

# DeltaPoint®

## Resistance welding tip loss monitor



### Description

DeltaPoint® detects leaks from cap loss, hose burst or inadvertent shutoff. Monitoring robotic cells, pedestal welders or multiple work cells. Water is shut down to stop the leak and a signal is sent to the controller. The flow sensors have no moving parts to be affected by entrained contaminants. The only mechanical parts are the shut off and check valves.

### Features

- Stand alone package for installation ease
- Sensor has no moving parts to wear, break or cause nuisance tripping
- Visual flow indication reads in GPM or LPM
- Visual Temperature indication reads in degrees F or C
- User Programmable: Leak rate alarm, response time, restart delay, Flow OK level, temperature fault level and minimum flow monitoring.
- Bypass - Electrical & Mechanical
- Available Versions: AC, DC, DeviceNet, Ethernet and Profinet
- Available Range: 6 GPM (23 LPM), 12 GPM (45 LPM) and 50 GPM (190 LPM)
- Water/Glycol coolant up to 20% mix
- Alarms are digital or go from 0 to max voltage
- Female micro-connectors

### Unit Specifications

#### General

- Pressure Drop: See chart
- Differential Pressure Limits: 5 – 80 PSID (0.3 – 5.5 Bar)
- Maximum Operation Pressure 190 PSI (13 Bar)
- Fluid Temperature Limits 35-210°F (2-99°C)
- Ambient Temperature Limits: 32 – 122 F (0-50°C)
- Weight: 13.5 Lb (6.1 kg) / 22 Lb (10 kg)  
Weight with CPH option: 18.7 Lb (8.5kg)
- Wetted Material: Brass
- Electrical Enclosure: Aluminum Optional mounting bracket
- Optional valves: standard, heavy duty and air operated
- Porting: ¼ NPTF or BSPT

#### Flow / Temperature Sensors

- Accuracy ± 2% Full Scale Flow, ±1% Temperature
- Repeatability ± .25% of actual flow
- Response Time Flow: 1 second to 63% of flow change
- Response Time Temperature: 1.8 seconds
- Material: PVDF (Kynar)

#### Solenoid Valve

- Style: Diaphragm, 2-way pilot operated, NC
- Cv: 8.4
- Mechanical Bypass Standard
- Response Time: 1-1.5 seconds to shut off water. Length of hose run from unit to weld gun effects response time.
- Material: Forged Brass
- Seal: NBR (Buna N)

#### Check Valve

- Style: Piston, O ring seal
- Material: Forged Brass
- Seal: NBR (Buna N)

### Electrical Specifications

- AC, DC, Ethernet, DeviceNet or Profinet
- Pass-through option (DeviceNet only)

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

Example: **DPL- 12GM- 6- Q-**

**D15AB-FD11-F-N**

MAX FLOW RATE		
.6 - 6 GPM (2.3 - 23 LPM)	=	6GM
1.2 - 12 GPM (4.5 - 45 LPM)	=	<b>12GM</b>
2.3 - 23 LPM (.6 - 6 GPM)	=	23LM
4.5 - 45 LPM (1.2 - 12 GPM)	=	45LM
19 - 190 LPM (5 - 50 GPM)	=	190LM

**NOTE:** CPH option available with 23LM rate only.

PORT	SIZE
3/4" NPTF (available with 6GPM or 12GPM)	= 6
1" NPTF (available with 50GPM only)	= 8
3/4" NPTF Supply & Return AND 1.2" NPTF To and From Cell (available with CPH option only)	= 6/4

**ELECTRONIC BOARD REVISION** = **Q**

**ELECTRICAL CONNECTOR TYPE. Select one only from AC, DC, DeviceNet, EtherNet or Profinet:**

**NOTE:** With your DC Connector Selection, also select one EACH wiring option where provided in blue.

DC PIN CONNECTOR WIRING OPTIONS		
<b>DC 5 pin Mini</b>		= <b>D15</b>
1: Grey	0 VDC	
4: White	Remote Reset	
	<u>Select 1 of the 2 options:</u>	
	0 VDC = A	
	+24 VDC = B	= <b>B</b>
3: Black	Chassis Ground	
2: Red	Alarm Out	
	<u>Select 1 of the 3 options:</u>	
	0 VDC (NPN) = A	= <b>A</b>
	+24 VDC (PNP) = B	
	SSRNC = C	
5: Blue	+24 VDC	
<b>DC 4 pin Micro</b>		= <b>D24</b>
1: Brown	+24 VDC	
2: White	Remote Reset	
	<u>Select 1 of the 2 options:</u>	
	0 VDC = A	
	+24 VDC = B	
3: Blue	0 VDC	
4: Black	Alarm Out	
	<u>Select 1 of the 3 options:</u>	
	0 VDC (NPN) = A	
	+24 VDC (PNP) = B	
	SSRNC = C	
<b>DC 4 pin Micro</b>		= <b>D24F</b>
1: Brown	+24 VDC	
2: White	0 VDC	
3: Blue	Remote Reset	
	<u>Select 1 of the 2 options:</u>	
	0 VDC = A	
	+24 VDC = B	
4: Black	Alarm Out	
	<u>Select 1 of the 3 options:</u>	
	0 VDC (NPN) = A	
	+24 VDC (PNP) = B	
	SSRNC = C	
<b>DC 4 pin Micro</b>		= <b>D24W</b>
1: Brown	+24 VDC	
3: Blue	Remote Reset	
	<u>Select 1 of the 2 options:</u>	
	0 VDC = A	
	+24 VDC = B	
2: White	Alarm Out	
	<u>Select 1 of the 3 options:</u>	
	0 VDC (NPN) = A	
	+24 VDC (PNP) = B	
	SSRNC = C	
4: Black	0 VDC	
<b>DC 5 pin Micro</b>		= <b>D25</b>
1: Brown	+24 VDC	
2: White	0 VDC	
3: Blue	Chassis Ground	
4: Black	Remote Reset	
	<u>Select 1 of the 2 options:</u>	
	0 VDC = A	
	+24 VDC = B	
5: Grey	Alarm Out	
	<u>Select 1 of the 3 options:</u>	
	0 VDC (NPN) = A	
	+24 VDC (PNP) = B	
	SSRNC = C	

DC options continue on next column

**ELECTRICAL CONNECTOR TYPE. Select one only from AC, DC, DeviceNet, EtherNet or Profinet:**

AC PIN CONNECTOR WIRING OPTIONS		
<b>AC 5 pin Mini</b>		= <b>A15</b>
1: Grey	AC Neutral	
2: Red	Alarm (SSR NC)	
3: Black	Chassis Ground	
4: White	Reset	
5: Blue	AC Hot	
<b>AC 6 pin Micro</b>		= <b>A26</b>
1: Brown	AC Hot	
2: White	AC Neutral	
3: Blue	Chassis Ground	
4: Black	Remote Reset	
5: Grey	Alarm (SSR NC)	
6: Pink	Alarm (SSR NC)	
<b>AC 6 pin Micro</b>		= <b>A263</b>
<b>6 Pin Micro</b>		
1: Brown	AC Hot	
2: White	AC Neutral	
3: Blue	Chassis Ground	
4: Black	Remote Reset	
5: Grey	Alarm (SSR NC)	
6: Pink	Alarm (SSR NC)	
<b>3 Pin Micro</b>		
1: Gr/Ylw	N/U	
2: Red/Black	Bypass Condition	
3: Red/White	Remote Shutoff	
<b>NOTE:</b> Option A263 includes both a 6 pin AND a 3 pin Micro connector.		
<b>AC 6 pin Micro</b>		= <b>A27</b>
<b>6 Pin Micro only</b>		
1: Brown	AC Hot	
2: White	AC Neutral	
3: Blue	Chassis Ground	
4: Black	Remote Reset	
5: Grey	Alarm (Voltage out)	
6: Pink	Alarm N/U	

<b>DC 6 pin Micro</b> (Choose EOA or Proteus Style)		
EOA Style		= D26E
Proteus Style		= D26P
1: Brown	+24 VDC	
2: White	0 VDC	
3: Blue	Chassis Ground	
4: Black	Remote Reset	
	<u>Select 1 of the 2 options:</u>	
	0 VDC = A	
	+24 VDC = B	
5: Grey	Alarm Out	
	<u>Select 1 of the 3 options:</u>	
	0 VDC (NPN) = A	
	+24 VDC (PNP) = B	
	SSRNC = C	
6: Pink	Remote Shutoff	
	<u>Select 1 of the 4 options:</u>	
	0 VDC = A	
	+24 VDC = B	
	Solenoid Interrupt = D	
	Not used = E	
<b>NOTE:</b> For Remote Shutoff, only "Solenoid Interrupt" and "Not Used" pin selection options available if selecting FD11 firmware.		
<b>DC 6 pin Micro</b>		
Includes both EOA and Proteus Style = D26ExxxPxxx		
<b>EOA</b>		
1: Brown	+24 VDC	
2: White	0 VDC	
3: Blue	Chassis Ground	
4: Black	Remote Reset	
	<u>Select 1 of the 2 options:</u>	
	0 VDC = A	
	+24 VDC = B	
5: Grey	Alarm Out	
	<u>Select 1 of the 3 options:</u>	
	0 VDC (NPN) = A	
	+24 VDC (PNP) = B	
	SSRNC = C	
6: Pink	Remote Shutoff	
	<u>Select 1 of the 4 options:</u>	
	0 VDC = A	
	+24 VDC = B	
	Solenoid Interrupt = D	
	Not used = E	
<b>Proteus</b>		
1: Brown	+24 VDC	
2: White	0 VDC	
3: Blue	Chassis Ground	
4: Black	Remote Reset	
	<u>Select 1 of the 2 options:</u>	
	0 VDC = A	
	+24 VDC = B	
5: Grey	Alarm Out	
	<u>Select 1 of the 3 options:</u>	
	0 VDC (NPN) = A	
	+24 VDC (PNP) = B	
	SSRNC = C	
6: Pink	Remote Shutoff	
	<u>Select 1 of the 4 options:</u>	
	0 VDC = A	
	+24 VDC = B	
	Solenoid Interrupt = D	
	Not used = E	
<b>NOTE:</b> For Remote Shutoff on both EOA and Proteus, only "Solenoid Interrupt" and "Not Used" pin selection options available if selecting FD11 firmware.		
<b>DC 6 pin Micro</b> (Available in EOA style only)		
EOA Style		= D26E1
1: Brown	+24 VDC	
2: White	0 VDC	
3: Blue	Chassis Ground	
4: Black	Remote Reset	
	<u>Select 1 of the 2 options:</u>	
	0 VDC = A	
	+24 VDC = B	
5: Grey	Alarm Out	
6: Pink	Alarm Out	
	<u>Select 1 of 3 options for Grey &amp; Pink:</u>	
	0 VDC (NPN) = AA	
	+24 VDC (PNP) = BB	
	SSRNC = CC	

**ELECTRICAL CONNECTOR TYPE. Select one only from AC, DC, DeviceNet or EtherNet:**

**DEVICENET PIN CONNECTOR WIRING OPTIONS**

<b>DeviceNet 5 pin Micro</b>	=	N2
<b>5 pin Micro</b>		
1: Grey	Drain	
2: Red	V +	
3: Black	V -	
4: White	CAN-H	
5: Blue	CAN-L	
<b>4 Pin Micro, Euro Style, * = unswitched</b>		
1: Brown	N/U	
2: White	+24 VDC *	
3: Blue	0 VDC *	
4: Black	N/U	
<b>NOTE: N2 selection includes this preselected 4 pin Euro Style Micro Auxiliary Power Connector</b>		

<b>DeviceNet 5 pin Mini</b>	=	N1
<b>5 pin Mini</b>		
1: Grey	Drain	
2: Red	V +	
3: Black	V -	
4: White	CAN-H	
5: Blue	CAN-L	
<b>NOTE: Must select one Auxiliary Power Connector from below with an N1 selection:</b>		

**AUXILIARY CONNECTOR TYPE (DeviceNet Only)**

<b>4 Pin Mini, US Style, * = unswitched</b>	=	F1A
<b>Code</b>		
1: Black	0 VDC *	
2: White	Chassis Ground	
3: Red	N/U	
4: Green/Yellow	+24 VDC *	

<b>Code</b>	=	F1B
1: Black	0 VDC	
2: White	N/U	
3: Red	+24 VDC	
4: Green/Yellow	N/U	

<b>Code</b>	=	F1C
1: Black	0 VDC *	
2: White	N/U	
3: Red	N/U	
4: Green/Yellow	+24 VDC *	

<b>Code</b>	=	F1D
1: Black	N/U	
2: White	Chassis Ground	
3: Red	+24 VDC	
4: Green/Yellow	0 VDC	

<b>Code</b>	=	F1E
1: Black	0 VDC	
2: White	Chassis Ground	
3: Red	+24 VDC	
4: Green/Yellow	N/U	

<b>Code</b>	=	F1F
1: Black	+24 VDC	
2: White	N/U	
3: Red	N/U	
4: Green/Yellow	0 VDC	

<b>Code</b>	=	F1G
1: Black	N/U	
2: White	0 VDC *	
3: Red	N/U	
4: Green/Yellow	+24 VDC *	

<b>4 Pin in Mini, Euro Style, * = unswitched</b>		
<b>Code</b>		
1: Brown	N/U	
2: White	+24 VDC *	
3: Blue	0 VDC *	
4: Black	N/U	

<b>Code</b>	=	F1J
1: Brown	+24 VDC	
2: White	N/U	
3: Blue	N/U	
4: Black	0 VDC	

**ETHERNET PIN CONNECTOR WIRING OPTIONS**

<b>4 Pin Mini Power Connector (Male)</b>	=	E1U
<b>4 Pin Mini Power Connector (Male)</b>		
1: Black	N/U	
2: White	0 VDC	
3: Red	N/U	
4: Green/Yellow	+24 VDC	
<b>4 Pin Micro Communication Connector (Female)</b>		
1: White/Orange	RX-	
2: White/Green	RX+	
3: Orange	TX-	
4: Green	RX-	

<b>4 Pin Mini Power Connector (Male)</b>	=	E1E
<b>4 Pin Mini Power Connector (Male)</b>		
1: Brown	N/U	
2: White	+24 VDC	
3: Blue	0 VDC	
4: Black	N/U	
<b>4 Pin Micro Communication Connector (Female)</b>		
1: White/Orange	RX-	
2: White/Green	RX+	
3: Orange	TX-	
4: Green	RX-	

<b>4 Pin Mini Power Connector (Male)</b>	=	E1C
<b>4 Pin Mini Power Connector (Male)</b>		
1: Brown	N/U	
2: White	+24 VDC	
3: Blue	0 VDC	
4: Black	N/U	
<b>4 Pin Micro Communication Connector 1 w/pass-through (Female)</b>		
1: White/Orange	RX-	
2: White/Green	RX+	
3: Orange	TX-	
4: Green	RX-	

<b>4 Pin Micro Communication Connector 2 w/pass-through (Female)</b>		
1: White/Orange	RX-	
2: White/Green	RX+	
3: Orange	TX-	
4: Green	RX-	

<b>PROFINET</b>	
<b>Profinet 5 pin Mini Male 24 VDC Power</b>	= <b>P1A</b>
1: Grey	= 0V Out
2: Red	= 0V Sensor
3: Black	= Chassis GND
4: White	= 24V Sensor
5: Blue	= 24V Out
<b>Communications - Two M12 Female Connectors</b>	
1: TXD+	= Transmit Positive
2: RXD+	= Receive Positive
3: TXD-	= Transmit Negative
4: RXD-	= Receive Negative
5: (Thread)	= Shield

**DPL FACTORY / USER SETTINGS**

Factory Standard	=	<b>F</b>
User Settings	=	<b>U</b>

**DPL Factory Standard Settings**

User Menu	6 GPM	12 GPM	50 GPM
Flow OK (FO)	1 GPM	4 GPM	40 GPM
Min Flow (MF)	.7 GPM	2 GPM	20 GPM
Leak Rate (LR)	.5 GPM	1 GPM	2 GPM
Over Temp (OT)	100 °F	100 °F	100 °F
Low Temp (LT)	65 °F	65 °F	65 °F
Response Time (RT)	1 second	1 second	1 second
Restart Delay (RD)	3 seconds	3 seconds	3 seconds

**NOTE:** Factory standard settings are used by default. Consult factory for user defined settings.

**OPTIONS**

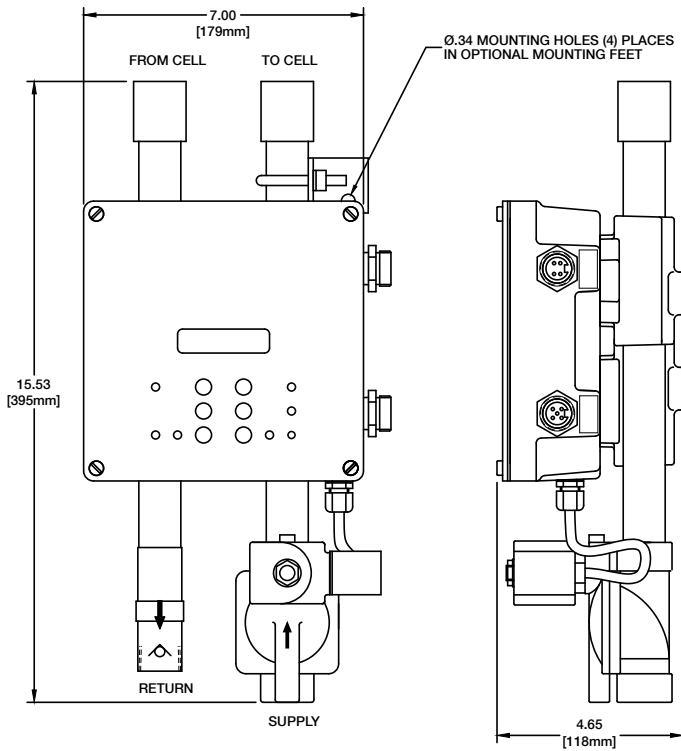
No Options Selected	=	<b>N</b>
Shut off and check valve assembled on top	=	<b>Y</b>
Rev Polarity (+0VDC Ground)	=	<b>R</b>
Temp Probe on Supply Leg	=	<b>S</b>
DeviceNet Firmware Mod	=	<b>D</b>
Dual Temperature (E1C connector only)	=	<b>DT</b>
Ethernet EIP Configuration (2 bytes in, 4 bytes out)	=	<b>E</b>
Poppet Style Check Valve	=	<b>V1</b>
Air Operated Shut-Off Valve	=	<b>V2</b>
2-3/4" Ball Valves (1/4 turn) installed on supply and return legs	=	<b>V3</b>
Reverse Valve Positions	=	<b>RV</b>
Auxiliary Connector in upper L location	=	
External Ground Lug	=	<b>G</b>
SMC 500 MI Drawback Air Cylinder	=	<b>CS5</b>
Wet Venturi System Model 4, Internal Timer Dual Vacuum Ports	=	<b>VIT4.1D</b>

**FIRMWARE OPTIONS**

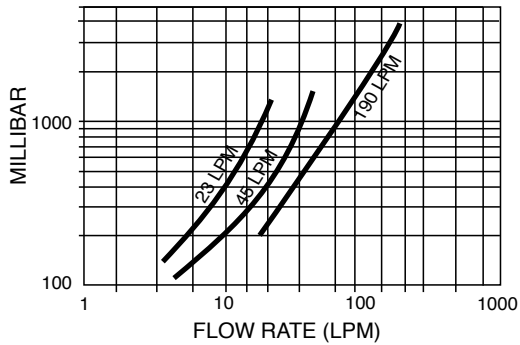
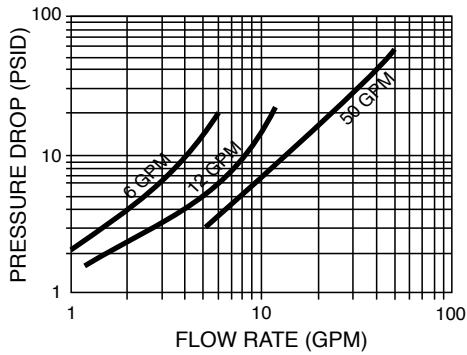
<b>AC</b>	
FA11 (12 GPM)	
FA12 (12 GPM)	
<b>DC</b>	
FD11 (6 and 12 GPM)	
FD12 (12 GPM)	
FD13 (12 GPM)	
FD14 (50 GPM)	
<b>DEVICENET</b>	
FN11 (12 GPM)	
FN14 (12 GPM)	
FN16 (12 GPM)	
FN17 (12 GPM)	
FN28 (12 GPM)	
FN29 (12 GPM)	
FN30 (12 GPM)	
<b>ETHERNET</b>	
FE13 (12 GPM - E1C connector with dual temperature only)	
FE15 (12 GPM - GUI Firmware)	
FE20 (12 GPM - GUI Firmware)	
FE21 (12 GPM - GUI Firmware)	
FE22 (12 GPM - GUI Firmware)	
<b>NOTE:</b> to select firmware, contact your Rocon salesperson.	

# DIMENSION DRAWING

## 6 AND 12 GPM UNIT



## UNIT PRESSURE DROP CHART



NOTE: Cables for all versions are available.  
See product manuals for details.

### ROCON LLC

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