" switch for that channel must be set to position "K". See the Contact Configuration specification for correct resistor installation.

A green LED indicates "Power ON" status.

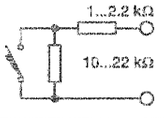
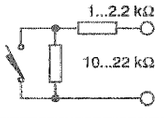
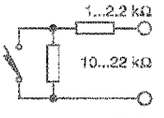
MK13-33Ex0-R/24VDC
MK13-33Ex0-R/115VAC
MK13-33Ex0-R/230VAC

Connection Diagram

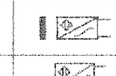
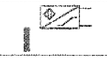
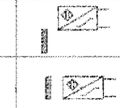
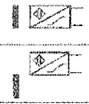
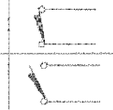
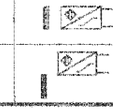


TURCK

Three-Channel SPST Relay Output Programmable Line Monitoring MK13-33Ex0-R/...(24VDC, 115VAC, 230VAC)

Type	**MK13-33Ex0-R/24VDC**	**MK13-33Ex0-R/115VAC**	**MK13-33Ex0-R/230VAC**
ID Number	M7541147	M7541142	M7541140
Power Supply			
Supply voltage	10-30 VDC, ≤10% ripple	98-126 VAC, 48-62 Hz	196-253 VAC, 48-62 Hz
Power consumption	≤2 W	≤1.5 VA	≤1.5 VA
Galvanic isolation	between input, output and supply circuits, test voltage 2.5 kVrms	between input, output and supply circuits, test voltage 2.5 kVrms	between input, output and supply circuits, test voltage 2.5 kVrms
Input Circuits			
Nominal operating characteristics (per DIN 19234)			
- Voltage	8 V	8 V	8 V
- Current	8 mA	8 mA	8 mA
- Switching threshold	1.55 mA	1.55 mA	1.55 mA
Intrinsic Safety Parameters	See page 50	See page 50	See page 50
Contact Configuration			
Output Circuits	one SPST relay per channel	one SPST relay per channel	one SPST relay per channel
Switching voltage	250 V	250 V	250 V
Switching current per channel	2 A	2 A	2 A
Maximum load	500 VA / 60 W	500 VA / 60 W	500 VA / 60 W
Contact material	AgCdO +3µ Au	AgCdO +3µ Au	AgCdO +3µ Au
Switching frequency	≤10 Hz	≤10 Hz	≤10 Hz
Housing Style	Diagram D (page 2)	Diagram D (page 2)	Diagram D (page 2)

Truth Table

Programming	**Input** (terminals 1-5, 2-6, 3-7)			**Output** (D and/or K on)				**Input**	**Output** (D & K off)	
				Normal		Short or Wire-break			Normal	
A/R Switch Position	**Dry Contacts**	**Inductive NAMUR**	**Capacitive NAMUR**	Chan.1 Chan.2 Chan.3	**LED** Yellow	Chan.1 Chan.2 Chan.3	**LED** Red	**Dry Contacts**	Channel 1 Channel 2 Channel 3	**LED** Yellow
A				De-ener.	Off	De-ener.	On		Energized	On
A				Ener.	On	De-ener.	On		De-energized	Off
R				Ener.	On	De-ener.	On		De-energized	Off
R				De-ener.	Off	De-ener.	On		Energized	On