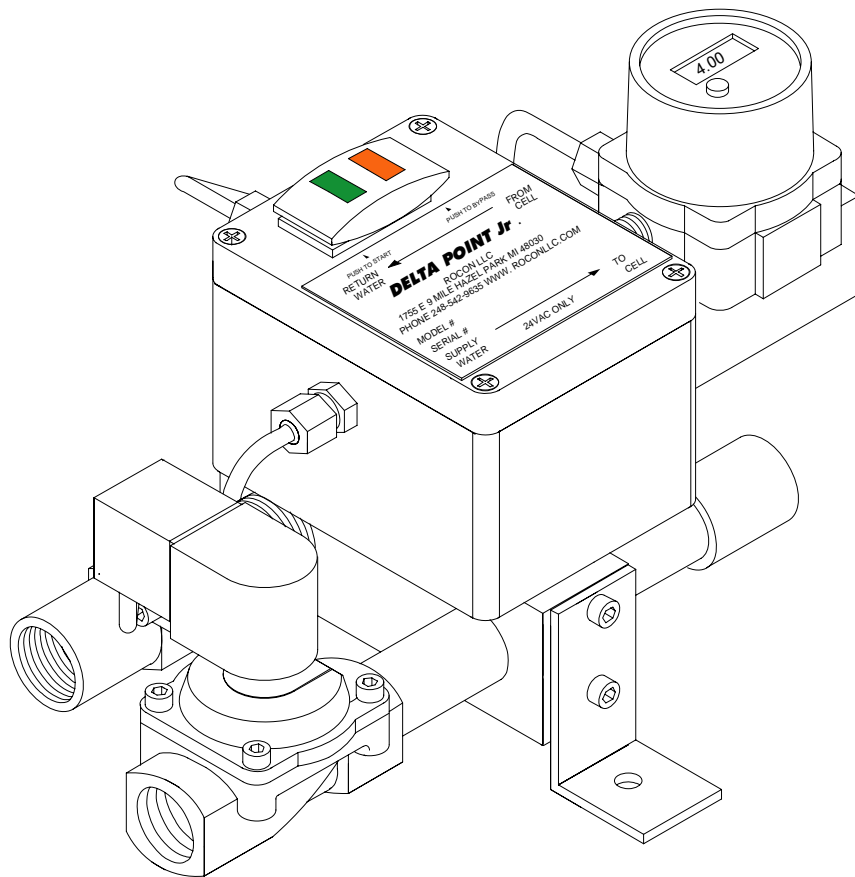


DELTAPOINT Jr

Installation & Operation Manual

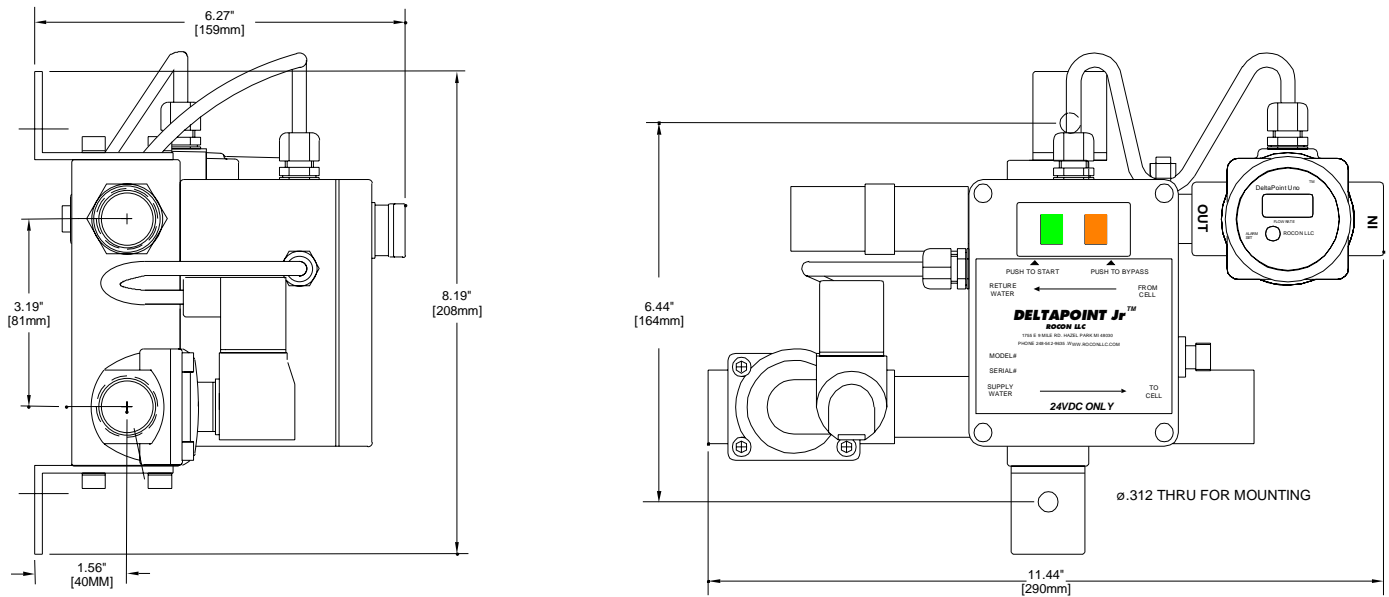
4 GPM / 12 GPM Units



ROCON LLC

1755 East Nine Mile Road, Hazel Park, MI 48030
PH 248-542-9635, Fax 248-584-1490 www.roconllc.com

ROCON LLC – Delta Point Jr. – Cooling Water Shut-Off Valve



HOW IT WORKS

The water enters the unit through the shut-off valve inlet port, labeled SUPPLY. The TO outlet from the manifold is the water flow “TO” the weld gun arms or cell. The water flow passes through the weld gun arms and transformer if in circuit. The return water from these devices is connected to the Flow Meter “IN” port or “FROM” on cover plate. The Flow Meter is an inline flow meter that utilizes the vortex shedding measuring principle. The water strikes a bluff body that imparts alternating vortices downstream of the bluff that creates a pressure on a sensor body containing a piezoelectric crystal. The movement of the sensor is proportional to the velocity of the water flow. Vortex technology yields a meter with no moving parts to hang up or wear. The water passes through the check valve and exits the unit through the RETURN outlet port. The flow meter displays, via LED display, the actual water flow on the return leg.

If water flow is present, the flow meter sends a OK TO WELD signal to the weld controller and the weld cycle starts. If a cap is pulled or the water is shut-off the flow meter detects change and sends a FAULT signal to the weld controller. The shut-off valve stops the supply water flow leg and the check valve stops the return water leg from reversing flow through the gun arms.

Status / Indicator Lights: The Flow Switch LED displays actual water flow in the return water leg. The rocker switch button has 2 position: START light is green and indicates water flow is present and OK to weld. The BYPASS light is orange and indicates unit is no longer monitoring water flow. The shut-off valve LED confirms that the coil has power therefore the valve is open. The shut-off valve is a Normally Closed valve held Open.

INSTALLATION

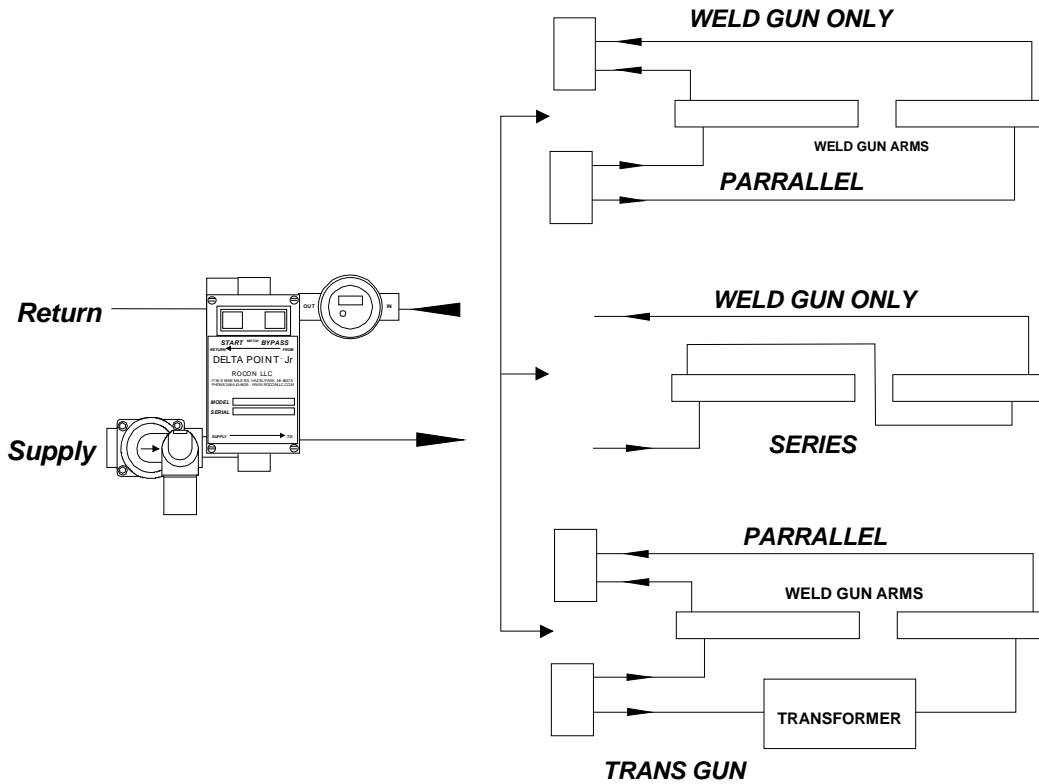
Mechanical

Mounting Location: The unit can be mounted on the robot or on the fence line. The unit can be rotated 90 degrees or 180 degrees. The Water Flow Switch LED Display can be rotated 180 degrees. Refer to the maintenance section.

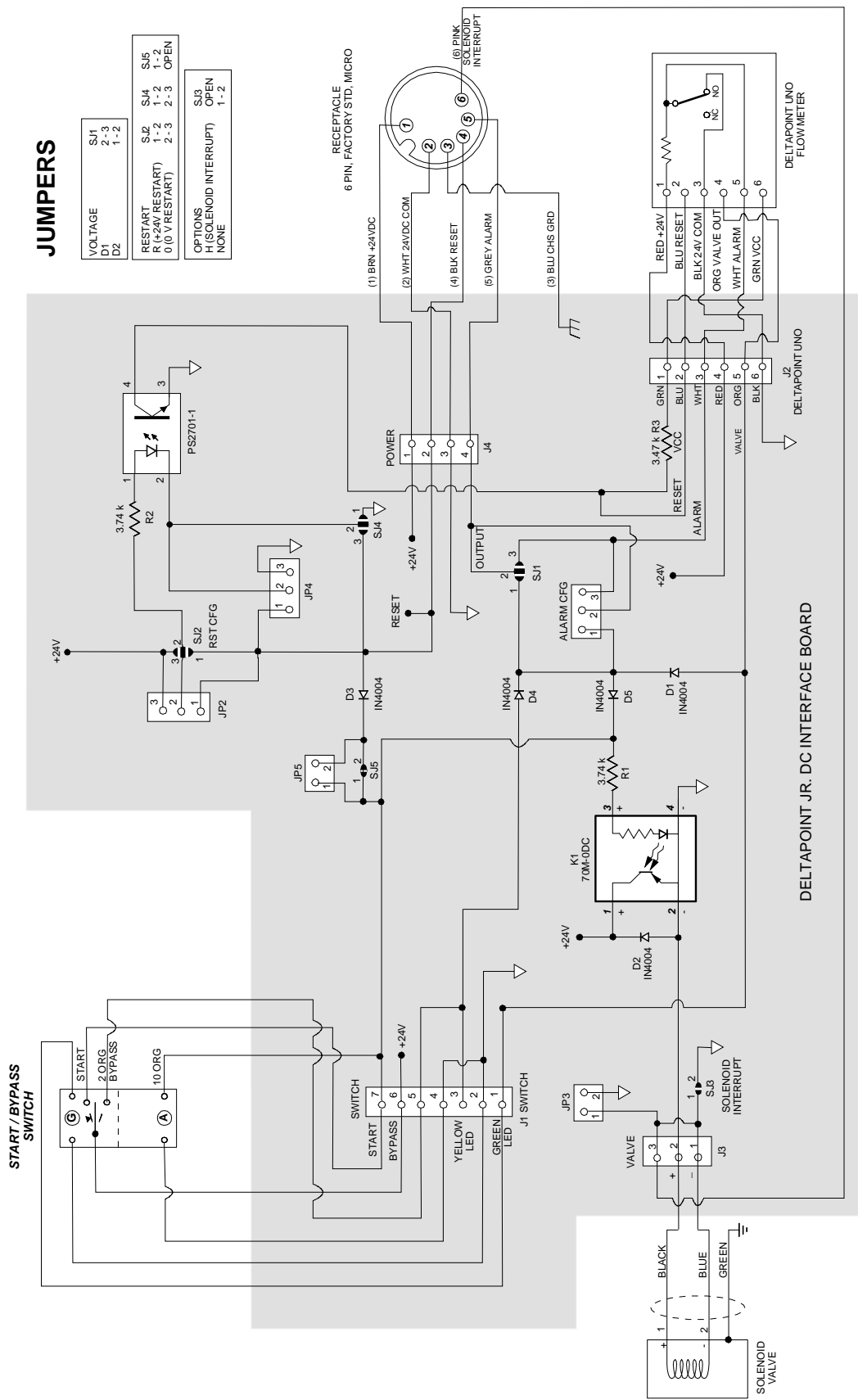
Mounting Holes: Hold Down hole pattern - 2 holes, 5/16-inch (8 mm) diameter, inline and 6 3/16 inches (157 mm) apart.

Fluid connection: Supply and Return Port Size is 3/4 NPT Female, TO and FROM Ports Size is 1/2 NPT Female Port Identification located switch box cover.

Suggested Hose Dress:



DELTAPOINT JR. - ELECTRICAL CIRCUIT - 3 GPM / 12 GPM RECEP = 6 PIN, MICRO, JUMPERS FOR (NPN / PNP - RESTART HIGH / LOW - SOLENOID INTERRUPT)



JUMPERS

VOLTAGE	SJ1			
D1	2-3	S/P	S/M	S/S
D2	1-2	1-2	1-2	1-2
RESTART				
R (+24V RESTART)	1-2	1-2	2-3	OPEN
O (0 V RESTART)	2-3	2-3	2-3	OPEN
OPTIONS				
H (SOLENOID INTERRUPT)				S/S
NONE				OPEN
				1-2

FLOW METER CONFIGURATION (SET-UP)

Honda Marysville Demo Unit: Fault Alarm factory set at 2.00 GPM. Fault when flow below.

Factory Setting:

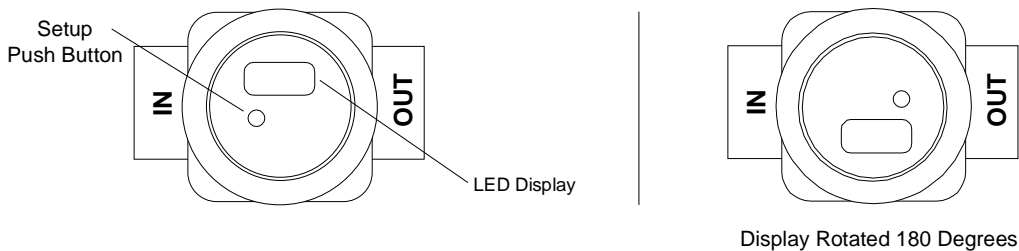
4 GPM Unit

Engineering Units	Flow Set Point	Relay*
GPM	1.0	NC

12 GPM Unit

Engineering Units	Flow Set Point	Relay*
GPM	1.5	NC

*Programmed at factory ONLY.



Vortex Flow Meter – Setup and Alternate Display Position

Flow Meter Set Up

- A1 - Power up the meter – this can be done at the bench or when installed.
- A2 - On Power up, and no flow, the display will indicate “00.0” *Flashing*.

- B1 – Configuration Mode - Hold the Alarm Set *Button* “IN” until the display reads “_ _ _”
- B2 - Then “RELEASE” the button.

Programming Engineering Unit (GPM / LPM)

- C1 - The display will then read “G” or “L” for GPM or LPM.
- C2 - Use the Alarm Set button to toggle between the desired engineering unit (G or L).
- C3 - When the desired unit is displayed, “RELEASE” the button.
- C4 - *Wait* until the next parameter is automatically displayed.

Programming Flow Set Point

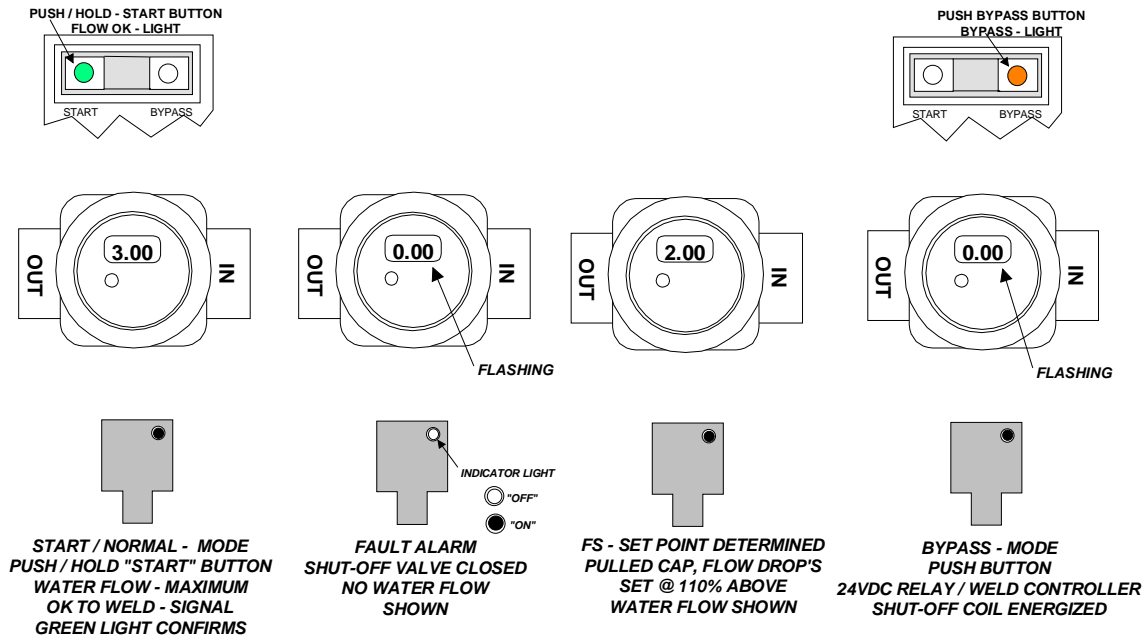
- D1 - The display will now be flashing and read “0.00” or previous set point.
- D2 - To reset to different flow set point, use the Alarm Set *Button* to enter a new value – “PUSH”
- D3 - Each push of the button will increment the set point by .2 for GPM & .5 for LPM – 4 GPM Unit or .4 for GPM & .8 for LPM – 12 GPM Unit. Starting at the minimum range of the meter. Once the highest setting is reach, the display will go back to “0.00”, as it rolls over to zero.
- D4 - When the desired set point is displayed,
- D5 - “WAIT” for the next parameter to be displayed.

Please Note: If there is no flow or very low flow (below the selected set point) the display will flash until flow is increased.

Once the meter is operating and a change in set point is desired, simply enter in to the configuration mode, wait until the set point is displayed, change it to the new value and then wait until the meter returns to the run mode.

SUGGESTED Delta Point Jr. – Set Up & Operation

- 1 Confirm that the hoses to weld gun arms are hoses correctly – see Install / Hose Dress
 - 2 Open the water shut-off ball valves to the weld gun or cell.
 - 3 Plug in the electrical connector to the unit.
 - 4 Push Down and Hold the Start Button – “5 seconds” – Observe light in Start Switch and Shut-Off Coil activated.
 - 5 Observe that the Flow Switch LED display is indicating water flow.
 - 5A If the LED display is 0.00 and flashing this indicates insufficient water flow to operate flow switch.
Refer Trouble Shooting Section – Flow Switch
 - 6 Record water flow to weld gun circuit or cell. Example: 3.5 GPM
 - 7 Set Flow Switch *set point* to shut-off ½ to ¾ gpm lower
- OR**
- 8 Pull one of the caps off the weld gun arm and take another reading. Example 2.5 GPM is displayed.
 - 9 Set Flow Switch *setpoint* at 110% above new flow rate after cap pulled. Example: 2.5 GPM x 110% = 2.7 GPM set point.
 - 10 Replace cap, repeat step #4.
 - 11 Repeat step #7. Flow Switch Faults Out, Water flow Fault received at Weld Controller and the water is shut-off.
 - 10A If the Flow Switch did not Fault out, increase setpoint to 120%, continue to increase until satisfactory results.
 - 10B Repeat steps 7 or 8 – 10 until unit shut-off to your satisfaction.
 - 11 Repeat steps 6 – 10 on the other gun arm.
 - 12 Re-Start Flow Switch per step 4.
 - 13 Close one of the supply or return water shut-off ball valves and confirm flow fault at weld controller.
 - 14 If all of the above is performed and satisfactory, unit is ready for production line operation.



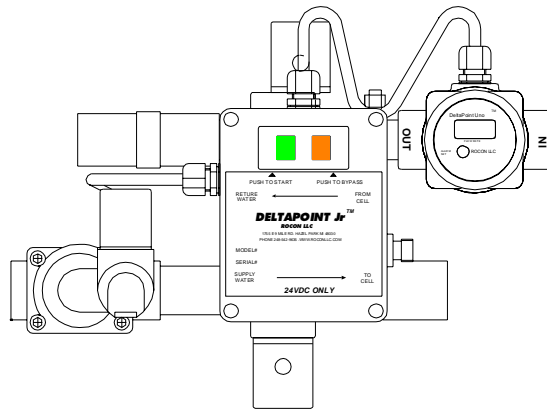
Start Mode: Push “START” switch button (Green) and hold down for 5 seconds. Shut-Off Valve coil is energized and any trapped air is removed. The solid column of water activates the Water Flow Switch in return water leg. When flow is above the alarm set point, the OK TO WELD relay signal sent to weld controller and the green flow OK light is lit on the start switch. LED Display indicates water flow in return water leg.

Normal Operation Mode: Start push button Green light activated, Coil LED Yellow light activated and the Flow Switch display indicates actual water flow in cooling circuit. OK TO WELD relay to weld controller present.

Alarm Mode: Cap pulled or water turned off. Flow Switch set point alarm activated. Fault relay sent to weld controller. Coil de-energized and shuts off supply water. Check valve stops return water leg.

Bypass Mode: Push “BYPASS” switch button (Orange or Amber) down. Feature sends OK TO WELD 24vdc signal to weld controller. Please Note: In this mode the shut-off valve Manual Override STEM must be activated, refer to shut-off valve spec sheet on page 9. PLEASE NOTE: Water flow must be above alarm set point to prevent fault alarm to weld controller.

TROUBLE SHOOTING



DeltaPoint Uno Flow Switch

1 Unit will not indicate water flow? Display: 0.00 *Flashing*.

1A The Vortex Water Flow Switch depending on size requires minimal water flow to operate.

A = 0.5 GPM (1.9 LPM), B = 1.5 GPM (5.7 LPM).

1B Confirm water flow is present – pull one of the weld gun arm caps off.

1C If no water check shut-off ball valves or pumps.

1D Measure the return water flow IE Mechanical Flow Meter or direct the water flow into bucket for 10 seconds, measure results and multiply by 6 to determine actual water flow

1E Confirm that the water flow is in the right direction. IE Supply direction = TO CELL, Return = FROM CELL.

2 Unit will not power up – display will not light up.

2A Confirm unit has power – BYPASS light and the flow switch are both lit up.

2B Replace unit if power is present and confirmed. Contact Factory.

3 Unit display: Water flow jumping around.

3A Turn off water ball valves and remove electrical connector.

3B Remove Bluff Stem under side of flow switch, clean if dirty. Replace.

3C If water is contaminated suggest installing water filter.

3D If problem is not resolved consult factory.

Shut-Off Valve

1 Valve leaks when cap pulled.

1A Confirm that the OVERRIDE Stem is not in the BYPASS position.

1A Confirm leak is from shut-off valve or check valve.

Procedure to determine leak:

Shut off supply & return ball valves. Remove both the weld gun arm caps. Turn the supply ball valve ¼ open. Observe weld gun – no leak. Turn the ball valve ½ or fully open. If leak proceed to next step. If no leak refer to Check Valve leak procedure.

1B Remove diaphragm and clean. Confirm orifice in diaphragm is not block. Reassemble.

1C If leaking persist install water filter – size

2 Valve will not open or LED will not activate when powered up.

2A Replace coil.

Check Valve

1 Valve leaks when cap pulled.

1A Confirm leak from Check Valve

Procedure to determine leak:

Shut off supply & return ball valves. Remove the hose that is connected at check valve. Turn the supply ball valve ¼ open.

Observe check valve outlet port, no leak. Turn the ball valve ½ or fully open. If leak proceed to next step.

1A Remove check valve from manifold. disassemble / clean. Reassemble / install. If problem persist install water filter.

SHUT-OFF VALVE

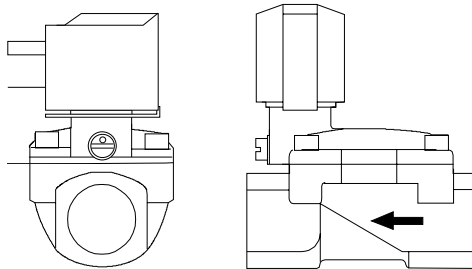
KIP / NORGREN Company

Model 8241

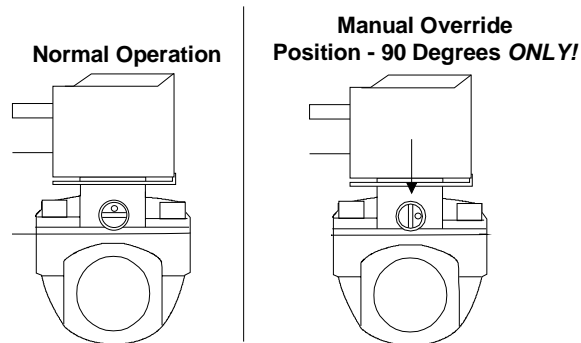
SPECIFICATIONS

Function	2-Way Normally Closed
Ports	3/4 NPT
Orifice	3/4
Cv Factor	7.3
Pressure Range	1.5 – 232 PSI (0.1 – 16 bar)
Temperature Rating	
Ambient	14 F to 122 F (-10 C to + 50 C)
Fluid	14 F to 194 F (-10 C to + 90 C)
Power Rating	6.5 Watts
Voltage	24 Volt DC
Power Consumption	
DC	6.5 W
Electrical Connector	DIN Style Plug w Removable Cable Plug Adapter
Materials of Construction	
Body	Brass
Seal	Buna
Other Wetted Parts	Stainless Steel, PVDF, Brass
Coil	Class F, Molded, Continuous Duty, UL Recognized

Contact Factory for Spare Parts



Manual Override



DELTAPOINT Jr

HOW TO ORDER Select appropriate symbols and build a model code number, as in example shown:

EXAMPLE :

DPJ - **B-6/4** - **6EF2D10** - **H** - **1111** - *********

FLOW SWITCH RANGE	Port/Pipe Size in Inches NPT for Supply and Return Lines	Port/Pipe Size in Inches NPT for Pipes To and From Cell	Symbol
0.4 - 4.0 GPM (2 - 15 LPM)	3/4	1/2	= A-6/4
1.2 - 12 GPM (5 - 45 LPM)	3/4	1/2	= B-6/4
2.5 - 25 GPM (9 - 95 LPM)	3/4	3/4	= C-6

Control Number If Required

DESIGN NUMBER
Subject to change

OPTIONS

No Options Picked = N
Shut-Off Valve Air Operated..... = A

ELECTRICAL

1 - RECEPTACLE CONNECTOR

6 Pin = 6
6 Pin, Turck, Micro, FS4.6 (EOA)... = 6E

2 - MANUFACTURER

Factory Standard = F
Others Consult Factory

3 - CONNECTOR TYPE

Mini = 1
Micro = 2

4 - VOLTAGE

24 Volt DC NPN (Sourcing) (24V A).. = D1
24 Volt DC PNP (Sinking) (0V A)..... = D2

5 - RESTART SIGNAL - DC ONLY

Std. 24 VDC = Active HIGH Restart = R
0 VDC = Active LOW Restart = 0

DPJMC0305