



H250 Technical Datasheet

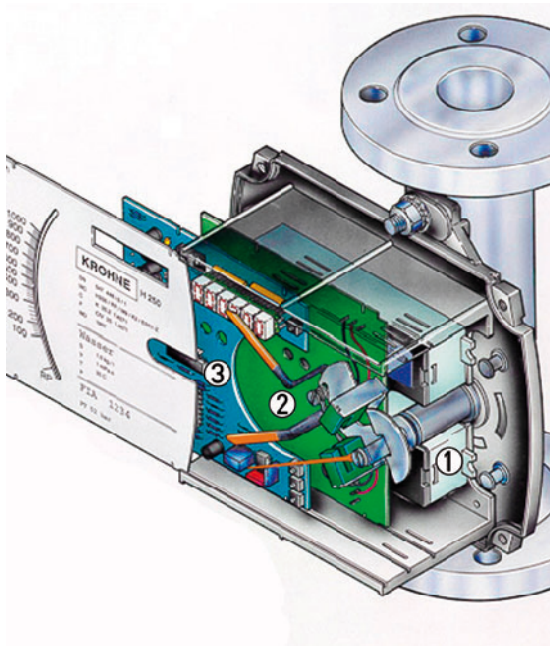
Variable-area flowmeter

- Complete family with different displays
- Local indication without the need for auxiliary power
- Measurement in all flow directions
- Rugged design for extreme operating conditions
- Flexible and can be adapted to meet customer-specific requirements
- Special food & pharmaceutical models



The standard solution for the process industry

The H250 all-metal flowmeter is used to measure the volumetric or mass flow rate of liquids, gases and vapors.



- ① ESK2A - ESK3PA
- ② Limit switches
- ③ ESK Z meter

Highlights

- Consistent overall length
- Low pressure loss for gas applications
- Measurement at operating pressures up to 3000 bar
- Measurement at extremely low and high process temperatures (-200...+450°C)
- Fast non-interruptive retrofitting of modules
- The only EHEDG-certified variable-area flowmeter approved for use in food & pharmaceutical applications.
- Without dead spaces, CIP/SIP-compatible
- SIL 2 certified

Industries

A universal meter for all industries, such as:

- Chemical
- Petrochemistry
- Pharmaceutical
- Machinery
- Food & Beverage
- Oil & Gas
- Iron, Steel & Metal
- Power Plants
- Paper & Pulp
- Water, Wastewater Sector

Applications

- Continuous gas and liquid measurement
- Measurement of non-conductive media
- Industrial combustion control
- Compressor monitoring
- Dry-run protection of pumps

The all-metal product family

H250 variable-area flowmeters



For flow rates up to 120 m³/h water and 2800 m³/h air

- ❶ H250/RR/M9
 - Local indication without the need for auxiliary power
 - max. 2 limit switches, type NAMUR, NAMUR intrinsically safe or 3-wire open collector
 - 2-wire current output 4...20 mA, HART™ or Profibus communication
 - 6-digit flow totalizer (non-Ex)
- ❷ H250/RR/M10
 - Explosion proof terminal housing Ex d
 - 2 digital adjustable limit switches, 2-wire open collector or type NAMUR
 - 2-wire current output 4...20 mA, HART™ communication
 - Pulse output up to 10Hz (also for electromechanical counters)
 - 12-digit flow totalizer with external reset (batch operation)
- ❸ H250/RR/M8M
 - Slim design allows high packing density
 - Local indication without the need for auxiliary power
 - 2 limit switches, 2-wire type NAMUR or NAMUR intrinsically safe
- ❹ H250/RR/M8E
 - Slim design allows high packing density
 - 2-wire current output 4...20 mA, HART™ communication

For flow rates greater than 0.15 l/h water and 1.6 l/h air:

DK metal variable-area flowmeters



- ❶ DK32 - local indicator with max two limit switches, horizontal process connection
- ❷ DK34 - local indicator with max. two limit switches, vertical process connection
- ❸ DK37/M8M - large and local indicator with max. two limit switches
- ❹ DK37/M8E - bar chart display and current output 4...20 mA, HART™ communication

Technical Data

Field of application	Flow measurement of liquids, gases and vapors
Operating method / measuring principle	Float measuring principle
Measuring accuracy H250 /RR /HC /F	± 1.6% to VDI / VDE Code 3513, Sheet 2
Measuring accuracy H250/C (Ceramic, PTFE)	± 2.5% to VDI / VDE Code 3513, Sheet 2
Inlet run	≥ 5 x DN
Outlet run	≥ 3 x DN
Operating pressure PS	to 3000 bar as per Directive 97/23/ EC dated 29 April 1999
Test pressure PT	in accordance with Pressure Equipment Directive 97/23/EC or AD 2000-HP30
Min. required operating pressure	twice pressure loss (see measuring ranges)
Float damping recommended for gas measurement:	
DN15 / ½"	Operating pressure less than 0.3 bar
DN25 / 1"	Operating pressure less than 0.3 bar
DN50 / 2"	Operating pressure less than 0.2 bar
DN80 / 3"	Operating pressure less than 0.2 bar
DN100 / 4"	on request

Nominal sizes, DIN

Nominal sizes as per EN 1092-1	Bolts Quantity x size	Tightening torques	
		SI [Nm]	Imp [ft lbs]
DN15 PN40	4 x M12	9.8	7.1
DN25 PN40	4 x M12	21	15
DN50 PN40	4 x M16	57	41
DN80 PN16	8 x M16	47	34
DN100 PN16	8 x M16	67	48

Nominal sizes, ASME

Normal sizes as per ASME B 16.5	Bolts Quantity x size	Tightening torques	
		SI [Nm]	Imp [ft lbs]
½" 150 lbs / 300 lbs	4 x ½"	5.2	3.8
1" 150 lbs / 300 lbs	4 x ½"	10	7.2
2" 150 lbs / 300 lbs	4 x 5/8"	41	30
3" 150 lbs / 300 lbs	4 x 5/8"	70	51
4" 150 lbs / 300 lbs	8 x 5/8"	50	36

Weights

Weights [kg]	H250	with heating		H250/C			Screw connection DIN 11864-1
	EN 1092-1	Flange connection	Ermeto 12 connection	EN 1092-1	ASME B 16.5 / 150 lbs	ASME B 16.5 / 300 lbs	
Nominal diameter							
DN15 / ½"	3.5	5.55	5.7	3.5	3.2	3.5	2
DN25 / 1"	5	7.45	7.6	5	5.2	6.8	3.5
DN50 / 2"	8.2	11.15	11.3	10	10	11	5
DN80 / 3"	12.2	14.75	14.9	13	13	15	7.6
DN100 / 4"	14	17.35	17.5	15	16	17	10.3

Process connections

	Standards	Connection dimensions	Pressure rating
Flange (H250/RR /HC /C)	EN-1092-1	DN15...DN100	PN16...PN100
	ASME B16.5	1/2"...4"	150 lbs...600 lbs
	JIS B 2238	LR15...LR100	10K...20K
Clamp connections (H250/RR /F)	DIN 32676	DN15...DN100	10 bar...16 bar
	ISO 2852	Size 25...139.7	10 bar...16 bar
Threaded connections (H250/RR /HC /F)	DIN 11851	DN15...DN100	25 bar...40 bar
	SMS 1146	1"...4"	6 bar
Inside thread welded (H250/RR /HC)	ISO 228	G1/2"...G2"	PN50
	ASME B1.20.1	1/2"...2" NPT	
Inside thread, screwed (H250/RR /HC)	ISO 228	G1/2"...2"	PN40...PN50
	ASME B1.20.1	1/2"...2" NPT	
with insert and union nut	ASME B1.20.1	1/2"...2" NPT	
Aseptic threaded connection (H250/F)	DIN 11864 - 1	DN15...DN50	PN40
Aseptic flange (H250/F)	-	DN80...DN100	PN16
	DIN 11864 - 2	DN15...DN50	PN40
	-	DN80...DN100	PN16
Meters (H250/RR /HC) with heating:	EN 1092-1	DN15	PN40
Heating with flange connection	ASME B16.5	1/2"	150 lbs / RF
Heating with pipe connection for Ermeto	-	E12	PN40

Higher pressure ratings and other connections available on request

Materials

RR - stainless steel, HC - Hastelloy, C - ceramic/PTFE, F - food

Meter	Measuring tube	Flange / sealing face	Metal float	Stop / guide	Standard orifice plate
H250 /RR	CrNi steel 1.4404 ①	CrNi steel 1.4404 solid ①	CrNi steel 1.4404 ①	CrNi steel 1.4404 ①	-
H250/HC	Hastelloy C4 [2.4610]	CrNi steel 1.4571, Hastelloy C4 [2.4610] plated ①	Hastelloy C4 [2.4610]	Hastelloy C4 [2.4610]	-
H250/C ②	CrNi steel 1.4571 with liner made from PTFE ③	CrNi steel 1.4571 with liner made from PTFE ③	HC4, PTFE or Al203 with gasket: Kalrez KLR 6375 ④	Al203 and PTFE	Al203
H250/F ⑤	CrNi steel 1.4435	CrNi steel 1.4435	CrNi steel 1.4435	CrNi steel 1.4435	-

① available on request CrNi steel 1.4571, for clamp connections CrNi steel 1.4435

② DN100 / 4" PTFE only

③ PTFE-TFM (electrically non-conducting)

④ sealing ring 2035 (Kalrez) or 4079

⑤ wetted surfaces Ra ≤ 0.8 µm

Other options:

- Special material on request: e.g., SMO 254, titanium, 1.4435
- Float damping: ceramic or PEEK
- Gasket for devices with inside thread: O-Ring FPM / FKM (e.g., Viton)

Technical data for indicators M8 M9 M10

M8 indicator

M8M limit switch

Clamp connection	2.5mm ²		
Limit switches	SC3,5-N0-Y	SJ3,5-SN	SJ3,5-S1N
Type	2-wire NAMUR	2-wire NAMUR	2-wire NAMUR
Switch configuration	Normally closed	Normally closed	Normally open
Nominal voltage U0	8 VDC	8 VDC	8 VDC
Pointer shaft not read	≥3 mA	≥3 mA	≤1 mA
Pointer shaft read	≤1 mA	≤1 mA	≥3 mA

M8E current output

Cable fitting	M16 x 1.5	
Cable diameter	8...10 mm	
Clamp connection	4 mm ²	
Measurement signal	4...20 mA for 0...100% flow value	Two-wire technology
Power supply	14.8...30 VDC	
Min. power supply with HART™	20.5 VDC	
Effect of supply power	< 0.1%	
External resistance dependence	< 0.1%	
Effect of temperature	< 10uA / K	
Max. external resistance / load impedance	640 ohms (30 VDC)	
Min. load with HART™	250 ohms	

M8E HART

M8E HART™ parameter configuration		
Name of manufacturer (code)	KROHNE Messtechnik (69)	
Name of model	M8E (230)	
HART™ protocol revision	5.1	
Device revision	1	
Physical layer	FSK	
Device category	Transmitter	

M8E process variable

M8E process variable flow	Values [%]	Signal output [mA]
Over range	+105 (± 1%)	20.64...20.96
Device error detection	> 110	> 21.60
Maximum	112.5	22
Multi-drop operation	-	4.5

M9 indicator

M9 cable fitting

Cable fitting	Material	Cable diameter
M 16x1.5 Standard	PA	5...10 mm
M 20x1.5	PA	8...13 mm
M 16x1.5	Nickel-plated brass	5...9 mm
M 20x1.5	Nickel-plated brass	10...14 mm

M9 limit switches

Clamp connection	2.5mm ²			
Limit switches	SC3,5-N0-Y	SJ3,5-SN	SJ3,5-S1N	SB3,5-E2
Type	2-wire NAMUR	2-wire NAMUR	2-wire NAMUR	3-wire
Switch configuration	Normally closed	Normally closed	Normally open	PNP normally open
Nominal voltage U ₀	8 V	8 V	8 V	10...30 V
Pointer shaft not read	≥3 mA	≥3 mA	≤1 mA	≤ 0.3 V
Pointer shaft read	≤1 mA	≤1 mA	≥3 mA	V _b - 3 V
Continuous current	-	-	-	max. = 100 mA
No-load current I ₀	-	-	-	≤15 mA

M9 current output ESK2A

Clamp connection	2.5 mm ²	
Power supply	12...30 VDC	
Measurement signal	4.00...20.00 mA for 0...100% flow value	Two-wire technology
Power supply	12...30 VDC	
Min. power supply for HART™	18 VDC	
Effect of supply power	< 0.1%	
External resistance dependence	< 0.1%	
Temperature influence	< 5 mA / K	
Max. external resistance / load impedance	800 ohms (30 VDC)	
Min. load with HART™	250 ohms	

M9 ESK2A HART

ESK2A HART™ parameter configuration		
Name of manufacturer (code)	KROHNE Messtechnik (69 = 45h)	
Name of model	ESK2A (226 = E2h)	
HART™ protocol revision	5.9	
Device revision	1	
Physical layer	FSK	
Device category	Transmitter non dc isolated device	

M9 ESK2A process variable

ESK2A process variable flow rate	Values [%]	Signal output [mA]
Over range	+102.5 (± 1%)	20.24...20.56
Device error detection	> 106.25	> 21.00
Maximum	131.25	25
Multi-drop operation	-	4.5
Lift-off voltage	12 VDC	

M9 ESK totalizer

Clamp connection	2.5 mm ²	
Power supply	10...30 VDC	
R _{ext.} Current loop	0...600 ohms	
Power consumption	max. 2.5 watts	
Max. external resistance / load impedance	720 ohms	depending on power supply
Indicating error	< 1%	maximum one scalar unit
Max. reset voltage	30 VDC	
Min. reset pulse	20 ms	
	.	
Power supply	10...30 VDC	
Max. current	50 mA	
Max. dissipation	250 mW	
T on	80 ms	fixed pulse width
T off	depends on flow rate	
V on	V _b – 3 volts	
V off	0 volts	
Pulse value	1 pulse = 1 display totalizer advance	= 1 flow unit (1 liter, 1 m ³ ...)

M9 ESK3PA

Clamp connection	2.5mm ²	
Bus cable R'	15...150 ohms/km	
Bus cable L'	0.4...1 NH/km	
Bus cable C'	80...200 nF/km.	

M9 ESK3PA hardware

Hardware	according to IEC 1158-2 and FISCO model	
Power supply	9...32 VDC	
Base current	12 mA	
Starting current	< Base current	
FDE	< 18 mA	
Accuracy as per VDI/ VDE 3513	1.6	
Measurement resolution	< 0.1 % of full-scale value	
Temperature influence	< 0.05 % / K of full-scale value	

M9 ESK3PA software

Software		
GSD	Device master file	
Device profile	Profils B, V3.0	
Function blocks		
Flow rate [A10]	Volume or mass	
Totalizer (TOT0)	Volume totalizer	Default units: [m3]
Totalizer (TOT1)	Mass totalizer	Default units: [kg]
Address range	0...126, default 126	
SAP's	Service_Access_Points	
DD	Device description	

M10 indicator

M10 indicator

Cable fitting	none	(standard)
M 20x1.5	on request	
M 20x1.5 Ex d	on request	

M10 current output

current output	Two-wire technology	
Power supply	24 VDC +/- 30	
Signal output current	4...20 mA	
Effect of supply power	< 0.1	
External resistance dependence	< 0.1	
Temperature influence	< 5 uA/K	
External resistance / load impedance	≤ 630 ohms	
External resistance with HART	≥ 250 ohms	

M10 HART

Name of manufacturer (code)	KROHNE Messtechnik (69)	
Name of model	M10A	
HART™ protocol revision	5.1	
Device revision	1	
Physical layer	FSK	
Device category	Transmitter	

M10 process variable

	Values [%]	Signal output [mA]
Over range	+105 (± 1%)	20.64...20.96
Device error detection	> 110	> 21.60
Maximum	112.5	22
Multi-drop operation	-	4.5

M10 digital output

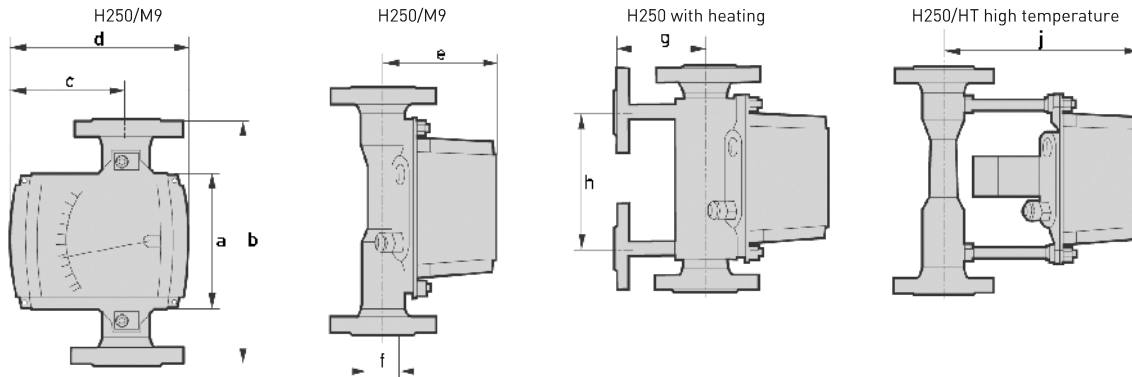
Binary outputs	galvanically isolated	
Operating mode	Binary output	NAMUR or open collector
configurable as	switching contact	normally open / normally closed or
	pulse output	max. 10 pulses per second
NAMUR binary output		
Power supply	8 V	
Signal current	> 3 mA if switching value not reached;	
	< 1 mA when switching value reached	
Open collector binary output		
Power supply	8...30 VDC	
Pmax	500 mW	
Imax	100 mA	

M10 reset input

Binary input	galvanically isolated	
Operating mode	Counter reset	
configurable as	active HI / active LO	
Voltage level	5...30 VDC	
Current drawn	≤ 1 mA	
Pulse length (active)	≥ 500 ms	

Dimensions

H250/M9 dimensions

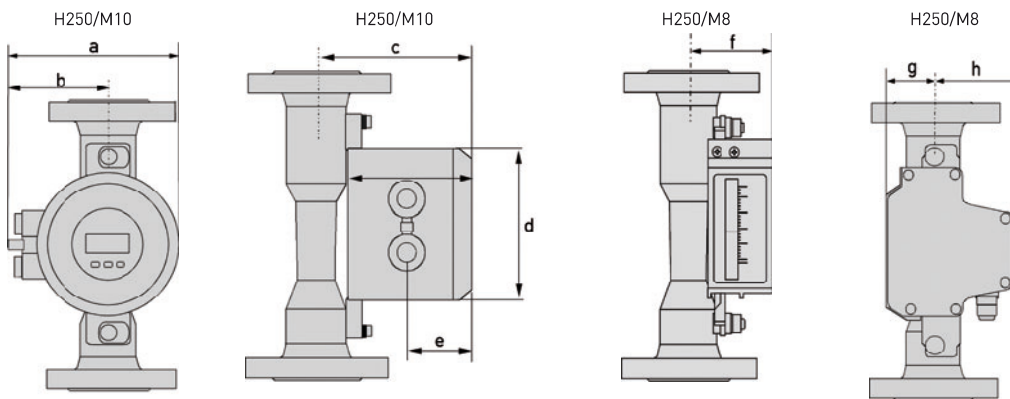


	Dimensions [mm]									
	a	b	c	d	e	Ø f	g	h	j	
DN15 PN40	138	250	110.5	181	107	20	100	150	187	
DN25 PN40	138	250	110.5	181	119	32	106	150	199	
DN50 PN40	138	250	123.5	181	132	65	120	150	212	
DN80 PN40	138	250	123.5	181	148	89	160	150	228	
DN100 PN40	138	250	123.5	181	158	114	150	150	232	

Overall height of H250/C (ceramic/PTFE) from 3" / 300 lbs: 300 mm

Overall height of H250/F (food) with threaded joint as per ISO 228 with inside thread: 300 mm

H250/M10 /M8 dimensions



	M10 dimensions [mm]					M8M dimensions [mm]				M8E dimensions [mm]		
	a	b	c	d	e	f	g	h	f	g	h	
DN15 PN40	147	83	118	Ø 132	55	63	60	58.5	53.5	66	52.5	
DN25 PN40	147	83	130	Ø 132	55	75	60	58.5	65.5	66	52.5	
DN50 PN40	147	83	143	Ø 132	55	89	73	45.5	79.5	79	39.5	
DN80 PN40	147	83	160	Ø 132	55	105	73	45.5	95.5	79	39.5	
DN100 PN40	147	83	169	Ø 132	55	114	73	45.5	104.5	79	39.5	

Measuring ranges

H250/RR - stainless steel, H250/HC - Hastelloy

Turndown ratio 10:1

100% flow values

H250/RR, H250/HC, H250/F		Water			Air			Max. pressure loss			
Float ▶		TIV	CIV	DIV	TIV (Alu)	TIV	DIV	TIV Alu	TIV	CIV	DIV
Nominal diameter	Cone	[l/h]	[l/h]	[l/h]	[m ³ /h]	[m ³ /h]	[m ³ /h]	[mbar]	[mbar]	[mbar]	[mbar]
DN15 1/2"	K 15.1	18	25	-	0.42	0.7	-	12	21	26	-
	K 15.2	30	40	-	0.7	1	-	12	21	26	-
	K 15.3	55	63	-	1	1.5	-	12	21	26	-
	K 15.4	80	100	-	1.7	2.2	-	12	21	26	-
	K 15.5	120	160	-	2.5	3.6	-	12	21	26	-
	K 15.6	200	250	-	4.2	5.5	-	12	21	26	-
DN25 1"	K 15.7	350	400	700	6.7	10	18 ①	12	21	28	38
	K 15.8	500	630	1000	10	14	28 ①	13	22	32	50
	K 15.8	-	-	1600 ②	-	-	50 ②	-	-	-	85
	K 25.1	480	630	1000	9.5	14	-	11	24	32	72
	K 25.2	820	1000	1600	15	23	-	11	24	33	74
DN50 2"	K 25.3	1200	1600	2500	22	35	-	11	25	34	75
	K 25.4	1700	2500	4000	37	50	110 ①	12	26	38	78
	K 25.5	3200	4000	6300	62	95	180 ①	13	30	45	103 ③
	K 55.1	2700	6300	8400	58	80	230 ①	8	13	74	60
DN80 3"	K 55.2	3600	10000	1400	77	110	350 ①	8	13	77	69
	K 55.3	5100	16000	25000	110	150	700 ①	9	13	84	104
	K 85.1	12000	25000	37000	245	350	1000 ①	8	16	68	95
DN100 4"	K 85.2	16000	40000	64000	280	400	1800 ①	9	16	89	125
	K105.1	19000	63000	100,000	-	550	2800 ①	-	-	120	220

① P > 0.5 bar

② with TR float

③ 300 mbar with damping [gas measurement]

Reference condition:

Water at 20°C

Air at 20°C - 1.013 bar abs.

Notes:

- Air measurement - TIV floats: heating not possible
- The stated pressure losses apply for water and air at maximum flow rate.
- Other flow ranges on request
- The conversion to other process products or operating data (pressure, temperature, density, viscosity) is performed at KROHNE using the calculation method in accordance with VDE /VDI Code 3513

H250/C - ceramic/PTFE

Turndown ratio 10:1

100% flow values

H250/C		Flow			Max. pressure loss		
		Water		Air	Water		Air
Liner / float ▶		PTFE	Ceramic	Ceramic	PTFE	Ceramic	Ceramic
Nominal diameters	Cone	[l/h]	[l/h]	[m ³ /h]	[mbar]	[mbar]	[mbar]
DN15, 1/2"	E 17.2	25	30	-	65	62	62
	E 17.3	40	50	1.8	66	64	64
	E 17.4	63	70	2.4	66	66	66
	E 17.5	100	130	4	68	68	68
	E 17.6	160	200	6.5	72	70	70
	E 17.7	250	250	9	86	72	72
	E 17.8	400	-	-	111	-	-
	DN25, 1"	E 27.1	630	500	18	70	55
E 27.2		1000	700	22	80	60	60
E 27.3		1600	1100	30	108	70	70
E 27.4		2500	1600	50	158	82	82
E 27.5		4000 ①	2500	75	290	100	100
DN50, 2"	E 57.1	4000	4500	140	81	70	70
	E 57.2	6300	6300	200	110	80	80
	E 57.3	10000	11000	350	170	110	110
	E 57.4	16000 ①	-	-	284	-	-
DN80, 3"	E 87.1	16000	16000	-	81	70	-
	E 87.2	25000	25000	-	95	85	-
	E 87.3	40000 ①	-	-	243	-	-
DN100, 4"	E 107.1	40000	-	-	100	-	-
	E 107.2	60000 ①	-	-	225	-	-

① special float

Reference condition:

Water at 20°C

Air at 20°C - 1.013 bar abs.

Notes:

- The stated pressure losses apply for water and air at maximum flow rate.
- Other flow ranges on request
- The conversion to other process products or operating data (pressure, temperature, density, viscosity) is performed at KROHNE using the calculation method in accordance with VDE /VDI Code 3513

H250H - horizontal installation position

Turndown ratio 10:1 - 100% flow values - measured product water (reference conditions same as H250/RR)

	Float shape	Cone No.	Flow rate		Pressure loss	
			[l/h]		[mbar]	
			Spring A	Spring B	Spring A	Spring B
DN15	DIV TB	K 15.1	70		195	
		K 15.2	120		204	
		K 15.3	180		195	
		K 15.4	280		225	
		K 15.5	450		250	
		K 15.6	700		325	
		K 15.7	1200		590	
		K 15.8	1600	2400	950	1600
DN25	DIV T	K 25.1	1300		122	
		K 25.2	2000		105	
		K 25.3	3000		116	
		K 25.4	5000		145	
		K 25.5	8500	10000	217	336
DN50	DIV T	K 55.1	10000		240	
		K 55.2	16000		230	
		K 55.3	22000	34000	220	420
DN80	DIV T	K 85.1	25000		130	
		K 85.2	35000	60000	130	290
DN100	DIV L	K 105.1	80000	120000	250	340

H250U - vertical installation position - flow direction from top to bottom

	Float shape	Cone No.	Flow	Pressure loss
			l/h	mbar
DN15	DIV TB	K 15.1	65	175
		K 15.2	110	178
		K 15.3	170	180
		K 15.4	260	200
		K 15.5	420	220
		K 15.6	650	290
		K 15.7	1100	520
		K 15.8	1500	840
DN25	DIV T	K 25.1	1150	97
		K 25.2	1800	85
		K 25.3	2700	92
		K 25.4	4500	115
		K 25.5	7600	172
DN50	DIV T	K 55.1	9000	220
		K 55.2	15000	230
		K 55.3	21000	240

- The stated pressure losses apply for water at maximum flow rate.
- Other flow ranges on request
- Conversion to other process products or operating data according to VDE /VDI Code 3513

Temperatures

H250/M9 - mechanical indicator without power supply

	Float	Liner	Process temp. [°C]	Ambient temperature [°C]
H250/RR	stainless steel	stainless steel	+300	
H250/HC	Hastelloy C4	Hastelloy C4	+300	
H250/C	PTFE	PTFE	+70	+70
H250/C	Ceramic	PTFE	+150	+70
H250/C	Ceramic	TFM	+250	+120
H250H - H250U			+100	
Min. process temperature			.	
Standard			-196	
H250H H250U			-40	
Ambient temperatures				
Standard				-40...+120
Threaded connection fitting				-20...+120
H250H H250U				-20...+90

H250/M9 - with electric components

DIN	ASME	Installed electric modules	TS °C (Tamb. <40 °C)		TS °C (Tamb. < 60 °C) *	
			Standard	HT	Standard	HT
DN15, DN25	1/2", 1"	ESK II, ESK-S, ESK3-PA	200	300	180	300
		ESK II with counter	200	200	80	130
		Limit switch SC.. SJ..	200	300	200	300
		Limit switch SB..	200	300	130	295
DN 50	2"	ESK II, ESK-S, ESK3-PA	200	300	165	300
		ESK II with counter	180	300	75	100
		Limit switch SC.. SJ..	200	300	200	300
		Limit switch SB..	200	300	120	195
DN 80, DN100	3", 4"	ESK II, ESK-S, ESK3-PA	200	300	150	250
		ESK II with counter	150	270	70	85
		Limit switch SC.. SJ..	200	300	200	300
		Limit switch SB..	190	300	110	160

* a heat resistant cable is required unless heat insulation is provided (continuous temperature rating of selected cable: 100°C)

Abbreviations:

- HT- high-temperature version
- ESK II- current transmitter 2-wire technology 4 ... 20 mA
- ESK-S- current transmitter 3-wire technology 0 ... 20 mA
- ESK3-PA- PROFIBUS transmitter
- SC- NAMUR-type limit switch
- SJ- NAMUR-type limit switch, intrinsically safe
- SB- 3-wire type limit switch, open collector

H250/M8 /M10

	Temperature [°C]
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M8M

Max. Tmeas. at Tamb. of +60 °C	200
Min. process temperature TS	-80
with GWG	-25
Max. ambient temperature Tamb.	+70
Min. ambient temperature Tamb.	-25

M8E

Max. Tmeas. at Tamb. of +40°C	+200
Max. Tmeas. at Tamb. of +50°C	+185
Max. Tmeas. at Tamb. of +60°C	+145
Min. Tmeas.	-25
Max. ambient temperature Tamb.	+70
Min. ambient temperature Tamb.	-25

M10

Max. Tmeas. at Tamb. of +60 °C	200
Min. process temperature TS	-80
Max. ambient temperature Tamb.	+75
Min. ambient temperature Tamb.	-40