

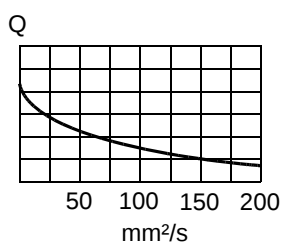
Product Information

Function and benefits

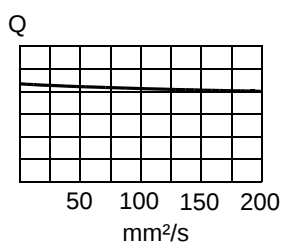
With the inline devices the piston is located in "line" with the connection lines. In the process, the carrying bodies are predominantly manufactured as rotating and can maintain pressure resistances of up to 800 bar. There is a variety of connections available in this device group with predominantly female thread.

The devices have been designed for measurement in water and oil. For use in oil, some devices were modified so that the switching point and/or the measurement is stabilised in the event of a viscosity fluctuation.

not stabilised



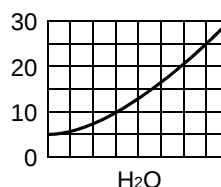
stabilised



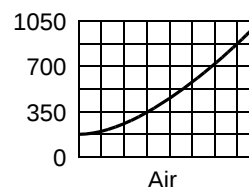
Sensors and Instrumentation

There are, however, also versions which are suitable for use in air or gases or which are specially modified for this use. In this case, the mechanics of the devices are provided with additional friction and damping elements.

Q (l/min)



Q (l/min)



With aggressive media, other materials are used and/or a protective coating is applied to the components. Feel free to contact us for advice for this application.

Device overview

Device		Displays	Switching	Measuring	Range l/min	Nominal widths	Pressure resistance in bar	Medium Temperature	Connection material	Medium				Page
										Water	Oils	Gases	aggressive	
M1J		•			0.4..60	DN 8..25	PN 200	-20..+120 °C	Brass / stainless steel	•	•	○	○	8
H1O1 H2O1		•			0.1..65	DN 8..25	PN 200 (500)	-20..+120 °C	Brass / stainless steel	•	•	○	○	10
H1VO1		•			2..220	DN 32..50	PN 200	-20..+120 °C	Brass / stainless steel	•	•	○	○	12
H1O H2O		•			0.1..65	DN 8..25	PN 200 (500)	-20..+120 °C	Brass / stainless steel	•	•	○	○	14
H1VO		•			2..220	DN 32 - 50	PN 200	-20..+120 °C	Brass / stainless steel	•	•	○	○	16

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Device		Displays	Switching	Measuring	Range l/min	Nominal widths	Pressure resistance in bar	Medium Temperature	Connection material	Medium				Page
										Water	Oils	Gases	aggressive	
H1Z1 H2Z1		•			0.1..65	DN 8..25	PN 200 (500)	-20..+120 °C	Brass / stainless steel	•	•	○	○	18
H1VZ1		•			2..220	DN 32..50	PN 200	-20..+120 °C	Brass / stainless steel	•	•	○	○	20
H1Z H2Z		•			0.1..65	DN 8..25	PN 200 (500)	-20..+70 °C	Brass / stainless steel	•	•	○	○	22
H1VZ		•			2..220	DN 32..50	PN 200	-20..+120 °C	Brass / stainless steel	•	•	○	○	24
MF-003			•		1..100	DN 3	PN 6	-20..+80 °C	Brass	-	-	•	-	26
MF-007			•		0.05..1	DN 7	PN 6	-20..+80 °C	Brass	•	-	-	-	27
FW1-..GP			•		1..11	DN 15..25	PN 10	-20..+90 °C	Plastic	•	○	-	-	28
FW1-..GM			•		1..11	DN 8..25	PN 100 (800)	-20..+90 °C	Brass	•	○	-	-	30
FW3			•		0.4..2.5	DN 8	PN 100	-20..+90 °C	Brass / stainless steel	•	○	○	-	32
FW4V			•		1	DN 15	PN 300	-20..+90 °C	Brass	-	•	-	-	34
FWJ-...GM			•		1..16	DN 8..25	PS 100	-20..+90 °C	Brass	•				35
RVM			•		0.04..3	DN 8	PN 350	-20..+100 °C (160 °C)	Brass / stainless steel	•	-	○	○	37
FX			•		0.4..12	DN 15	PN 10	-20..+70 °C (80 °C)	Plastic	•	-	-	-	39

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Device		Displays	Switching	Measuring	Range l/min	Nominal widths	Pressure resistance in bar	Medium Temperature	Connection material	Medium				Page
										Water	Oils	Gases	Aggressive	
NH1		•	•		3..15	DN 15	PN 10	-20..+65 °C	Brass	•	-	-	-	41
NO		•	•		3..60	DN 8..25	PN 50	-20..+90 °C	Brass / stainless steel	•	○	○	○	42
OT		•			0,6..30	DN 8..25	PN 10	-20..+100 °C	Brass	•				44
NJ NJV		•	•		2..80	DN 8..25	PN 100	-20..+100 °C	Brass / stainless steel	•	•	-	○	45
VF		•	•		0.005..5	DN 8	PN 16	-20..+100 °C	Brass / stainless steel	•	•	-	○	49
VO		•	•		0.1..150	DN 15..25	PN 10	-20..+100 °C	Brass / stainless steel	•	•	-	○	51
MR		•	•		0.5..60	DN 8..25	PN 90..200	-20..+120 °C	Brass / stainless steel	•	•	○	○	53
MI				•	0,4..60	DN 8..25	PN 16	-20..+60 °C	Brass / stainless steel	•	•	•	○	55
MR1K		•	•		0.4..65	DN 8..25	PN 200	-20..+120 °C (-20..+150 °C)	Brass / stainless steel	•	•	○	○	57
HD1F		•	•		0.1..80	DN 8..25	PN 200	-20..+120 °C (-20..+150 °C)	Brass / stainless steel	•	•	○	○	59
HD2F		•	•		0,5..60	DN 8..25	PN 200 (PN 500)	-20..+120 °C (-20..+150 °C)	Brass / stainless steel		•			61
HM1K		•	•		0.1..74	DN 8..25	PN 200	-20..+70 °C	Brass / stainless steel	•	•	○	○	63
HM2K		•	•		0,5..55	DN 8..25	PN 200	-20..+70 °C	Brass / stainless steel		•			65

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										Water	Oils	Gases	Aggressive	
HD1K		•	•		0.1..80	DN 8..25	PN 200	-20..+120 °C (-20..+150°C)	Brass / stainless steel	•	•	○	○	67
HD2K		•	•		0.5..60	DN 8..25	PN 200	-20..+120 °C (-20..+150°C)	Brass / stainless steel		•			69
A-H1.1		ATEX switching head I M1 Ex ia I II 1G Ex ia IIC T4 II 1D Ex iaD 20 T135						-20..+120 °C						71
A-H2.1		ATEX switching head I M1 Ex ia I II 1G Ex ia IIC T4 II 1D Ex iaD 20 T135						-20..+120 °C						72
HR2K1		•	•		10..150	DN 32..50	PS 200	-20..+120 °C	Brass / stainless steel	•				73
HR2Z1		•	•		10..300	DN 32..50	PS 200	-20..+120 °C	Brass / stainless steel	•				77
HR2O1		•	•		10..300	DN 32..50	PS 200	-20..+120 °C	Brass / stainless steel	•				79
HR2K2		•	•		15..80	DN 32..50	PS 200	-20..+120 °C	Brass / stainless steel	•				75
HR2VK1		•	•		10..150	DN 32 / 40 / 50	PS 200	-20..+120 °C	Brass / stainless steel		•			81
HR2VK2		•	•		10..150	DN 32 / 40 / 50	PS 200	-20..+120 °C	Brass / stainless steel		•			83
HR2VZ1		•	•		10..150	DN 32 / 40 / 50	PS 200	-20..+120 °C	Brass / stainless steel		•			85
HR2VO1		•	•		10..150	DN 32 / 40 / 50	PS 200	-20..+120 °C	Brass / stainless steel		•			87

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Device		Displays	Switching	Measuring	Range l/min	Nominal widths	Pressure resistance in bar	Medium Temperature	Connection material	Medium				Page
										Water	Oils	Gases	Aggressive	
LABO-HD1K-S			●		0.1..80	DN 8..25	PN 200 (PN 500)	-20..+85 °C (-20..+150 °C)	Brass / stainless steel	●	●	○	○	89
LABO-HD1K-IUFC				●	0.1..80	DN 8..25	PN 200 (PN 500)	-20..+85 °C (-20..+150 °C)	Brass / stainless steel	●	●	○	○	93
LABO-HD2K-S			●		0.5..60	DN 8..25	PN 200 (PN 500)	-20..+85 °C (-20..+150 °C)	Brass / stainless steel		●			97
LABO-HD2K-IUFC				●	0.5..60	DN 8..25	PN 200 (PN 500)	-20..+85 °C (-20..+150 °C)	Brass / stainless steel		●			101
LABO-HR2E-S			●		5..300	DN 32..50	PS 200	-20..+85 °C (-20..+120 °C)	Brass / stainless steel	●				105
LABO-HR2E-IUFC				●	5..300	DN 32..50	PS 200	-20..+85 °C (-20..+120 °C)	Brass / stainless steel	●				109
LABO-HR2VE-S			●		10..160	DN 32..50	PS 200	-20..+85 °C (-20..+150 °C)	Brass / stainless steel		●			112
LABO-HR2VE-IUFC				●	10..160	DN 32..50	PS 200	-20..+85 °C (-20..+150 °C)	Brass / stainless steel		●			116
FLEX-HD1K		●	●	●	0.1..85	DN 8..25	PN 200	-20..+85 °C (-20..+150 °C)	Brass / stainless steel	●	●	○	○	119
FLEX-HD2K		●	●	●	0,5..60	DN 8..25	PN 200 (PN 500)	-20..+85 °C (-20..+150 °C)	Brass / stainless steel		●			123
FLEX-HR2E		●	●	●	5..300	DN 32..50	PS 200	-20..+85 °C (-20..+120 °C)	Brass / stainless steel	●				128
FLEX-HR2VE		●	●	●	10..160	DN 32 / 40 / 50	PS 200	-20..+85 °C (-20..+120 °C)	Brass / stainless steel		●			132

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Device		Displays	Switching	Measuring	Range l/min	Nominal widths	Pressure resistance in bar	Medium Temperature	Connection material	Medium				Page
										Water	Oils	Gases	Aggressive	
FLEX-HR1MV		●	●	●	2..200	DN 32 - 50	PN 200	-20..+85 °C (-20..+150 °C)	Brass / stainless steel	●	●	○	○	137
OMNI-HD1K		●	●	●	0.1..80	DN 8..25	PN 200	-20..+85 °C (-20..+150 °C)	Brass / stainless steel	●	●	○	○	141
OMNI-HD2K		●	●	●	0.5..60	DN 8..25	PN 200	-20..+85 °C (-20..+150 °C)	Brass / stainless steel		●			145
OMNI-HR2E		●	●	●	5..300	DN 32..50	PS 200	-20..+85 °C (-20..+100 °C)	Brass / stainless steel	●				149
OMNI-HR2VE		●	●	●	5..300	DN 32..50	PS 200	-20..+85 °C (-20..+100 °C)	Messing / Edelstahl		●			153
OMNI-HR1MV		●	●	●	2..200	DN 32 - 50	PN 200	-20..+85 °C (-20..+150 °C)	Brass / stainless steel	●	●	○	○	157
Counter- OPTION-C		Preset Counter with external reset facility, anti-complementary switching outputs and actual value display.												165
Counter- OPTION-C1		Instantaneous value display with analog output, pulse output and volume totalizer.												162

ECI-1	All LABO, FLEX, and OMNI parameters can be set or modified using the ECI-1 configurator.	168
Options	● Special connections ● Higher pressure stages ● Reinforced piston ● Temperature up to 150 °	169
Mechanical accessories	● ZV / ZE (Filter) ● VB (Manifold block) ● Metal cover for display	172
Electrical accessories	● KB (Round plug connector 4/5-pin) ● OMNI-TA (Panel Meter)	173

Errors and technical modifications reserved.