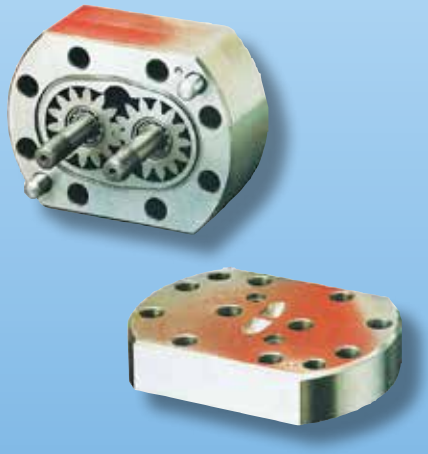
Positive Displacement Flowmeter

measuring • monitoring • analyzing

ZDM



- Viscosities up to 100,000 cSt
- Accuracy: ±0.3% of Reading
- Pressure: to 6500 PSIG
- Can Detect Flow Direction
- Handles a Variety of Lubricating Fluids

KOBOLD companies worldwide:

AUSTRALIA, AUSTRIA, BELGIUM, BULGARIA, CANADA, CHINA, CZECHIA, FRANCE, GERMANY, GREAT BRITAIN, HUNGARY, INDIA, INDONESIA, ITALY, MALAYSIA, MEXICO, NETHERLANDS, PERU, POLAND, REPUBLIC OF KOREA, SPAIN, SWITZERLAND, THAILAND, TUNISIA, TURKEY, USA, VIETNAM

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GV/04-15-2026

Description

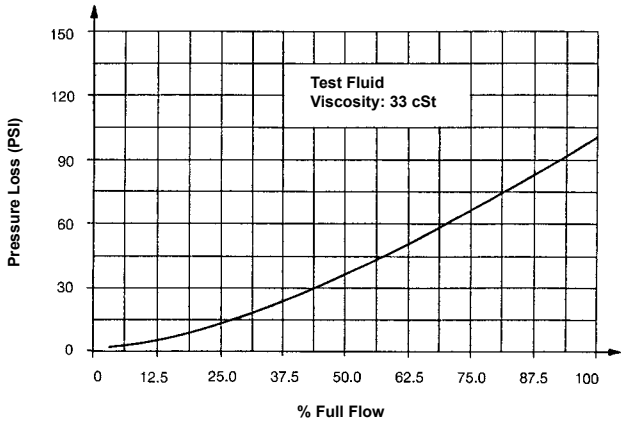
The ZDM is designed for difficult metering that requires precision. Available in either stainless steel or cast iron, it offers a state-of-the-art solution. Capable of operating at pressures to 6500 PSI and temperatures from -40°F to 410°F, it is rugged enough to operate under demanding requirements. It has the ability to precisely meter fluids with viscosities ranging from 1 cSt to 100,000 cSt. All liquids that can be pumped and have known lubrication properties can be measured, for example: gasoline, paraffin, kerosene, diesel, mineral oils, hydraulic oils, inks, dyes, paints, greases, polyurethane, glues, pastes, creams, resins, waxes, and many others.

Specifications

Viscosity Capability:	1...100,000 cSt
Accuracy:	±0.3% of Reading (Ranges: 04-40) ±0.5% of Reading (Range 50):
Repeatability:	±0.05% of Reading
Orientation Sensitivity:	None
Inlet/Outlet Location:	Bottom Ports; Parallel or Side Ports; 180° Opposed
Construction	
Housing:	Cast Iron (DIN EN 1563) or Stainless Steel (DIN 1.4305)
Gears:	Stainless Steel (DIN 1.4122)
Shafts:	Stainless Steel (DIN 1.4112)
Seals	
Cast Iron Unit:	FKM
St. Steel Unit:	FKM
Optional:	EPDM, PTFE, NBR
Bearings	
Cast Iron Unit:	Stainless Steel (DIN 1.4037)
St. Steel Unit:	Stainless Steel (DIN 1.4037)

Max. Pressure	
Cast Iron:	4500 PSIG 5000 PSIG (range code 50)
Stainless Steel:	6500 PSIG
Temperature Range	
Standard:	-40...248 °F
Ex-Design:	-4...212 °F
Option..C:	-40...410 °F
Max Ambient:	122 °F
Required Filter Size	
ZDM-..04/..07:	10 µm
ZDM-..08/..09:	20 µm
ZDM-..10/..20/..40/..50:	50 µm
Protection:	IP 65 (Option "C": IP 64)
Electrical Input Power:	Vs;10-28 V_{DC} (±4 V_{DC}) 40 mA Max.
Output Signal:	Push/Pull Voltage Pulse (0...Vs-1V_{DC})

Typical Pressure Loss vs Flow Rate Behavior



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Order Details* (Example: **ZDM-3209 B**)

With your order, please also submit the media type, the operating pressure, and the viscosity at operating temperature.

Fitting Orientation, Type	Body Material	Range Oil (GPM)[2]	K-factor (Pulses/Gal)	Fitting Size	Optional Fitting Size Add Suffix "..B"
ZDM-1.. = Bottom Ports, BSP Threads **ZDM-2..** = Side Ports, BSP Threads **ZDM-3[3]..** = Bottom Ports, NPT **ZDM-4[3]..** = Side Ports, NPT **ZDM-5..** = Bottom Ports, SAE **ZDM-6..** = Side Ports, SAE	**..1..** = Cast Iron **..2..** = Stainless Steel	**..04** = 0.0011...1.06	94636	1/2"	-
		..07 = 0.0026...2.64	37854.4	1/2"	-
		..08 = 0.0053...4.76	18927.2	1/2"	-
		..09 = 0.0079...10.57	9463.6	1/2"	3/4"
		..10 = 0.0132...21.13	3785.44	3/4"	1"
		..20 = 0.0264...31.70	1892.72	3/4"	1"
		..40 = 0.2642...66.00	946.36	1-1/4"	1-1/2"
		..50[1] = 0.39...138.00	1135.63	1-1/2"	2"

[1]Range Code 50 is only available for cast iron versions.
[2] Ranges based off of 21 cSt media. Media with a viscosity above or below this value may alter the effective range.
[3] Models with NPT fittings are limited to 1/2" connections

*All models include a 5 meter 4-pin Micro-DC M12 shielded electrical cable and DIN calibration certificate.

Options

Description	Suffix
Optional Fitting Size (See Table Above)	**..B**
EPDM Seals in Place of Standard Seals	**..E**
PTFE Seals in Place of Standard Seals	**..T**
Intrinsically-Safe 5-10 V_{DC} Pulse Sensor (incl. 1 Zener Barriers)	**..EX**
Externally-Mounted Sensor Pre-amplifier for Temperatures Above 248 °F (Internal Mounting is Standard)	**..C**

ZDM for High Temperature (Option C)
(with Side Mount Ports)

ZDM with Mounting Plate
(with Side Mount Ports)

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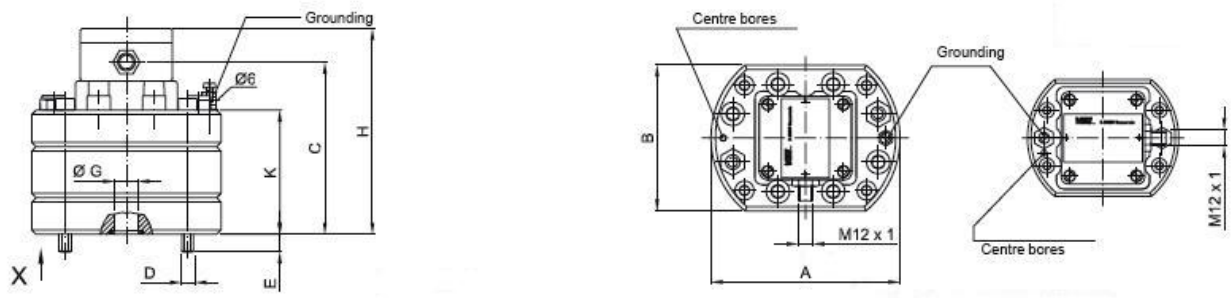
ZDM-..04 to ZDM-..40

Dimensions

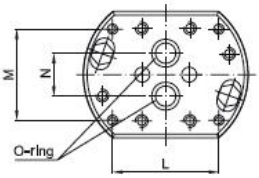
Cast Iron Version



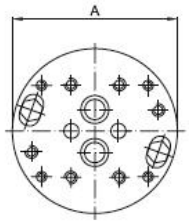
Model Number	Size (inches)												Weight (lbs)
	A	B	C	D	E	G	H	K	L	M	N	O-ring	
ZDM-..04	3.94	3.15	3.60	M 6	0.45	0.35	4.51	2.30	2.76	1.57	0.79	0.43 x 0.08	6.17
ZDM-..07	3.94	3.15	3.70	M 6	0.35	0.35	4.61	2.40	2.76	1.57	0.79	0.43 x 0.08	6.17
ZDM-..08	3.94	3.15	3.68	M 6	0.37	0.35	4.59	2.38	2.76	1.57	0.79	0.43 x 0.08	6.61
ZDM-..09	4.53	3.54	3.80	M 8	0.45	0.63	4.70	2.50	3.15	1.50	1.34	0.71 x 0.10	8.82
ZDM-..10	5.12	3.94	3.98	M 8	0.47	0.63	4.88	2.67	3.31	2.83	1.34	0.71 x 0.10	11.7
ZDM-..20	5.12	3.94	4.65	M 8	0.59	0.63	5.55	3.35	3.31	2.83	1.34	0.71 x 0.10	14.8
ZDM-..40	7.09	5.51	5.63	M 12	0.79	1.18	6.54	4.33	1.81	3.74	1.77	1.42 x 0.10	32.4

Connection Drawings

Cast Iron Version

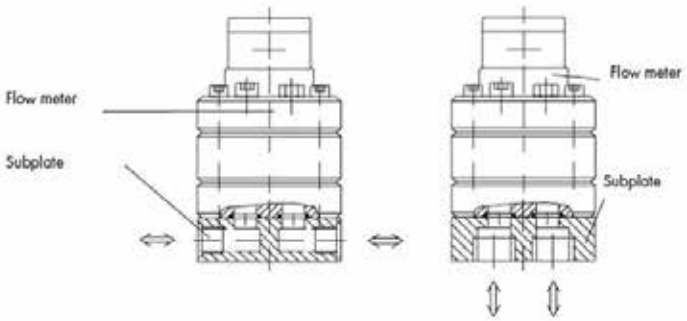


Stainless Steel Version



Side Ports

Bottom Ports



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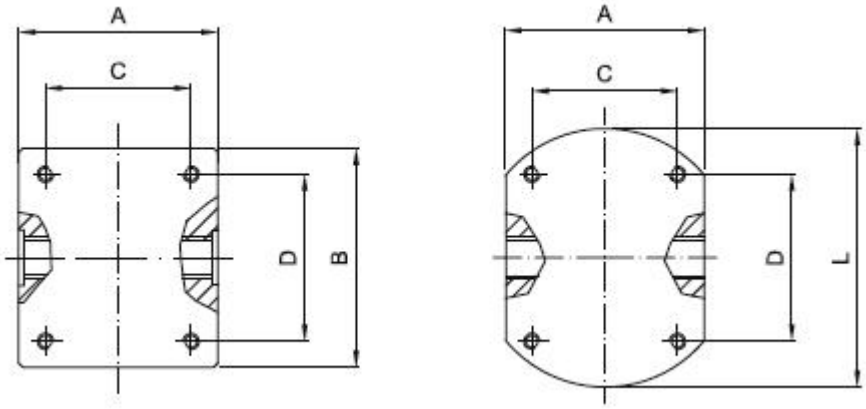
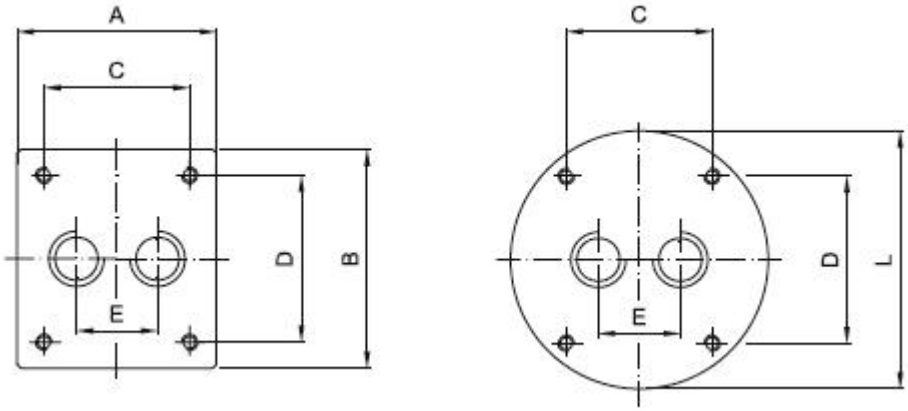
ZDM-..04 to ZDM-..40

Subplate Dimensions

Side Ports



Bottom Ports



Model Number	Size (inch)					Weight (lbs)
	A	B	C	D	L	
ZDM-..04, ZDM-..07 & ZDM-..08	3.15	3.54	1.57	2.76	3.94	3.97
ZDM-..09	3.54	3.94	1.49	3.15	4.53	5.95
ZDM-..10 & ZDM-..20	3.94	4.33	2.83	3.31	5.12	7.94
ZDM-..40 Cast Iron 1 1/4"	4.72	5.12	3.94	4.33	-	16.31
ZDM-..40 Cast Iron 1 1/2"	5.51	4.72	4.72	3.94	-	16.31
ZDM-..40 Stainless Steel	5.51	-	3.94	4.33	7.09	26.46

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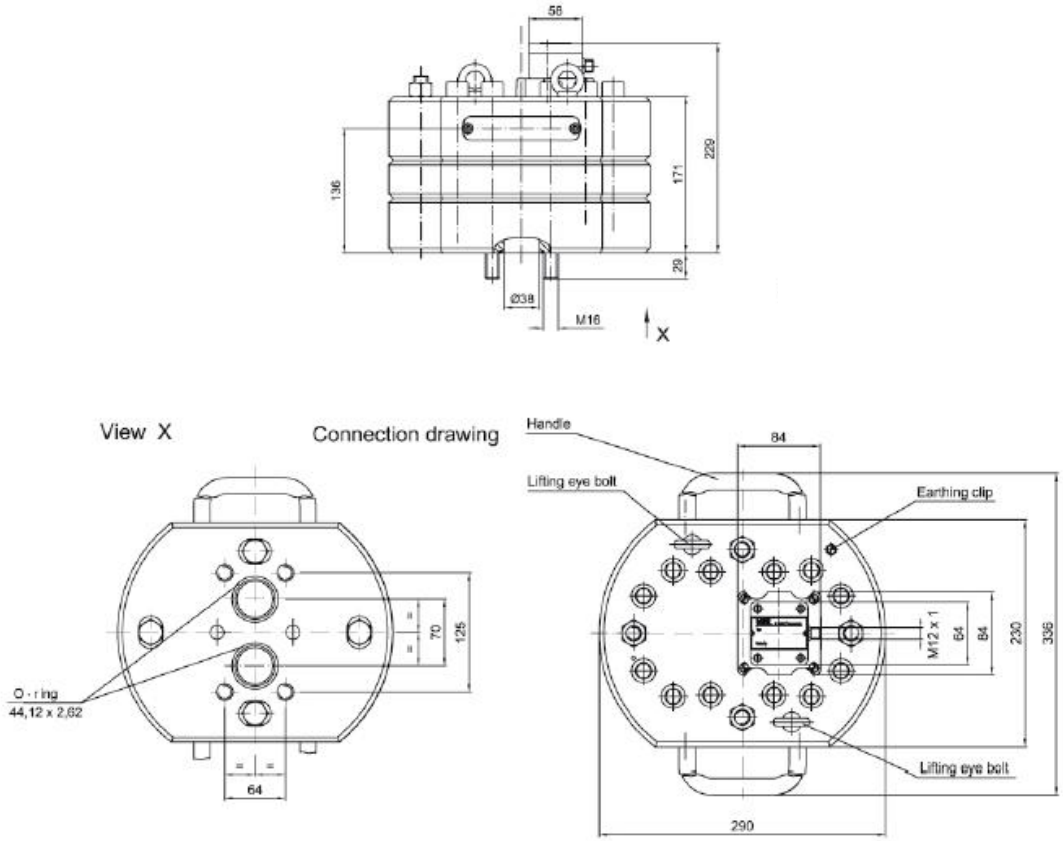
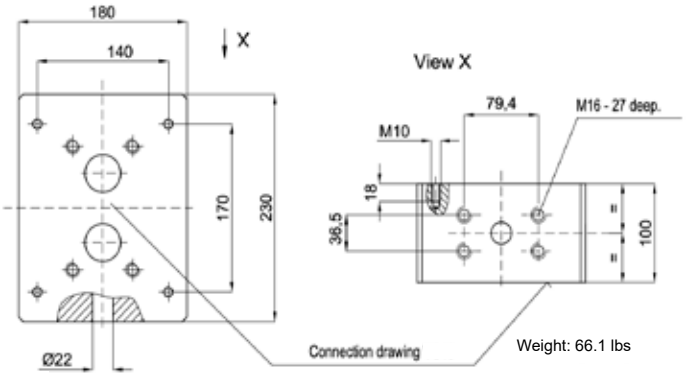
ZDM-..150

Dimensions



Subplate Dimensions

ZDM-..150 with SAE 1-1/2" Connection



Dimensions in mm

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