

- // Measurement of the instantaneous flow (DE) and volume (DM, DE) of gas and air
- // Turndown range up to 20:1
- // Connections for optional sensing equipment
- // Arbitrary mounting position
- // Compact design
- // Maintenance-free

Application

For measuring volume (DM, DE) and instantaneous flow (DE) of natural gas, propane, inert gases and air. Typical applications include secondary measurement of volume on industrial installations and test stands including furnaces, kilns and ovens used in all types of heating processes. The flow meters are ideal for monitoring gas flow rates that aid in optimizing fuel consumption, and providing important troubleshooting information.

Specifications

Operating Limits

Types of gas:	Natural gas, town gas, LPG (gaseous), air and inert gases.
Max. inlet pressure p_g :	175 psig (12 bar)
Ambient temperature:	-4° F to 158° F (-20° C to 70° C)
Median temperature:	14° F to 140° F (-10° C to 60° C)
Type of enclosure:	IP 52 (DM); IP 54 (DE)

Mechanical data

DM

Display: 7-digit with resolution of 0.01 ft³ for 1" size, and 0.1 ft³ for 1½" to 4" sizes (Analog mechanical display)

Electrical data

DM

Supply voltage:	8 VDC (approximate)
Maximum switching voltage:	24 V
Maximum switching current:	50 mA
Maximum make/break capacity:	0.25 W (VA)
Contact resistance:	100 Ω \pm 20%
Internal resistance:	1 k Ω \pm 20%
First pulse generator:	E1, reed contact
Second pulse generator:	E 200 (Namur), inductive generator EN 50227

Note: The reed contact, E1, closes once per revolution of the last number drum.

DE

Display:	6-digit liquid-crystal display (LCD)
Supply voltage:	8 VDC (approximate)
Internal resistance:	1 k Ω
Pulse generator:	E 200 (Namur), Inductive generator EN 50227
Battery life:	Approximately 8 years (stored values are lost when battery changed)

Note: The pulse output is a result of change in current consumption from 1 mA to 3 mA.

Materials of Construction

Housing material:	Nominal size 25: AlSi chill casting
	Nominal size 40–150: extruded aluminium

Features

DM

The total volume is indicated on the mechanical counter head.

A remote indicator can be operated with one or two incorporated pulse generators (round plug 3-pin to DIN 41524).

DE

The DE style meter has a LCD display that shows the current volume, the current flow and date. The normal display indicates current volume (ft³). The following values can be recalled from this normal state by pressing the blue pushbutton located on the top of the display head.

Menu #

1. Key-date value (ft³/a) indicates the volume consumed since the key date. The key date value function stores the total volume consumed annually from key-date to key-date. This feature allows you to determine the volume consumed in the current year at any time, for example:
Total consumption since the meter was installed (Normal Display): 309,560 ft³ Key-date value (through the end of last year): 300,000 ft³. This means 9,560 ft³ was consumed since the last key date.
2. The key date indicates the date from which the volume displayed in Menu 1 was consumed. This value is saved in the key date value (factory set at: December 31, this can only be reset or changed at the factory) Default status: 00-00, will be displayed on December 31.
3. The Instantaneous flow [ft³/h], indicates current flow.



DM..N



DE..W

The electronic counter head features a pulse generator (E200, Namur) for remote indication of the total flow.

When operating the DM or DE style turbine meter, pressure surges should be avoided to reduce the risk of damage to the meter. Rapid changes in flow rates should also be avoided, as this can result in substantial positive errors in flow measurements. In situations where rapid changes in flow rates may occur, we recommend an alternate style meter (ultrasonic, diaphragm, or rotary piston meter).

Installation

- Fitting position vertical or horizontal, not upside down
- The unit can be mounted with enclosed union fittings on threaded version DM/DE..N or tap bolts and nuts on flanged version DM/DE..W.
- The flow meters should be fitted in a straight pipe with a length of: 3x pipe diameter upstream and 2x pipe diameter downstream of the meter in order to achieve maximum measuring accuracy. There is no need for a slowing down section for design reasons.
- Use pipework with the same nominal diameter.
- Install the DM/DE in the flow direction from top to bottom for gases that tend to condensate-use a condensate drain in the pipeline.

Measuring Range

Type	Size inch	Base capacity		Capacity on inlet pressure p_e									
				1 psig		10 psig		20 psig		25 psig		75 psig	
		min CFH	max CFH	min CFH	max CFH	min CFH	max CFH	min CFH	max CFH	min CFH	max CFH	min CFH	max CFH
DM/DE 10TN25	1	50	560	40	585	50	928	59	1308	63	1498	95	3390
DM/DE 16TN25	1	50	880	40	920	50	1458	59	2055	63	2354	95	5341
DM/DE 25TN25	1	75	1500	59	1568	75	2485	89	3503	95	4012	143	9104
DM/DE 40TN25	1	115	2300	91	2405	115	3810	136	5371	146	6152	219	13,959
DM/DE 40TN40	1.5	115	2300	91	2405	115	3810	136	5371	146	6152	219	13,959
DM/DE 65TW50	2	175	3500	139	3659	174	5798	207	8174	222	9362	334	21,242
DM/DE 100TW80	3	350	5600	277	5855	349	9276	414	13,078	443	14,979	668	33,988
DM/DE 160TW80	3	440	8800	348	9200	439	14,577	521	20,551	557	23,538	840	53,409
DM/DE 250TW100	4	700	14,000	554	14,637	698	23,191	829	32,695	887	37,447	1336	84,969
DM/DE 400TW100	4	1150	23,000	911	24,046	1146	38,099	1361	53,714	1457	61,521	2195	139,593
DE 400TW150	6	1150	23,000	911	24,046	1146	38,099	1361	53,714	1457	61,521	2195	139,539
DE 650TW150	6	1750	35,000	1386	36,592	1745	57,977	2072	81,738	2217	93,618	3339	212,424

Flow rate

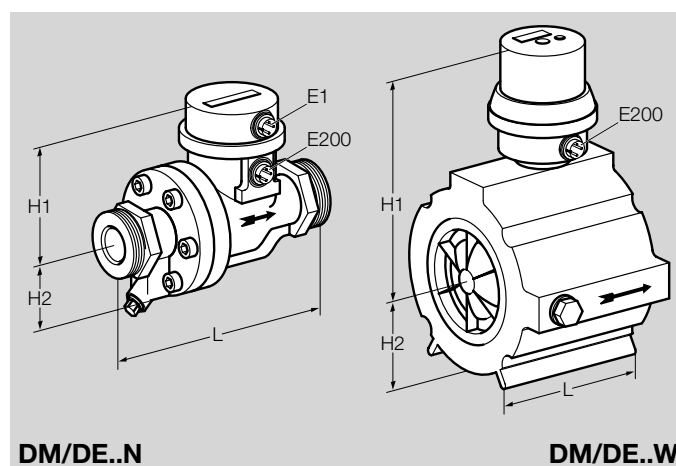
Type	Max base capacity CFH	Approx pressure drop "WC	Corrected pressure drop with inlet pressure p_e				
			1 psig "WC	10 psig "WC	20 psig "WC	25 psig "WC	75 psig "WC
DM/DE 10TN25	560	1.13	1.18	1.88	2.65	3.03	6.88
DM/DE 16TN25	880	2.50	2.61	4.14	5.84	6.68	15.17
DM/DE 25TN25	1500	1.53	1.60	2.54	3.58	4.10	9.30
DM/DE 40TN25	2300	3.33	3.48	5.52	7.78	8.91	20.22
DM/DE 40TN40	2300	1.83	1.92	3.04	4.28	4.90	11.12
DM/DE 65TW50	3500	4.17	4.35	6.90	9.73	11.14	25.28
DM/DE 100TW80	5600	2.00	2.09	3.31	4.67	5.35	12.13
DM/DE 160TW80	8800	4.50	4.70	7.45	10.51	12.03	27.30
DM/DE 250TW100	14,000	2.50	2.61	4.14	5.84	6.68	15.17
DM/DE 400TW100	23,000	6.00	6.27	9.94	14.01	16.04	36.40
DE 400TW150	23,000	2.50	2.61	4.14	5.84	6.68	15.17
DE 650TW150	35,000	5.33	5.57	8.83	12.45	14.26	32.36

Dimensions / Weights

	Size	Conne- ction	Dimensions						Weight		Cp value [pul/ft ³]	
			L		H1		H2		lbs	kg	E200	E1
			inch	mm	inch	mm	inch	mm				
DM 10TN25-120	1	1 NPT	7.28	185	3.54	90	1.65	42	2.20	1.0	50	1
DM 16TN25-120	1	1 NPT	7.28	185	3.54	90	1.65	42	2.20	1.0	50	1
DM 25TN25-120	1	1 NPT	7.28	185	3.54	90	1.65	42	2.20	1.0	50	1
DM 40TN25-120	1	1 NPT	7.28	185	3.54	90	1.65	42	2.20	1.0	50	1
DM 40TN40-120	1½	1½ NPT	4.92	125	5.31	135	1.97	50	4.84	2.2	25	0.1
DM 65TW50-120	2	2 FLG	2.36	60	5.31	135	1.97	50	3.08	1.4	25	0.1
DM 100TW80-120	3	3 FLG	4.72	120	5.90	150	2.95	75	11.68	5.3	2.5	0.01
DM 160TW80-120	3	3 FLG	4.72	120	5.90	150	2.95	75	11.68	5.3	2.5	0.01
DM 250TW100-120	4	4 FLG	5.90	150	6.30	160	3.94	100	14.99	6.8	2.5	0.01
DM 400TW100-120	4	4 FLG	5.90	150	6.30	160	3.94	100	14.99	6.8	2.5	0.01
DE 10TN25-120	1	1 NPT	7.28	185	4.72	120	1.65	42	2.20	1.0	50	-
DE 16TN25-120	1	1 NPT	7.28	185	4.72	120	1.65	42	2.20	1.0	50	-
DE 25TN25-120	1	1 NPT	7.28	185	4.72	120	1.65	42	2.20	1.0	50	-
DE 40TN25-120	1	1 NPT	7.28	185	4.72	120	1.65	42	2.20	1.0	50	-
DE 40TN40-120	1½	1½ NPT	4.92	125	6.50	165	1.97	50	4.84	2.2	25	-
DE 65TW50-120	2	2 FLG	2.36	60	6.50	165	1.97	50	3.08	1.4	25	-
DE 100TW80-120	3	3 FLG	4.72	120	7.09	180	2.95	75	11.68	5.3	2.5	-
DE 160TW80-120	3	3 FLG	4.72	120	7.09	180	2.95	75	11.68	5.3	2.5	-
DE 250TW100-120	4	4 FLG	5.90	150	7.48	190	3.94	100	14.99	6.8	2.5	-
DE 400TW100-120	4	4 FLG	5.90	150	7.48	190	3.94	100	14.99	6.8	2.5	-
DE 400TW150-120	6	6 FLG	7.09	180	8.66	220	4.33	110	25.08	11.4	5.31	-
DE 650TW150-120	6	6 FLG	7.09	180	8.66	220	4.33	110	25.08	11.4	5.31	-

Order information

DM	turbine meter with mechanical counter head
DE	turbine meter with electronic counter head
10-650	nominal flow rate [m ³ /h]
T	T-product
N	NPT internal thread
W	for fitting between two ANSI flanges
25-150	nominal diameter
-120	p _e max. 175 psig (12 bar)



Warning:

Situations dangerous to personnel and property can result from the misapplication and incorrect operation of combustion equipment. Kromschroder advises compliance with the National Fire Protection Association standards that apply for related equipment and Insurance Underwriters recommendation, and care of operation.

We reserve the right to make technical changes designed to improve our products without prior notice. For current product information, visit our website at www.kromschroder.com.