

# RMS - Rosemount Magnetic Flowmeters

Sizes - 4, 8, 15, 25, 40, 50, 80, 100, 150 and 200 mm

## FEATURES

- \* Accuracy:  $\pm 0.5\%$  of rate from 0.3 to 10m/s.
- Repeatability:  $\pm 0.2\%$
- \* Wide flow range performance. \* Empty pipe detection.
- \* Virtually maintenance free with no moving parts.
- \* Eliminates head-losses and need for filters.
- \* Handles wide range of aggressive liquids.
- \* Wafer sensor option - light weight and suitable for high pressure.
- \* Robust construction for industrial use.
- \* Digital pulse and analogue outputs.
- \* AC or DC powered options.
- \* Process temperature range:  
Integral unit to 70 °C, Remote unit to 177 °C.
- \* Fully programmable via HART protocol or local display.
- \* Approved for Class III hazardous applications (NEMA 4X).
- \* Sanitary Tri-Clamp Stainless Steel option.



RMS Rosemount electromagnetic flowmeters are capable of operating over a very wide flow range. They offer excellent performance (accuracy  $\pm 0.5\%$ ), are ideal for measurement of water-based admixtures, wastewater and many other chemical, pharmaceutical and metallurgical applications. Almost any liquid can be measured, provided a minimum 5 microsiemens/cm conductivity is present. With no moving parts, and an obstruction-less bore, this type of flowmeter provides the highest level of performance - unaffected by specific gravity or viscosity variations, or the most contaminated of fluids, whilst maintaining a high degree of accuracy. Application examples include use in bulk chemical delivery tanker loading and transfers, tradewaste applications, plant and process measurement, recycle/slurry water batching applications in concrete plants.

The RMS 8711 wafer sensor is available in standard sizes from 4mm to 200mm, with a standard light-weight integral wafer mount cast steel sensing tube with standard ETFE Tefzel or PTFE Teflon liner and stainless steel electrodes (options include different liner/electrode materials and remote-mounted transmitters). The 8705 flanged sensors are ANSI-150, in sizes 15 - 150 mm. The RMS-S Sanitary Tri-Clamp sensor is available in sizes 25, 40, 50 and 80mm. The IP66 rated transmitter housing is either standard integral head mounted to the sensor tube, or remotely connected by a special low voltage cable for high temperature applications up to 177 °C. The housing is explosion-proof and RFI/EMI protected. Power is by standard 85-250 vac 50-60Hz, or optional 12-42 VDC.

Units are fully programmed and pre-wired to application requirements and wet tested. If requested, as an option, the units are fully fitted out with mounting pipe flanges, earthing rings and electrically wired. This fit-out ensures easy install and commissioning. An optional plug-in M4 display module (housed in the transmitter) is available which indicates flowrate and total display and alarm conditions. Onsite re-programming of set parameters is possible via the display.

**FLOWRANGE PERFORMANCE (Litres/minute) and SIZING TABLE**

Order Code	Size mm	Minimum Litres/min		Transitional Litres/min	Maximum Litres/min	Weight <sup>1</sup> kg (approx)	
		@ $\pm 10\%$	@ $\pm 5\%$	@ $\pm 0.5\%$	@ $\pm 0.5\%$	8711 Wafer	8705 Flanged
RMS004	4	0.01	0.02	0.2	6.2	7	9
RMS008	8	0.05	0.1	0.8	25.1	7	9
RMS015	15	0.15	0.4	3.6	107	7	9
RMS025	25	0.5	1.0	10	305	7	9
RMS040	40	1.0	2.5	25	720	7	10
RMS050	50	2.0	4	40	1180	8	12
RMS080	80	4.0	9	90	2616	12	18
RMS100	100	8.0	14	140	4500	16	22
RMS150	150	20.0	34	341	10225	23	37
RMS200	200	40.0	59	590	19340	30	n/a

Note (1) : All weights exclude connection kit and packaging. The -M4 display module option adds 0.5 kg to weight. The -R option adds 2 kg.

Options (add as suffix to item Order Code):

PVC or Galvanised Iron Connection Kits are also available.

**Order Code**

**Description**

- M4 Onboard flowrate/running-totaliser display module (programming module).
- DC 12-42 VDC powered (no additional cost).
- F Flanged ANSI-150 sensor.
- R Remote mounted electronics via 2 metres cable (nominate for extended cable lengths).
- S Sanitary sensor and connectors.

Accuracy	±0.5% of rate (0.3 to 10m/s). Repeatability: ±0.1% of reading. Measures from 0.01m/s.		
Optional Display	M4: Flowrate and 9-digit running Totaliser indicator onboard module (programmed to application) to most engineering units. Flowmeters are also programmable and can have data comms via HART Protocol.		
Sensor	<ul style="list-style-type: none"> <li>• 8705: Carbon Steel flanged</li> <li>• 8711: Cast Steel wafer</li> <li>• Liner: Tefzel or Teflon. Electrodes: Stainless Steel 316 or Hastelloy-C.</li> </ul>		
Protection	Nema 4x (IP66) sensor and transmitter, explosion proof, RFI/EMI protected.		
Pressure rating	Sizes 15 - 200 mm: 740 psi (5.1Mpa). Wafer 8711. Sizes 4 - 8 mm: 285 psi (2 Mpa). Wafer 8711. 8705 Flanged ANSI-150, sizes 15-150mm: 2MPa pressure.		
Liquid	The measured liquid must have conductivity ≥ 5µs/cm.		
Outputs	Open collector pulse and analogue outputs. All fully programmable (via optional M4 display or via HART).		
Output drives	Frequency: 1 - 1000Hz. Analogue: 4 - 20 mA. Isolated protected transistor switch closure Up to 5.75W, 5 - 24 VDC Load Resistance 100Ω - 100KΩ		
Power	90 - 250vac, 50 - 60Hz. Optional 12-42 VDC. Power consumption: 10 watts max. EMC Compliant. Connection by 2 x 3/4" -14 NPT thread entries (glands fitted).		
Operating temperature	Ambient:		-35 °C to + 65 °C
	Liquid measurement :	Integral	-29 °C to + 70 °C
		Remote (TEFZEL)	-29 °C to +149 °C
		Remote (TEFLON)	-29 °C to +177 °C
	Remote (SANITARY)	-10 °C to +160 °C	
Quality	ISO9001, FM, CSA approvals.		
Enclosure Ratings	NEMA 4X, CSA Enclosure Type 4X		

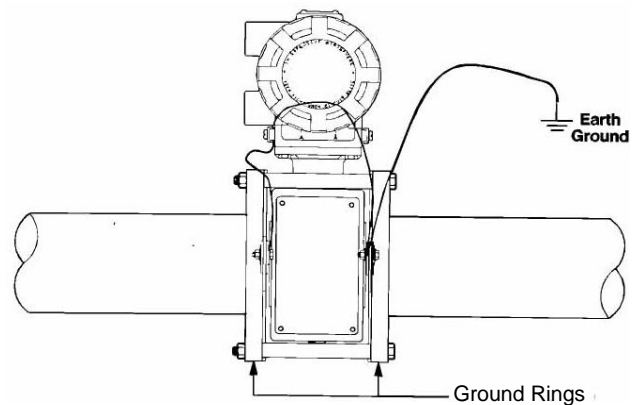
All parameters programmed by ManuFlo to suit the specific application (e.g. output pulses/Litre). Remote versions wired with 2 metres cable between sensor and display. Power cable, pulse cable and glands are pre-fitted. PVC or GAL Connection Kits are available.

**IMPORTANT**

**The display/transmitter is matched to the unique coil factor calibration of the sensor, and they are programmed as a matched pair. Do not swap displays or sensors as the flowmeter will then be out of calibration.**



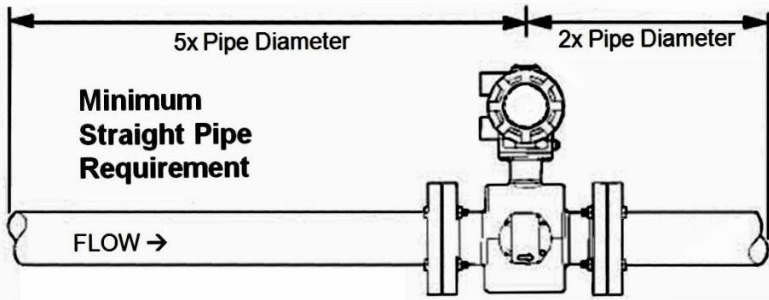
**Sanitary Tri-Clamp Stainless Steel sensor**  
lined in PFA (Teflon), with Stainless Steel 316L electrodes, EDPM gasket seals CIP/SIP cleanable, 3-A approved and EL Certified.



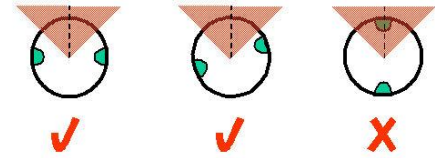
**8711 Wafer Sensor**

## INSTALLATION

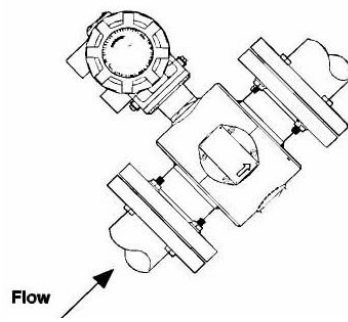
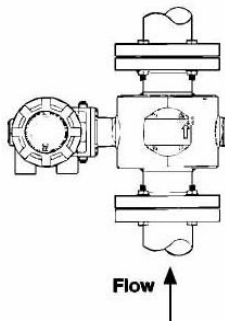
## RMS Electromagnetic Flowmeter



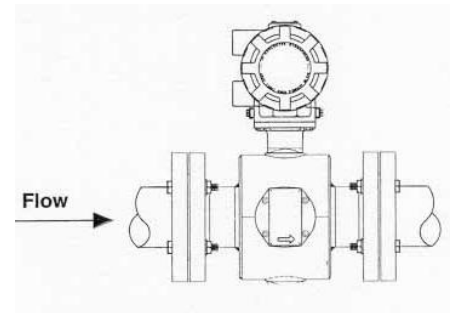
For horizontal runs, the electrodes are properly orientated when not within 45 degrees from upright.



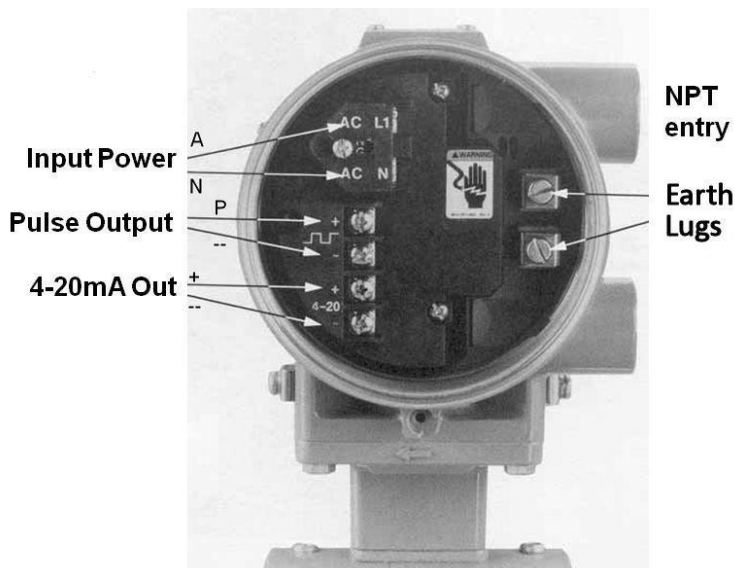
- To Ensure accuracy, install the flowtube as shown in the diagrams.
- If flowing in downward runs, ensure back pressure is adequate so as to keep the flowtube full.
- The flowtube size is an important factor as it affects flow velocity. When used with abrasive slurries, the optimum velocity range is 0.9 to 3.1 m/s (3-10 ft/sec).



Flow in direction of arrow.



## ELECTRICAL CONNECTION

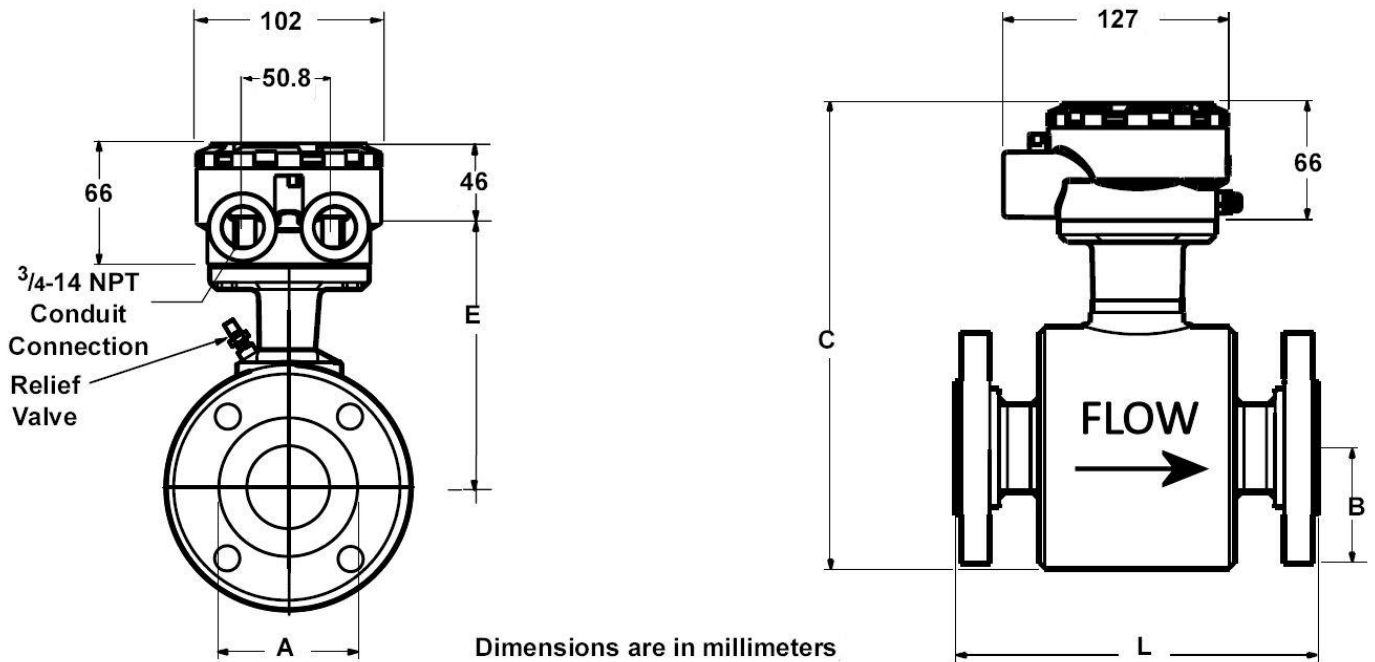


Electrical Connection to Integral Mounted 8732 Transmitter



Shown fitted with optional -M4 display, wired, flanged, and bolted to 8711 sensor.

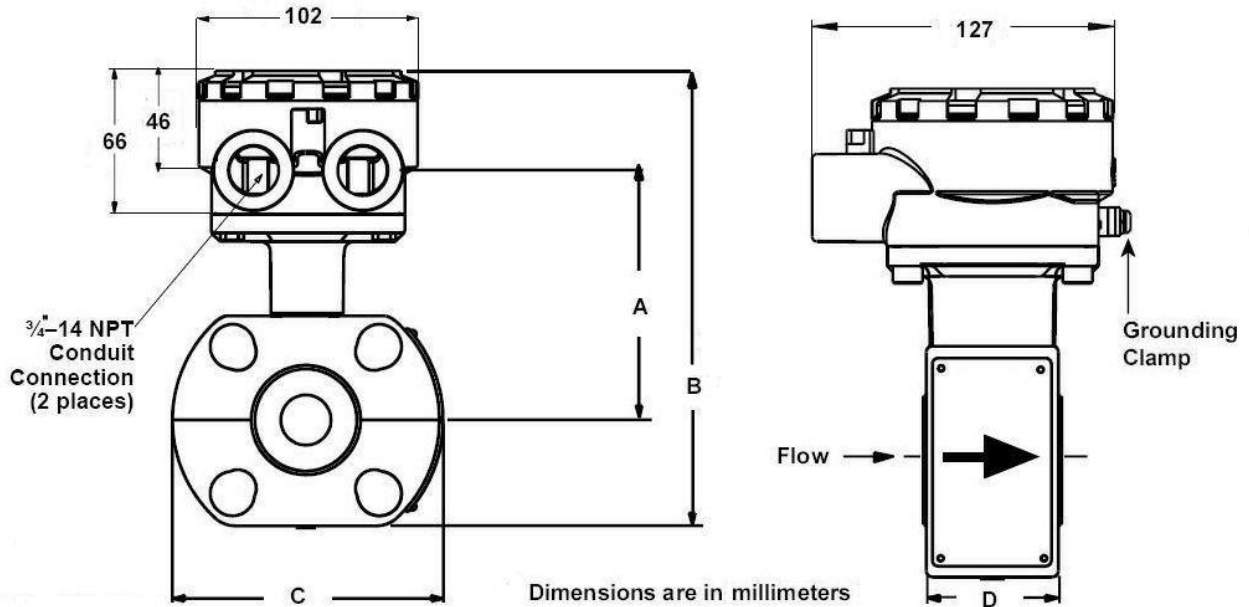
**DIMENSIONAL DRAWINGS - MODEL 8705 FLANGED FLOWTUBE - 15 to 150 mm sizes**



Size (mm)	Linear Face Diameter	Process Flange Radius	Body Height	Centreline to Conduit	Overall Flowtube Length
	A (mm)	B (mm)	C (mm)	E (mm)	L (mm)*
15	35	44	235	120	200
25	51	54	235	120	200
40	73	64	255	130	200
50	92	76	255	130	200
80	127	95	306	156	200
100	157	114	323	165	250
150	216	140	379	193	300

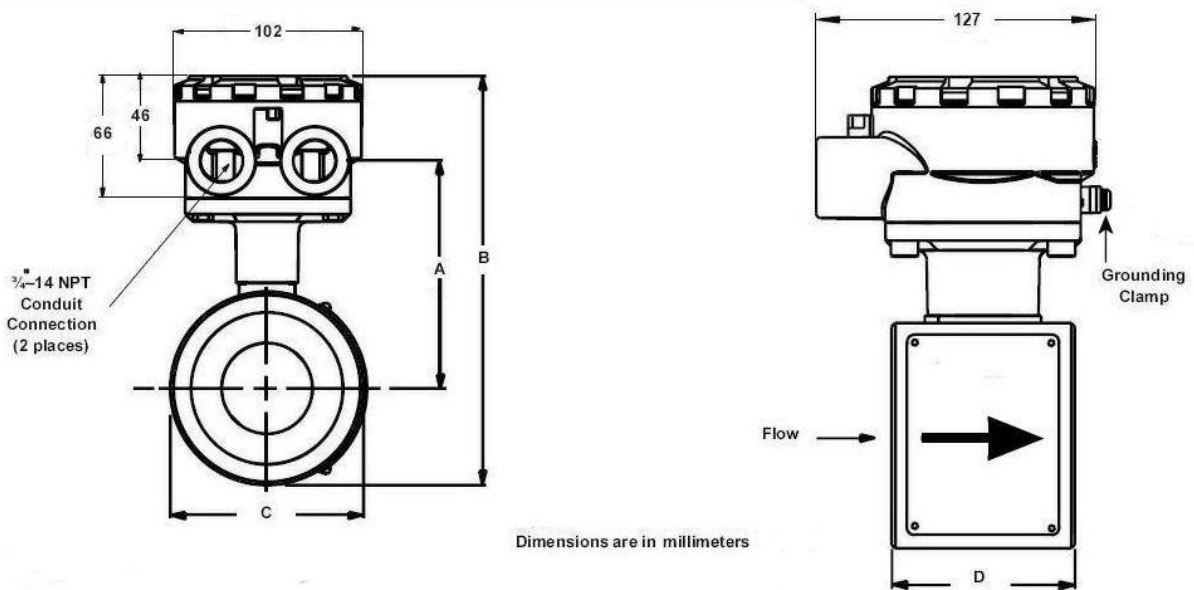
\* Add another 5mm for earthing and 3x gaskets

**DIMENSIONAL DRAWINGS - MODEL 8711 WAFER FLOWTUBE - 4 to 25 mm sizes**



Size (mm)	A max (mm)	B (mm)	C (mm)	D (mm)
4	102	138	90	55
8	102	138	90	55
15	102	138	90	55
25	109	154	114	55

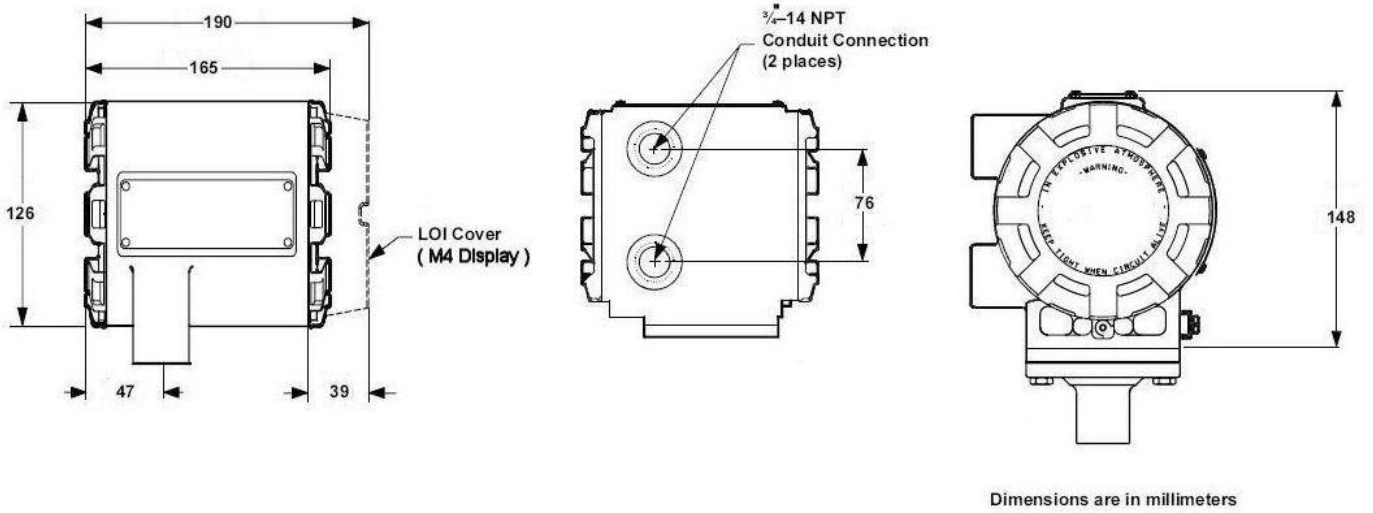
**DIMENSIONAL DRAWINGS - MODEL 8711 WAFER FLOWTUBE - 40 to 200 mm sizes**



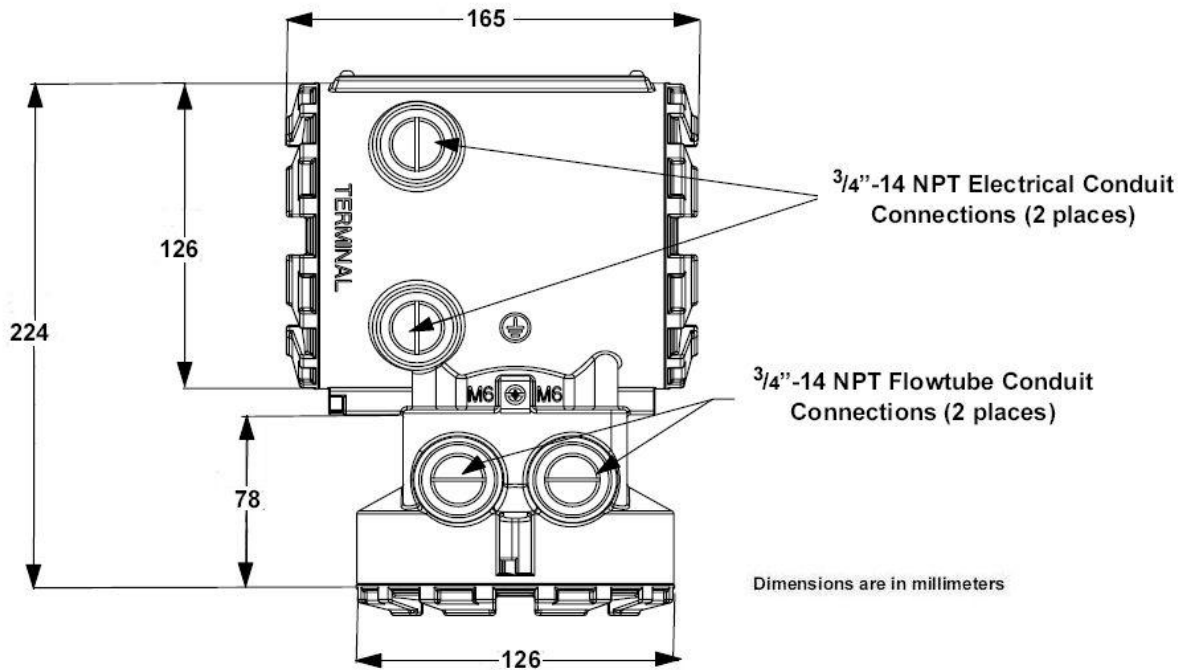
Size (mm)	A max (mm)	B (mm)	C (mm)	D (mm)
40	112	188	83	69
50	118	202	99	83
80	134	233	131	119
100	149	264	162	149
150	177	320	217	174
200	2003	372	270	225



**DIMENSIONAL DRAWING - MODEL 8732C transmitter/display head (ac or DC)**



**DIMENSIONAL DRAWING - MODEL 8732C remote transmitter/display head (ac or DC)**



Due to continuous product improvement, specifications are subject to change without notice.