

# Flow sensor IMF for heat and cold measurement

for nominal flows of  $q_p$  3.5 to 10 m<sup>3</sup>/h  
as standard in metrological class 2 in accordance with DIN EN 1434-1

ZENNER offers a complete series for horizontal and vertical installation positions with the type IMP flow sensors. The flow sensors can be operated in a temperature range from 5 to 120 °C and are therefore suitable for a wide range of applications from multi-family houses to district heating measuring points.

All versions have an MID type examination certificate and/or a type examination certificate for cold meters in Germany and conformity assessment in metrological class 2. So they fulfil the requirements of technical guideline K9 of PTB for measuring points with nominal sizes  $> q_p$  6.

The connection and construction dimensions correspond to DIN EN 1434-2 and DIN EN ISO 4064. Furthermore flange versions are available with flange dimensions corresponding to DIN EN 1092.

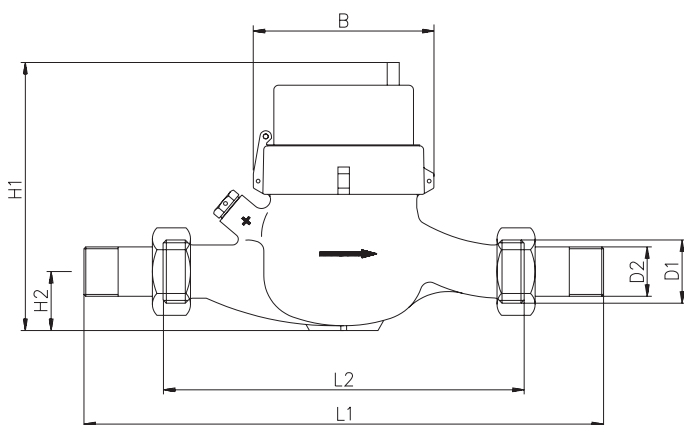
## Product characteristics

- As standard for metrological class 2, fulfils the requirement of technical guideline 9 of PTB
- Permitted temperature range: 5... 120 °C
- Suitable for water glycol heat carriers (without conformity assessment)
- Downpipe and riser pipe versions also available in the special short overall lengths 135 mm (for  $q_p$  3.5 and 6) and 150 mm (for  $q_p$  10)
- Flange versions as standard in pressure stage PN 25
- Optimal for combination with the heat meter calculator ZENNER multidata WR3 or other standard calculators



Technical data flow sensor model IMF										
Nominal flow	$q_p$	m <sup>3</sup> /h	3.5	3.5	6	6	6	6	10	10
Nominal diameter	DN	mm	25	25	25	25	32	32	40	40
		Inch	1	-	1	-	1 ¼	-	1 ½	-
Overall length without connectors	L2	mm	260	260	260	260	260	260	300	300
Overall length with connectors approx.	L1	mm	378	-	378	-	384	-	428	-
Thread meter G x B	D1	Inch	1 ¼	Flange	1 ¼	Flange	1 ½	Flange	2	Flange
Thread connector R x	D2	Inch	1	-	1	-	1 ¼	-	1 ½	-
Metrological class	Standard: Class 2, optionally class 3 according to EN 1434									
Installation position	Horizontal (the register always has to face upwards)									
Pulse value		l/pulse	10	10	10	10	10	10	10	10
Pulse cable length		m	1.5 / 3 (extendable by 7 m)							
Maximum flow	$q_s$	m <sup>3</sup> /h	7	12	12	12	12	12	20	20
Maximum flow (*)	$q_i$	m <sup>3</sup> /h	0.14	0.12/0.24	0.12/0.24	0.12/0.24	0.12/0.24	0.12/0.24	0.2/0.4	0.2/0.4
Media temperature range		°C	5 ≤ $\Theta_q$ ≤ 120							
Pressure class	PN/PS	bar	16 (Connector) / 25 (Flange)							
Ambient conditions / influence figures	- climatic	Highest permissible ambient temperature 55 °C Lowest permissible ambient temperature 5 °C Protection class IP 65								
	- mechanical class	M2								
	- electromagnetic class	E2								
Pressure loss at $q_p$		bar	≤ 0.25							
Heat carrier	Water water-glycol mixture (without conformity assessment)									
Height	H1	mm	160	160	160	160	160	160	174	174
	H2	mm	40	40	40	40	40	40	50	50
Width	B	mm	95	95	95	95	95	95	110	110
Weight approx.		kg	2.9	4.5	2.9	4.5	2.9	5.8	5.1	9.5

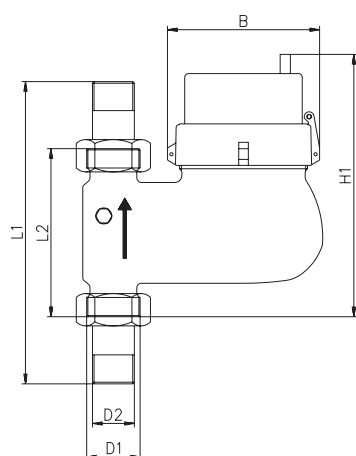
\* optionally



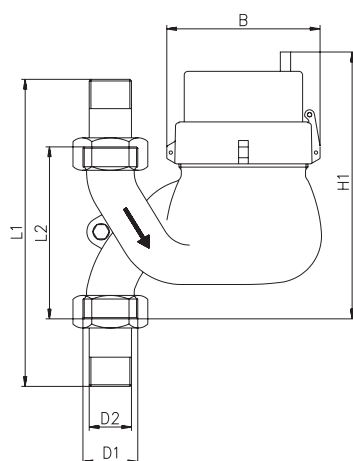
Dimensions IMF

Technical data flow sensor model IMF-ST, IMF-FA									
Nominal flow	$q_p$	m <sup>3</sup> /h	3.5	3.5	6	6	6	10	10
Nominal diameter	DN	mm	25	25	25	25	32	40	40
		Inch	1	1	1	1	1 ¼	1 ½	1 ½
Overall length without connectors	L2	mm	135	150	135	150	150	150	200
Overall length with connectors approx.	L1	mm	253	268	253	268	274	278	328
Thread meter G x B	D1	Inch	1 ¼	1 ¼	1 ¼	1 ¼	1 ½	2	2
Thread connector R x	D2	Inch	1	1	1	1	1 ¼	1 ½	1 ½
Metrological class	Standard: Class 2, optionally class 3 according to EN 1434								
Installation position	Horizontal (the register always has to face upwards)								
Pulse value		l/pulse	10	10	10	10	10	10	10
Pulse cable length		m	1.5 / 3 (extendable by 7 m)						
Maximum flow	$q_s$	m <sup>3</sup> /h	7	7	12	12	12	20	20
Maximum flow (*)	$q_i$	m <sup>3</sup> /h	0.14	0.14	0.12/0.24	0.12/0.24	0.12/0.24	0.2/0.4	0.2/0.4
Media temperature range		°C	5 ≤ $\Theta_q$ ≤ 120						
Pressure class	PN/PS	bar	16						
Ambient conditions / influence figures	- climatic	Highest permissible ambient temperature 55 °C Lowest permissible ambient temperature 5 °C Protection class IP 65							
	- mechanical class	M2							
	- electromagnetic class	E2							
Pressure loss at $q_p$		bar	≤ 0.25						
Heat carrier	Water water-glycol mixture (without conformity assessment)								
Height	H1	mm	195	195	195	195	195	206 (ST) 197 (FA)	231 (ST) 212 (FA)
Width	B	mm	95	95	95	95	95	110	110
Weight approx.		kg	3.1	3.1	3.1	3.1	3.1	5.5	5.5

\* optionally



Dimensions IMF-ST



Dimensions IMF-FA

Nominal size $q_p$ (m <sup>3</sup> /h)	Nominal diameter DN	Overall length (mm)	Connection	Installation position	Pressure stage	Article number
3.5	25	260	Thread	Horizontal	PN 16	147981 / 157958*
3.5	25	260	Flange	Horizontal	PN 25	150218 / 157959*
3.5	25	135	Thread	Riser pipe	PN 16	150299
3.5	25	150	Thread	Riser pipe	PN 16	147982 / 163592*
3.5	25	135	Thread	Downpipe	PN 16	150300
3.5	25	150	Thread	Downpipe	PN 16	150301 / 157960*
6	25	260	Thread	Horizontal	PN 16	150302 / 157961*
6	32	260	Thread	Horizontal	PN 16	147983
6	25	260	Flange	Horizontal	PN 25	150303 / 157962*
6	32	260	Flange	Horizontal	PN 25	150304
6	25	135	Thread	Riser pipe	PN 16	150305
6	25	150	Thread	Riser pipe	PN 16	150306 / 163593*
6	32	150	Thread	Riser pipe	PN 16	147989
6	25	135	Thread	Downpipe	PN 16	150307
6	25	150	Thread	Downpipe	PN 16	150308 / 157963*
6	32	150	Thread	Downpipe	PN 16	150309
10	40	300	Thread	Horizontal	PN 16	147990 / 157964*
10	40	300	Flange	Horizontal	PN 25	150310 / 157965*
10	40	150	Thread	Riser pipe	PN 16	147991
10	40	200	Thread	Riser pipe	PN 16	150311 / 163594*
10	40	150	Thread	Downpipe	PN 16	150312
10	40	200	Thread	Downpipe	PN 16	150313 / 157966*
Pulse cable extension set, comprising: Cable connection piece with protection class IP 65 / 68, two-wire cable (length approx. 7 m, fitted with wire end ferrules), 2 adhesive seals						152146

\*Versions for cooling meters in Germany (for consumption billing with cooling meters in Germany a separate domestic type examination certificate and conformity assessment is required)

### Technical data pulsers

	Counter output
class according to EN 1434-2	OA
Switch variants	Reed contact
Polarity reversal	possible
Duration of the pulse	≥ 100 ms
Pulse break	≥ 100 ms
Bounce time	≥ 1 ms
Input magnitude	30 V
Greatest input current	27 mA
Protection resistor	68 Ohm
Pulse value	In accordance with the details on the type plate
Connection line length, max.	25 m

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