

# RAY FS WP 457

## FLOW SENSOR | MECHANICAL

**DIEHL**  
Metering



### APPLICATION

Volume measuring component for measuring heat.

### FEATURES

- ▶ Facility for remote transmission of flow rates
- ▶ Encapsulated and evacuated counter
- ▶ Counter can be rotated as required for easier reading
- ▶ Easily replaceable reed switch
- ▶ The reed switch is fitted with a 100  $\Omega$ , ¼ W protective resistor (cable length 3 m). Can be ordered without series resistor
- ▶ Contact rating (without series resistor) max. 24 V (SELV) 0.2 A
- ▶ Outstanding long-term accuracy achieved by mounting vane in ring sapphire and carbide bearing
- ▶ Sealed shield protects against magnetic interference
- ▶ Very low pressure loss
- ▶ Approved according MID in class 2 and 3
- ▶ Completely dry-running

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### GENERAL

RAY FS WP 457			
Application		Heating	
Mounting position		Any position	
Medium temperature range	°C	10 ... 105	
Ambient temperature	°C	5 ... 55	
Ambient class		E1 + M1	
Nominal pressure	PN	bar	16 <sup>1</sup>
Protection class		IP 54	
Approval		MID (DE-15-MI004-PTB004)	

<sup>1</sup>special version on request

### REACH

Information pursuant to Article 33 (1) of Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006:

This product series contains components with the following substances in a concentration of more than 0.1% weight by weight (w/w):

- Lead (CAS no.: 7439-92-1)

### TECHNICAL DATA

Nominal diameter	DN	mm	50	65	80	150	200
Nominal flow rate	q <sub>p</sub>	m <sup>3</sup> /h	15	25	32	200	200
Overload flow rate (short term)		m <sup>3</sup> /h	60	60	90	400	500
Maximum flow rate	q <sub>s</sub>	m <sup>3</sup> /h	30	30	45	300	300
Minimum flow rate	q <sub>i</sub>	m <sup>3</sup> /h	1.5	2.5	3.2	20	20
Starting flow rate		l/h	130	130	400	1500	2000
Pressure loss at q <sub>p</sub>	Δp	bar	0.02	0.02	0.01	0.05	0.002
Flow resistance coefficient Zeta			0.9	0.9	0.65	1	0.13
Pulse value reed switch <sup>1</sup>		l/pulse	100	100	100	100	100
Metrological class		q <sub>p</sub> / q <sub>i</sub>	10:1 <sup>2</sup>	10:1 <sup>2</sup>	10:1	10:1	10:1
Flow rate at 0.1 bar pressure loss		m <sup>3</sup> /h	35	56	102	280	1414

<sup>1</sup>other pulse values on request

<sup>2</sup>other q<sub>p</sub> / q<sub>i</sub> on request

### DISPLAY RANGE

Nominal diameter	DN	mm	50	65	80	150	200
0.5 l ... 999,999 m <sup>3</sup>			•	•	•		
5.0 l ... 9,999,999 m <sup>3</sup>						•	•

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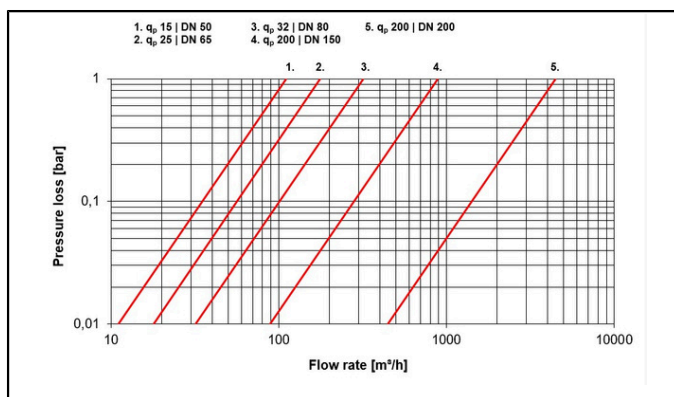
FLOW SENSOR | MECHANICAL

## DIMENSIONS

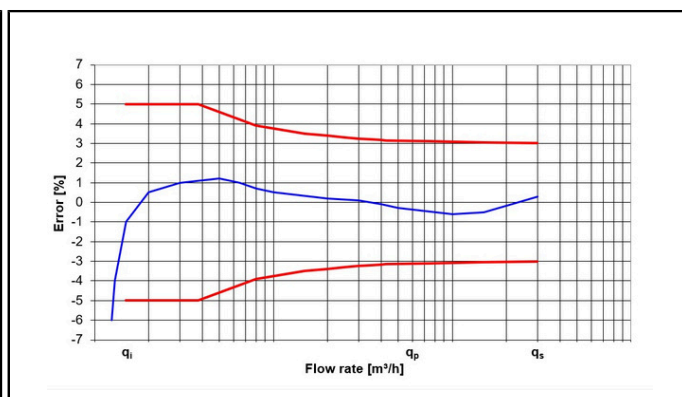


Nominal diameter	DN	mm	50	65	80	150	200
Overall length	L	mm	200	200	200 / 225	300	350
Flange diameter	D	mm	165	185	200	285	340
Hole circle diameter	K	mm	125	145	160	240	295
Number of screwholes		pcs	4	4	8	8	8 / 12
Screw hole diameter	D1	mm	18	18	18	22	22
Height	H	mm	75	82.5	94	135	163
Height (without counter extension)	H1	mm	141	141	141	244	244
Height (with counter extension)	H1	mm	182	182	182	284	284
Diameter	ØB	mm	150	150	150	285	340
Weight		kg	11.1	11.6	12.5	39	49

## PRESSURE LOSS GRAPH / TYPICAL ERROR GRAPH



Pressure loss graph



Typical error graph