

## DPT TARGET TYPE FLOWMETERS



Flow  
Pressure  
Level  
Temperature  
measurement  
monitoring  
control



- Patented Target/Leaf-Spring Design
- Minimal Wear Components
- 1.5-8 to 225-500 GPM Water
- 6-30 to 260-1650 SCFM Air
- Line Sizes 3/8" to 3"
- Wide Variety of Wetted Materials
- Accuracy +/- 3% of Full Scale

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### USA

KOBOLD Instruments Inc.  
1801 Parkway View Drive  
USA-Pittsburgh, PA 15205  
☎ +1 412-788-2830  
Fax +1 412-788-4890  
E-mail: info@koboldusa.com



### CANADA

KOBOLD Instruments Canada Inc.  
9A Aviation  
Pointe-Claire, QC H9R 4Z2  
☎ +1 514-428-8090  
Fax +1 514-428-8899  
E-mail: kobold@kobold.ca

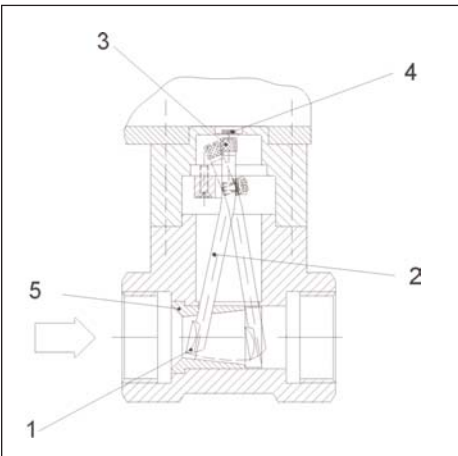
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Model:  
DPT

**Features**

- Patented Target/Leaf-Spring
- Minimal Wear Components
- 1.5-8 to 225-500 GPM Water
- 6-30 to 260-1650 SCFM Air
- Line Sizes 3/8" to 3"
- Wide Variety of Wetted Materials
- Accuracy  $\pm 3\%$  of Full Scale

The DPT series uses a unique, patented target system to measure the flows of liquids and gases. This design uses a single leaf-spring to both suspend the target and to provide the target resetting force. The use of a single leaf-spring is a simple, reliable design which allows for operation with virtually no wear.



**DPT Series Measuring Principle**

The mechanism consists of a target plate (1) and lever arm (2). Fluid flow causes the target plate and lever arm to deflect against the leaf-spring. A permanent magnet (3) attached to the lever arm and Hall effect sensor (4) mounted inside the display unit translate the angular motion of the target to an electrical signal. The signal from the Hall effect sensor is used by the electronic indicators to provide a flowrate display, adjustable setpoint switches or an analog flow signal.

The DPT series is available in bronze or stainless steel bodies from 3/8 inch through 3 inches. The target plate measuring system offers a very low head loss and is immune to problems caused by fluids with high solids content.



**DPT Series Target Type Flowmeter**

**Specifications**

- Flow Range:**  
**Liquids:** 1.5-8 GPM through 225-500 GPM water  
**Gases:** 6-30 SCFM through 260-1650 SCFM air

- Accuracy:**  $\pm 3\%$  of full scale  
**Repeatability:**  $\pm 1\%$  of full scale

**Straight Piping Requirements**

- Inlet:** 10 X Diameter  
**Outlet:** 5 X Diameter

- Operating Temperature:** -10 to 176°F

- Maximum Pressure:** 580 PSIG @ 70°F

- Custom Calibrations:** Can be calibrated for compressed gases or liquid density and viscosity

**Wetted Materials**

- Bronze Versions:** Bronze, 316-Ti stainless steel, buna-N, ceramic

- Stainless Steel Versions:** 316-Ti stainless steel, viton, ceramic

**Displays and Controllers:**

- DPT-C:** Compact LED display with switch and 4-20 mA flow transmitter

- DPT-B:** LED bargraph display with 2 adjustable SPDT setpoint relays

- DPT-D:** LED digital display with 2 adjustable SPDT setpoint relays and 4-20 mA flow transmitter

- DPT-K:** LED digital and bargraph display with 2 adjustable SPDT setpoint relays and 4-20mA flow transmitter



DPT-C Compact Electronics

**Specifications DPT-C**

- Programmable Functions:** Lockout code, switch logic, switch setpoint and hysteresis, dampening
- Input Power:** 24 VDC  $\pm$ 20%, 80 mA Max.
- Display:** 3 digit LED
- Switch Type:** PNP open collector
- Switch Rating:** 300 mA Max. short circuit protected
- Analog Output:** 4-20 mA, 3-wire  $R_L=500$  Ohms Max.
- Housing:** 304 SS, NEMA 4X
- Electrical Connection:** Micro-DC, male, 5-pin plug

**Specifications DPT-D**

- Input Power:** 115 VAC
- Display:** 3-1/2 digit LED
- Relays:** 2 SPDT 5 amps @ 230 VAC
- Analog Output:** 4-20 mA, 4-wire,  $R_L=500$  Ohms Max.
- Housing:** Epoxy coated aluminum, polycarbonate, NEMA 4X/IP 65
- Electrical Connection:** Cable gland, PG-13.5



DPT-D Display/Controller

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DPT-B Display/Controller

**Specifications DPT-B**

- Input Power:** 115 VAC
- Display:** LED bargraph, 270°
- Relays:** 2 SPDT 5 amps @ 230 VAC
- Analog Output:** None available
- Housing:** Epoxy coated aluminum, polycarbonate, NEMA 4X/IP 65
- Electrical Connection:** Cable gland, PG-13.5

**Specifications DPT-K**

- Input Power:** 115 VAC
- Display:** 3-1/2 digit LED and bargraph 270°
- Relays:** 2 SPDT 5 amps @ 230 VAC
- Analog Output:** 4-20 mA, 4-wire,  $R_L=500$  Ohms Max.
- Housing:** Epoxy coated aluminum, polycarbonate, NEMA 4X/IP 65
- Electrical Connection:** Cable gland, PG-13.5



DPT-K Display/Controller



### Ordering Codes For Liquid Flowmeters

Range GPM	Material		Fitting	Housing Styles	
	Bronze	Stainless Steel		Indication	Flow Direction
1.5-8 3-12.5	DPT-1107H DPT-1112H	DPT-1207H DPT-1212H	N3 = 3/8" NPT	C34P = Compact Electronic  D442 = Digital Display  B402 = Bargraph Display  K442 = Digital & Bargraph	LT = Flow from left to right  RT = Flow from right of left  TL = Vertical down flow, dial on left  TR = Vertical down flow, dial on right  UL = Vertical up flow, dial on left  UR = Vertical up flow, dial on right
1.5-8 3-18	DPT-1114H DPT-1122H	DPT-1214H DPT-1222H	N4 = 1/2" NPT		
1.7-15 5-25	DPT-1124H DPT-1132H	DPT-1224H DPT-1232H	N5 = 3/4" NPT		
5-20 20-35	DPT-1134H DPT-1142H	DPT-1234H DPT-1242H	N6 = 1" NPT		
15-45 25-60	DPT-1144H DPT-1152H	DPT-1244H DPT-1252H	N8 = 1-1/2" NPT		
25-120 40-200	DPT-1154H DPT-1162H	DPT-1254H DPT-1262H	N9 = 2" NPT		
175-400 225-500	DPT-1164H DPT-1172H	DPT-1264H DPT-1272H	NB = 3" NPT		<b>Accessories:</b> Mating Micro-DC connector with 6 ft. cable for indicator C34P - Part # 807.007

Example: DPT1164HNBC34PLT

### Ordering Codes For Gas Flowmeters

Range SCFM air	Material		Fitting Steel	Housing Styles	
	Bronze	Stainless		Indication	Flow Direction
6-30 15-60	DPT-1107L DPT-1112L	DPT-1207L DPT-1212L	N3=3/8" NPT	C34P = Compact Electronic  D442 = Digital Display  B402 = Bargraph Display  K442 = Digital & Bargraph	LT = Flow from left to right  RT = Flow from right of left  TL = Vertical down flow, dial on left  TR = Vertical down flow, dial on right  UL = Vertical up flow, dial on left  UR = Vertical up flow, dial on right
8-25 20-70	DPT-1114L DPT-1122L	DPT-1214L DPT-1222L	N4=1/2" NPT		
6-50 11-70	DPT-1124L DPT-1132L	DPT-1224L DPT-1232L	N5=3/4" NPT		
6-70 45-125	DPT-1134L DPT-1142L	DPT-1234L DPT-1242L	N6=1" NPT		
50-115 55-225	DPT-1144L DPT-1152L	DPT-1244L DPT-1252L	N8=1-1/2" NPT		
85-525 150-725	DPT-1154L DPT-1162L	DPT-1254L DPT-1262L	N9=2" NPT		
180-1300 260-1650	DPT-1164L DPT-1172L	DPT-1264L DPT-1272L	NB=3" NPT		<b>Accessories:</b> Mating Micro-DC connector with 6 ft. cable for indicator C34P - Part # 807.007

Example: DPT-1172LNBC34PLT

## How to Order

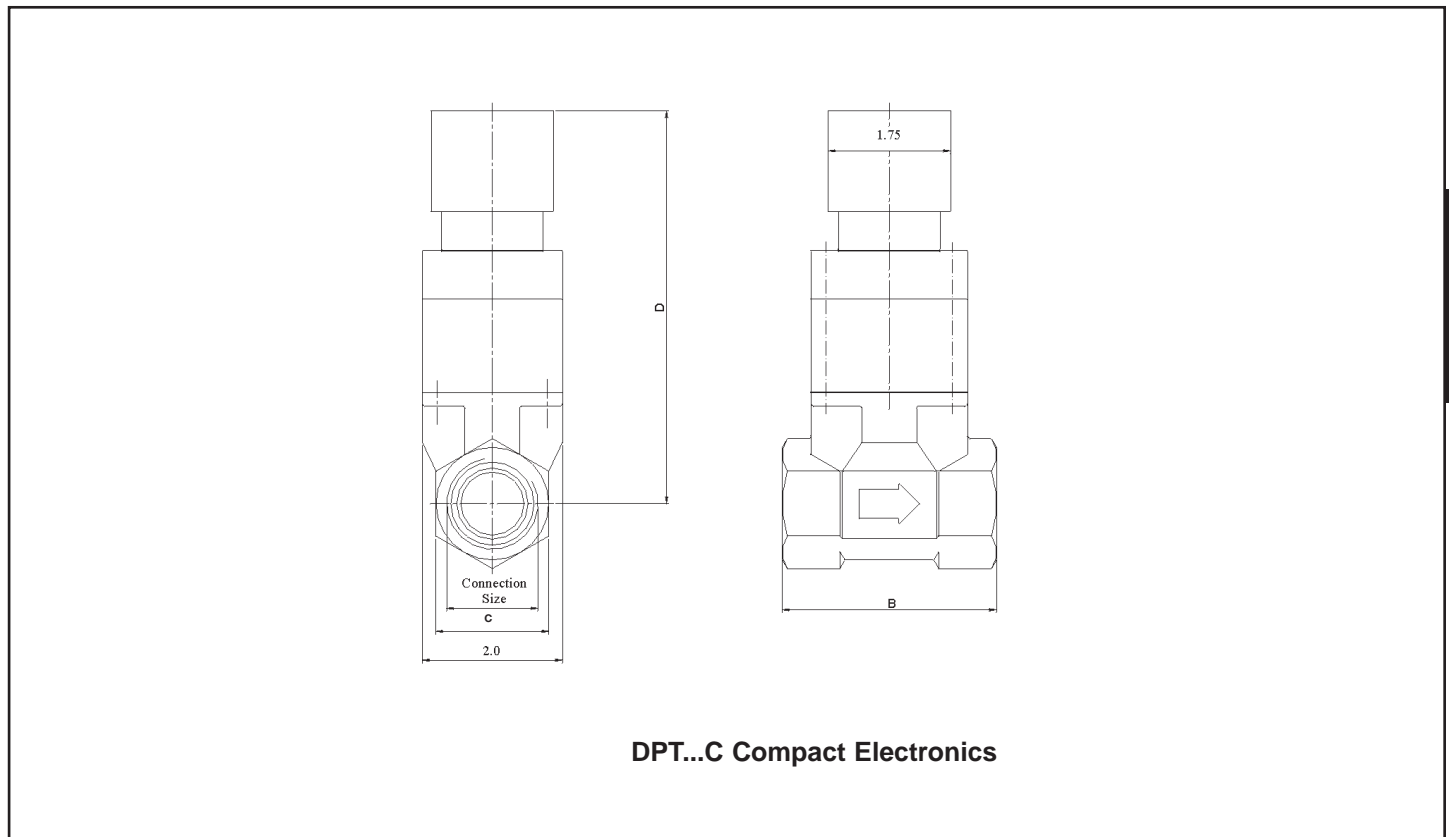
1. Select the model number based on the desired flow range, materials of construction and desired options. Example part numbers are shown with the ordering code table.

2. The ranges shown in the ordering code tables are for water, or air at 70°F and 14.7 PSIA. If ordering a DPT series for other liquids, specify the type of liquid normal operating viscosity and density. If ordering for a compressed gas, specify the type of gas, normal operating pressure and normal operating temperature.

3. Specify a flow direction for the installation.

4. Calibrations for compressed gases or liquids other than water may change the measuring range from those listed in the ordering information table. Contact KOBOLD Instruments to have your DPT series sized for a particular set of operating conditions.

## DIMENSIONS

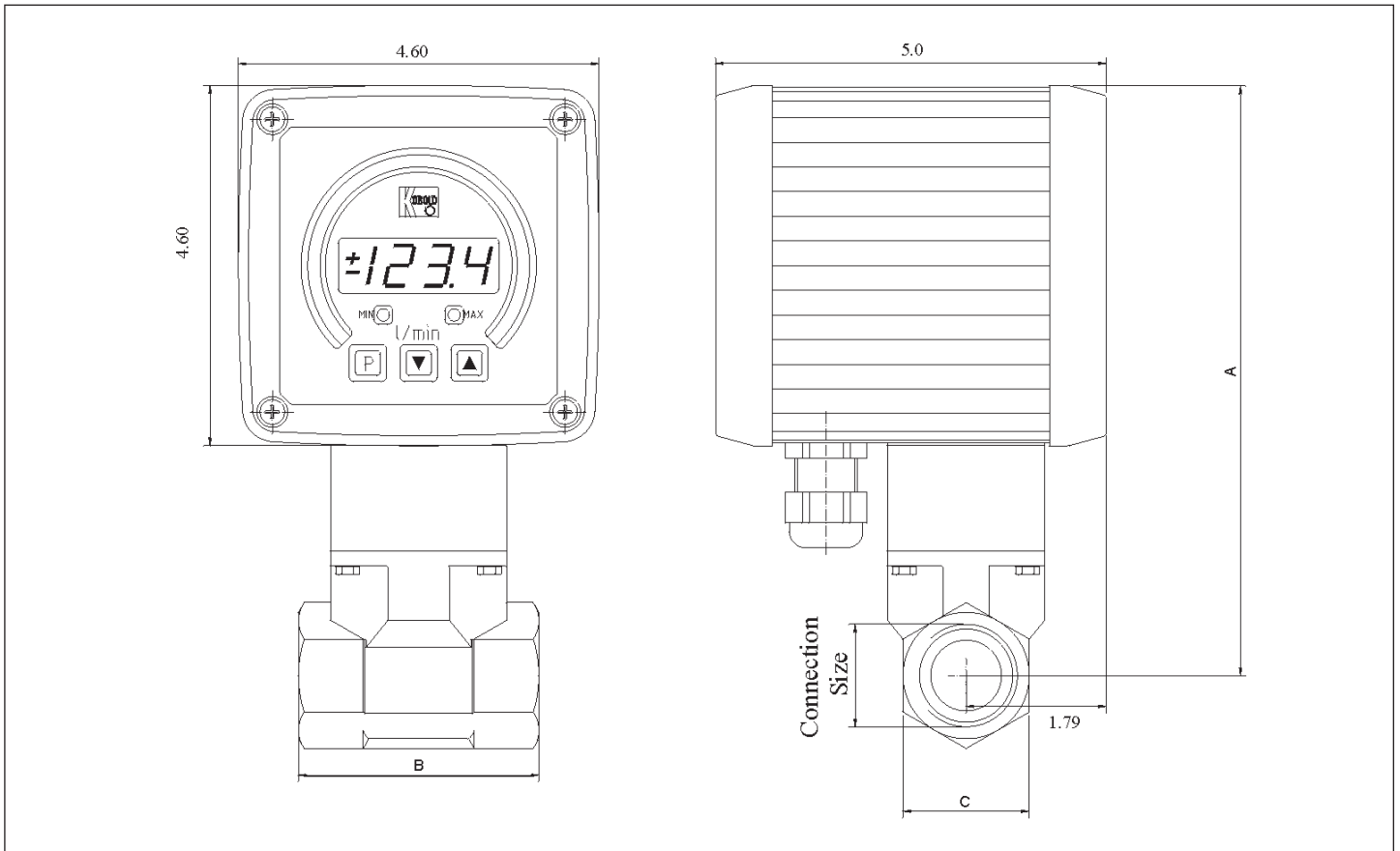


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**Compact Electronics  
DPT...C**

Fitting	B	C	D
3/8" NPT	3.07"	27mm	5.43"
1/2" NPT	3.07"	27mm	5.43"
3/4" NPT	3.07"	41mm	5.43"
1" NPT	3.07"	41mm	5.43"
1-1/2" NPT	3.07"	55mm	6.10"
2" NPT	3.20"	70mm	6.18"
3" NPT	4.17"	100mm	6.85"

DIMENSIONS



Electronic Display/Controller DPT...B, D, K			
Fitting	A	B	C
3/8" NPT	7.32"	3.07"	27mm
1/2" NPT	7.32"	3.07"	27mm
3/4" NPT	7.32"	3.07"	41mm
1" NPT	7.32"	3.07"	41mm
1-1/2" NPT	8.0"	3.07"	55mm
2" NPT	8.0"	3.20"	70mm
3" NPT	8.74"	4.17"	100mm