Dimensions

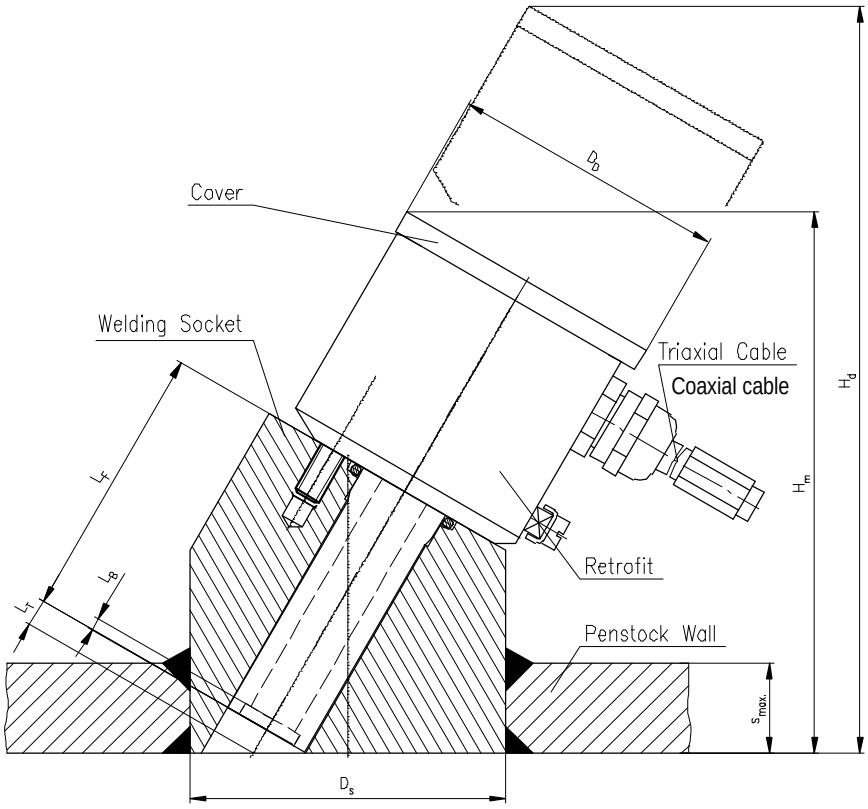

Figure 1: Welding Neck with Retrofit

D_S = Diameter of welding neck

D_D = Diameter of retrofit and cover

$s_{max.}$ = max. pipe wall (see Table 2)

H_m = Height from pipe inner wall to cover

H_d = Height needed for mounting and removing pressure insert

L_T = Mean value between pipe inner wall and emitting surface of pressure insert

L_B = internal acoustic path length

L_F = Distance between emitting surface of Retrofit and outer face of welding neck

Paths Qty	Retrofit Welding Neck Type	Order No.	Transducer Dimensions [mm/in.] D_S	D_D	H_m	H_d	Pipe Parameters [mm/in.] L_T	L_B	L_F
1	MFATRR11	00 66 850.001	60/2.36”	60/2.36”	94/3.7”	127/5”	6.1/0.24”	3.9/ 0.154”	38.5/1.52”
	MFATRR12	00 66 850.002	70/2.75”		113/4.45”	166/6.54”	6/0.236”		61/2.40”
2	MFATRR13	00 66 850.003	80/3.15”		109/4.29”	163/6.42	0		69.3/2.73”
	MFATRR14	00 66 850.004	100/3.94”		127/5”	199/7.83”			95.7/3.77”

Table 1: Transducer Dimensions

Short description

The Retrofit MFATRR1x replaces the RISONIC Transducers MFURxN.xxx. The retrofit can be mounted without any changes to the existing welding neck. The transducers can be operated with the old processing unit MFUCURN as well as with the RISONIC modular application; however, with RISONIC modular, only 1MHz transducers are supported. Rittmeyer recommends using the retrofits with the newer RISONIC modular application, because of its more accurate measurement method and enhanced features.

Type of Retrofits

The Retrofit MFATRR1x consists of transducers and matching PCBs for a one plane measurement with one or two paths (for crossed layouts, double the amount is needed). The transducers can be used with the existing cables. The installation of the retrofit is only possible under dewatered conditions. The cable length from transducer to the processing unit shall not exceed 300 m (984 ft.).

Path Qty	RISONIC-Transducer old				Pipe	s_{max}	Retrofit Welding Neck		
	Measurement installed Type	Order-No.	Welding Welding Neck	Transducer	D [mm]		Type	Order No.	Spare Oscillator
1	MFUR1N.001	00 65 400.001	00 65 405.001	00 65 403.001	150 - 200	20	**Not available**		
	MFUR1N.002	00 65 400.002	00 65 405.002		200 - 400		MFATRR11	00 66 850.001	MFATZ.71 00 66 854.001
	MFUR1N.003	00 65 400.003	00 65 405.003		400 - 2500				
					2500-3000		**Not available**		
	MFUR1N.004	00 65 400.004	00 65 406.002	00 65 403.002	400 - 700	40	MFATRR12	00 66 850.002	MFATZ.72 00 66 854.002
	MFUR1N.005	00 65 400.005	00 65 406.001		700 - 2500				
					2500 - 3000		**Not available**		
	MFUR1N.101	00 65 400.101	00 65 423.001	00 65 421.001	3000 - 8000	63			
2	MFUR2N.010	00 65 400.010	00 65 407.001/2	00 65 403.003	400 - 700	30	MFATRR13	00 66 850.003	MFATZ.73 00 66 854.003
	MFUR2N.011	00 65 400.011	00 65 408.001	00 65 403.004	700 - 2500	50	MFATRR14	00 66 850.004	MFATZ.74 00 66 854.004
					2500 - 3000		**Not available**		
	MFUR2N.110	00 65 400.110	00 65 424.001	00 65 421.002	3000 - 8000				

Table 2: Type of Transducers

Geometry, measuring parameters, pipe parameters

The accuracy indications of the transducer electronics given in the data sheet are dependent on the dimension specifications of the on-site geometry and the pipe parameters being as precise as possible. For the calculation of the flow velocity v, the following mechanical dimension must be determined on-site: the average diameter of the pipe D; the length of the sound path L; the parameter L_T (see Table 1); the length of the coaxial/triaxial cable used in m. These values were surveyed during the installation of the old RISONIC MFURxN.xxx and can be retrieved from the old processing unit MFUCURN. Since a few dimensions of the Retrofit have changed, these values (see Table 1) have to be changed when configuring the RISONIC modular application.

1 Path Measurement **2 Path Measurement**

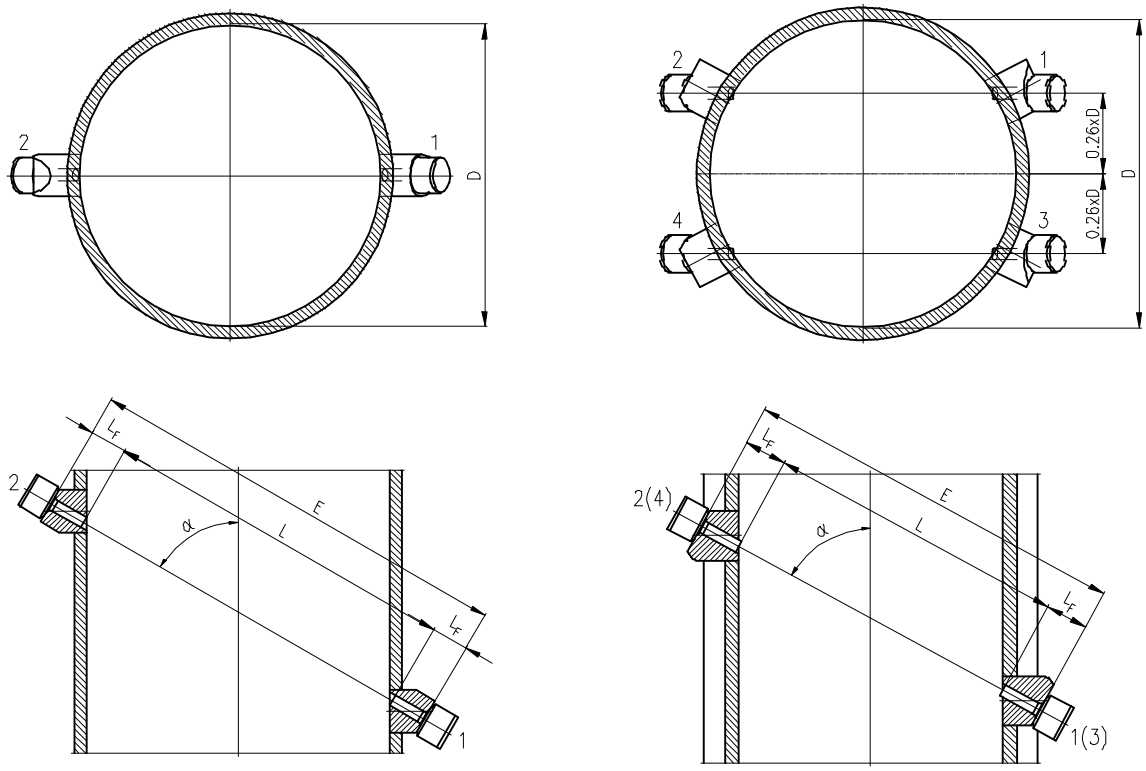

Figure 2: Dimensions on Pipe

D = Average inner diameter of the pipe
L = Length of the sound path
E = Face distance between the 2 welding necks
L_F = Distance between emitting surface of pressure insert and face of welding neck
a = Angle between sound path and flow velocity vector (60°)

Technical Data

- Protection class: IP67 (NEMA-4X)
- Material Transducer: ..... Corrosion-resistant steel 1.4301 (316)
- Environmental temperature: ..... -30 °C to +70 °C (-20 °F to +158 °F)
- Humidity: ..... 100 % relative humidity

Application Notes

- The liquid must be permeable to sound. It must not contain a too high concentration of air bubbles or entrained particles and sediments.

Accessory (optional)

Description	Type	Order No.
Coaxial cable 75 ohm (Refer to data sheet 22.210.04649xx.001)	RIMOZKKxx	04 64 90x
Spare Oscillator according to Table 2	MFATZ.7x	00 66 854.00x

Table 3: Accessory