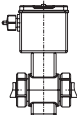
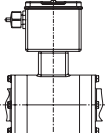
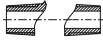
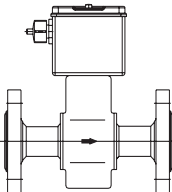
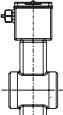
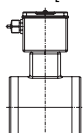
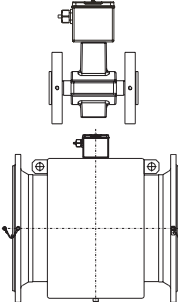
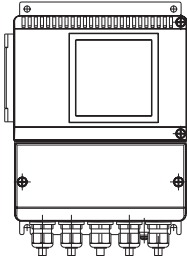


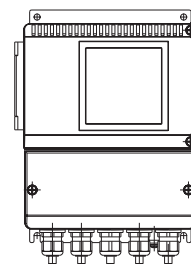
Overview, Flowmeter and Converter Designs MAG-XM

Variable Connections		Connection Types		Fixed Flanges	Wafer Design	Fixed Flanges		
 DN 3 - DN 40 [1/10\"-1½\"]  DN 50 - DN 100 [2\"-4\"]	 Weld stubs  Tri-Clamp  Food Ind. fittings  External threads Add'l types see Dimensions, others upon request		 DN 3-DN 40 [1/10\"-1½\"]  DN 50 - DN 100 [2\"-4\"]					
Accuracy		0.4% of rate, option 0.2% of rate						
Flowmeter primary materials		Stainless steel housing Series 2000			Alum Series 4000			
Flowmeter Primary								
Model number		DM21*		DM21F	DM21W	DM41F		
Process Connections		DN	Inch	*	DN	PN	DN	PN
Wafer design		3-100	1/10-4	W	—	3- 50 1/10-210-40 65-100 2½-4 10-16	—	
Flanged DIN 2501/EN 1092-1		3-100	1/10-4	F	3-100 10-40	—	3-2000 10-40	—
Flanged ASME B16.5/ JIS B2210-10K		3-100	1/10-4	F	1/10\"-4\" CL150-300/JIS	—	1/10\"-40\" CL150/JIS 1/10\"-12\" CL300	—
Food ind. fitting DIN 11851		3-25	1/10-1	S	—	—	—	
Weld stubs ISO 1127		3-100	1/10-4	J	—	—	—	
DIN 11850		3-100	1/10-4	R	—	—	—	
DIN 2463		3-100	1/10-4	Q	—	—	—	
ISO 2037		3-100	1/10-4	P	—	—	—	
SMS		25-100	1-4	X	—	—	—	
Tri-Clamp DIN 32676		3-100	1/10-4	T	—	—	—	
ASME BPE		3-100	1/10-4	K	—	—	—	
External threads ISO 228		3-25	1/10-1	E	—	—	—	
1/8\" Sanitary connector		1-2	1/25-1/12	B	—	—	—	
Liner		PFA (vacuum-proof) (> DN 2) PEEK, Torlon (< DN 3)		PFA (vacuum-proof)	PFA (vacuum-proof)	Hard/soft rubber, PTFE, PFA, others		
Conductivity		≥ 5 µS/cm (20 µS/cm for demineralized water)						
Electrodes		SST No. 1.4571 [316Ti], 1.4539 [904L], Hastelloy B-3/C-4, Platinum-Iridium, Tantalum, Titanium						
Process connection material		SST No. 1.4404 [316L]		SST No. 1.4571 [316Ti]	—	Steel, SST No.1.4571 [316Ti]		
Protection Class		IP 67 / IP 68		IP 67 / IP 68	IP 67 / IP 68	IP 67 / IP 68		
Fluid temperature		-25 to 130 °C		-40 to 130 °C	-25 to 130 °C	-25 to 130 °C / 180 °C		
Approvals								
Official calibration		Cold water and waste water, fluids other than water						
Press. equip. directive 97/23/EC		Conformity assessment in accordance with category III, fluid group 1						
CRN (Canadian Regist. Number)		on request						
Approvals								
Hygienic & sterile requirements		CIP/SIP-capable, EHEDG (Cleanability), 3A ²⁾		CIP/SIP-capable		CIP-capable		
Converter								
Model number		50XM2000						
Supply power		24 V, 115 V, 230 V AC, 24 V DC						
Current output standard		0/2-10 mA, 0-5 mA, 0/4-20 mA, 0/4-10/12-20 mA						
Pulse output, 1-channel std.		active, 24 V, optocoupler						
Ext. zero return		yes						
Ext. totalizer reset		yes						
Forward/reverse metering		yes						
Data link		RS485, PROFIBUS DP						
Communication		ASCII-Protocol, PROFIBUS DP, HART-Protocol®						
Fluid monitoring std.		yes, from DN 10 [3/8\"]						
Self monitoring/Diagnostic		yes						
Local display/totalization		yes						
2 Flow ranges		yes, automatic or external switching						
Preset counter		yes, START/STOP using contact input, stop using contact output						
Density correction		yes, manual entry (totalizer and display in weight units)						
Housing		Field mount housing						



¹⁾ 25 °C if the process connection is made of stainless steel -10 °C if the process connection is made of steel

²⁾ The approvals apply to DN3...DN100. Please observe the special installation conditions. See the operating instructions.



Accuracy, Reference Conditions and Principle of Operation

Reference Conditions per EN 29104

Fluid Temperature

20 °C ± 2 K

Ambient Temperature

20 °C ± 2 K

Supply Power

Nominal voltage per name plate $U_N \pm 1\%$

Test Reference Installation Conditions, Straight Pipe Sections

Upstream > 10 x D,

Downstream > 5 x D,

D = Flowmeter primary size

Please note the COPA-XM/MAG-XM Operating Instruction.

Warm Up Phase

30 min

Effect on Analog Output

Same as pulse output plus ± 0.1% of rate

Temperature Effects

0.1% of rate / 10 °C

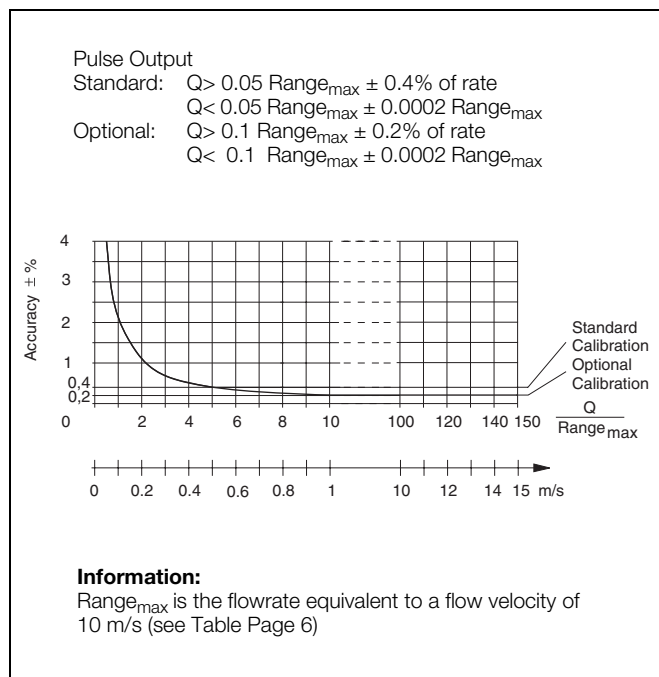


Fig. 1: Accuracy

Principle of Operation

Faraday's Laws of Induction form the basis for the electromagnetic flowmeters. It states that a voltage is induced in a conductor as it moves through a magnetic field.

This principle is applied to a conductive fluid which flows through a magnetic field generated perpendicular to the flow direction (see Schematic).

The voltage induced in the fluid is measured at two electrodes, installed diametrically opposite to each other. This signal voltage U_E is proportional to the magnetic induction B , the electrode spacing D and the average flow velocity v .

Noting that the magnetic induction B and the electrode spacing D are constants, indicates that a proportionality exists between the signal voltage U_E and the average flow velocity v . The equation for the volume flow shows that the signal voltage U_E is linear and proportional to the volume flowrate.

The induced signal voltage is processed in the converter into scaled, analog and digital signals.

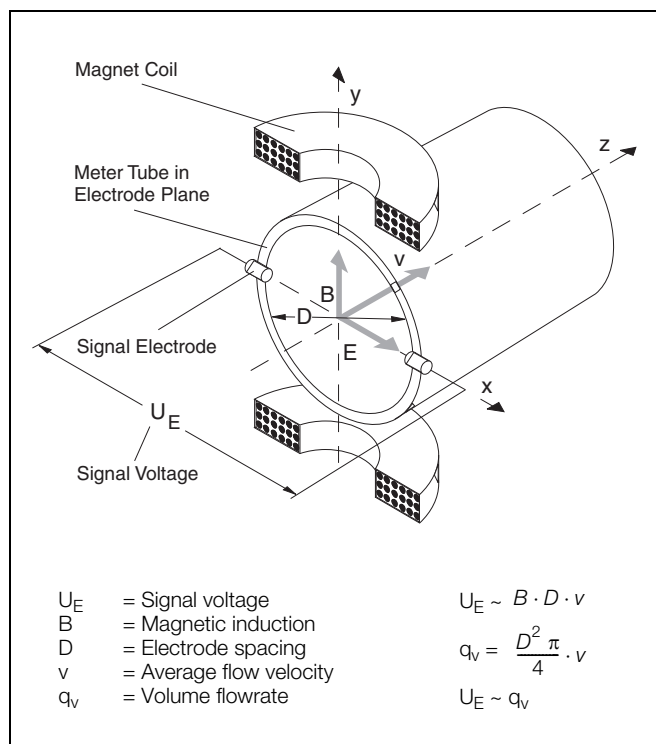


Fig. 2: Electromagnetic Flowmeter Schematic

Protection Class per EN 60529

IP 67 Standard
IP 68 (only for MAG-XM DM41F/DM21 possible)

Pipeline vibration following EN 60068-2-6**The following applies to compact devices (COPA):**

In the range of 10...55 Hz, max. deflection 0.15 mm
In the range of 55...150 Hz, max. acceleration 2 g

The following applies to devices with a separate measurement converter:

In the range of 10...55 Hz, max. deflection 0.15 mm

Design**Meter Tube**

Stainless steel No. 1.4301 [304]

DN 3 to DN 400

DM41/43F: dual-shell casing: cast aluminum, coated¹⁾
DM21/23F: deep-drawn casing, stainless steel no. 1.4301

Flanges

Steel galvanized standard
Stainless steel 1.4571 [316Ti] ($\leq$ DN15 [1/2"] and DM21/23F standard)

DN 500 to DN 2000

Welded steel construction, painted¹⁾

Flanges

Steel, painted standard
Stainless steel 1.4571 [316Ti]

Connection Box**DM41F/DM43F/DM23F**

Cast aluminum, coated
Paint coat thickness 60 μ m
Frame: RAL 7012
Cover: RAL 9002

DM21F

Stainless steel no. 1.4301

Weight

See Dimensions Drawings

Laid Length Flanged (Short Design)

Meter sizes DN 3 – DN 400 [1/10" – 16"] correspond to the lengths defined in DIN Flange Design VDE/VDI 2641 and DVGW Working Paper W420 (Water Totalizer, Design WP ISO 4064 Short as well as ISO 13359).

ASME B16.5 CL 150/CL 300 (other upon request)

With PFA, flanged (ISO laid length)

ASME B16.5 CL 150/CL 300 (other upon request)

With PTFE, hard/soft rubber
Laid length Series 1000 or ISO laid length
Protection flanges for laid length Series 1000 L+20 mm $\leq$ DN 80 [3"]
L+25 mm from DN 100 [4"] can be specified.

¹⁾ Paint coat 60 μ m thick, RAL 9002

Dimension Drawings Flowmeter Primaries DN 3 to DN 400 [1/10" to 12"], DIN/EN1092-1⁵⁾ Flanges Models DM43F and DM41F

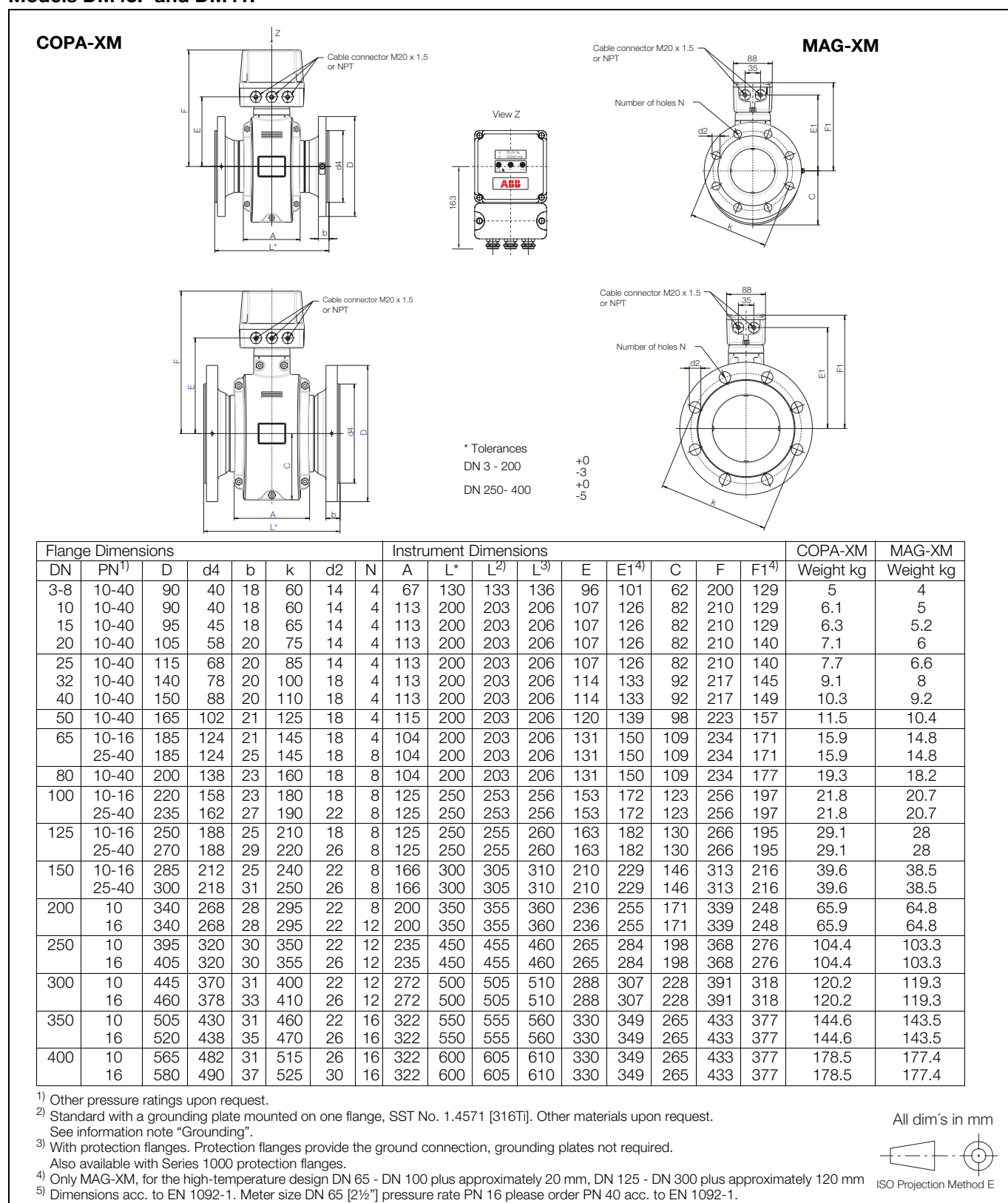
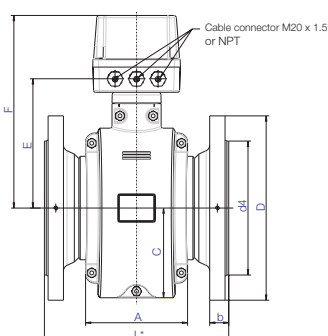
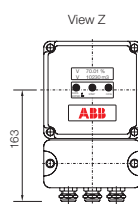
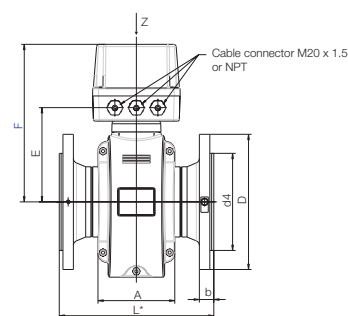


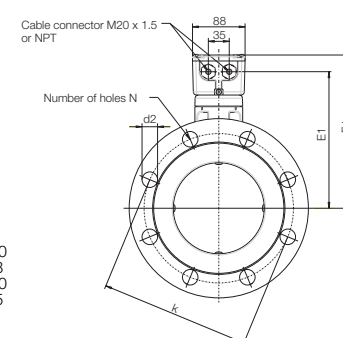
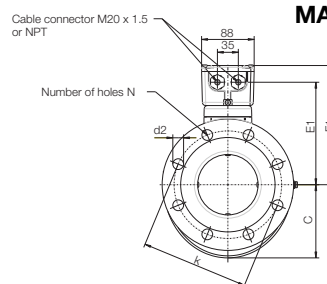
Fig. 17: Flowmeter Primaries DN 3 to DN 400, DIN/EN 1092-1 Flanges

Dimension Drawings Flowmeter Primaries 1/10" to 16" [DN 3 to DN 400], ASME B16.5 Flanges Models DM43F and DM41F

COPA-XM



MAG-XM



* Tolerances
DN 3 - 200
DN 250- 400

+0
-3
+0
-5

Meter Size	Instrument Dimensions ASME CL150/CL300									Flange Dimensions ASME CL150						Flange Dimensions ASME CL300						COPA-XM	MAG-XM
DN	Inch	A	ISO 13359	ABB Ser. 1000	E	E1 ³⁾	C	F	F1	D	d4	b	k	d2	N	D	d4	b	k	d2	N	Weight kg	Weight kg
3-8 ⁴⁾	1/10-5/16	67	130	130	96	101	62	200	129	89	35	13	60	16	4	95	35	16	67	16	4	5	4
10/15	3/8, 1/2	113	200	270	107	126	82	210	154	89	35	13	60	16	4	95	35	16	67	16	4	6.3	5.2
20	3/4	113	200	270	107	126	82	210	154	89	43	14	70	16	4	117	43	18	83	16	4	7.1	6
25	1	113	200	270	107	126	82	210	154	108	51	16	80	16	4	124	51	20	89	16	4	7.7	6.6
32	1 1/4	113	200	280	107	126	82	210	154	117	64	18	89	16	4	134	64	21	99	19	4	9.1	8
40	1 1/2	113	200	280	114	133	92	217	161	127	73	20	99	16	4	156	73	23	115	23	4	10.3	9.2
50	2	115	200	280	120	139	98	223	167	152	92	21	121	19	4	165	92	24	127	19	8	11.5	10.4
65	2 1/2	104	200	330	131	150	109	234	178	178	105	25	140	19	4	191	105	27	150	23	8	15.9	14.8
80	3	104	200	340	131	150	09	234	178	191	127	26	153	19	4	210	127	30	168	23	8	19.3	18.2
100	4	125	250	400	153	172	123	256	200	229	157	26	191	19	8	254	157	34	200	22	8	28	26.9
125	5	125	250	450	163	182	130	266	210	254	186	28	216	22	8	280	186	39	235	22	8	35.6	34.5
150	6	166	300	450	210	229	146	313	257	279	216	30	241	22	8	318	216	41	270	22	12	47.2	46.1
200	8	200	350	500	236	255	171	339	283	343	270	34	298	22	8	381	270	47	330	25	12	71.3	70.2
250	10	235	450	550	265	284	98	368	312	406	324	35	362	25	12	445	324	53	387	28	16	102.8	101.7
300	12	272	500	620	288	307	228	391	335	483	381	37	432	26	12	521	381	56	451	32	16	140.4	139.3
350	14	322	550	650	330	349	265	433	377	534	413	40	476	28	12	-	-	-	-	-	-	190	188.9
400	16	322	600	700	330	349	265	433	377	597	470	42	540	29	16	-	-	-	-	-	-	231.3	230.2

1) Standard with a grounding plate mounted on one flange, SST No. 1.4571 [316Ti]. Other materials upon request.
See also information note "Grounding".

2) With 2 Grounding plates (protection flanges) sizes DN 3-100 [1/10"-4"] L +6 mm, DN 125-300 [5"-12"] L + 10 mm.
Also available with Series 1000 protection flanges.

3) Only MAG-XM, for the high-temperature design DN 65 - DN 100 plus approximately 20 mm,
DN 125 - DN 300 plus approximately 120 mm

4) Process connection flange 1/2"

All dim's in mm



ISO Projection Method E

Fig. 18: Flowmeter Primaries 1/10" to 16" [DN 3 to DN 400], ASME B16.5 Flanges

Dimension Drawings Flowmeter Primaries DN 500 - DN 1000 [20" - 40"], DIN/EN1092-1⁵⁾ Flanges Models DM43F and DM41F

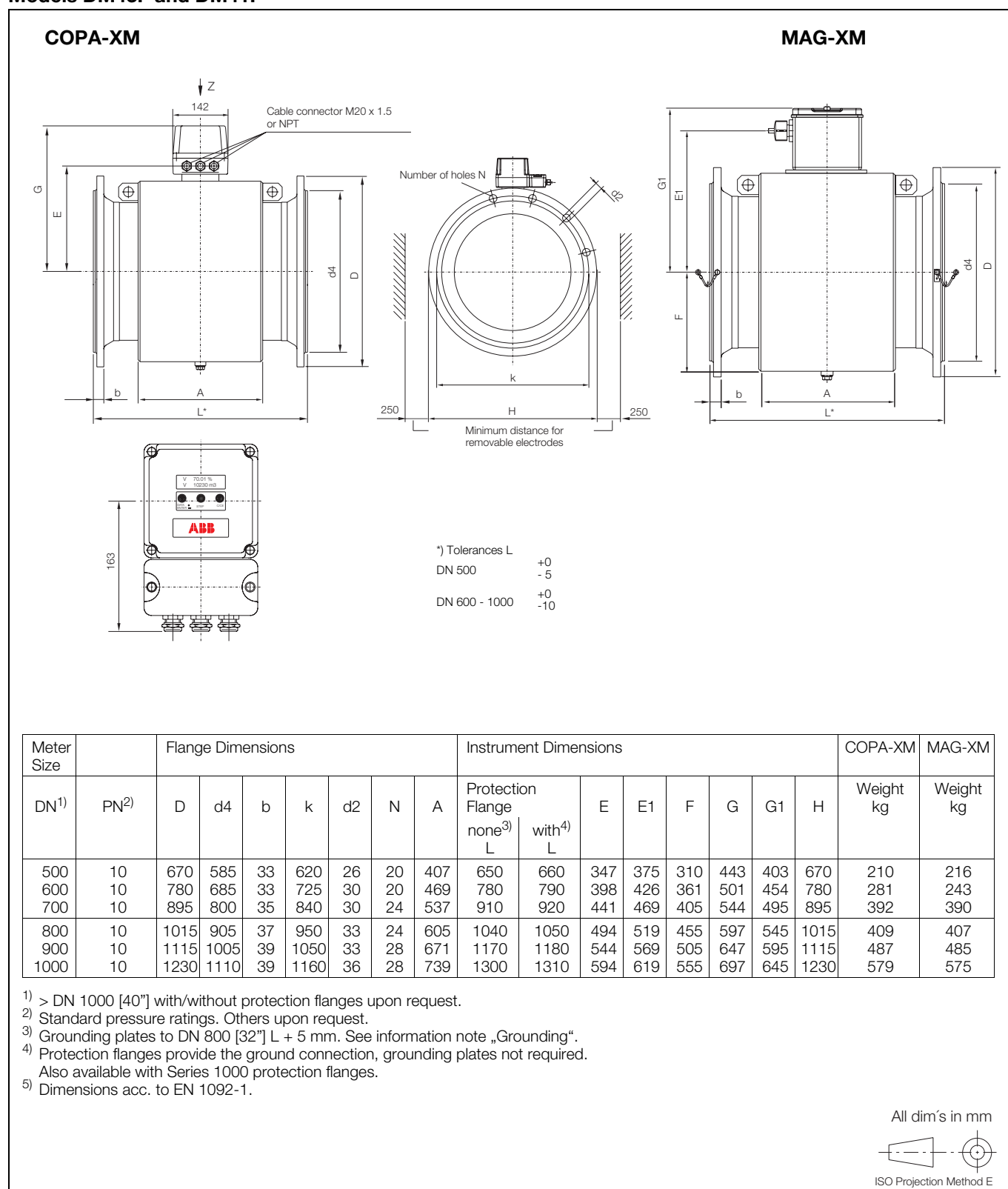


Fig. 19: Flowmeter Primaries DN 500 to DN 1000 [20" to 40"], DIN/EN1092-1 Flanges

Dimension Drawings Flowmeter Primaries 20" - 40" [DN 500 - DN 1000], ASME B16.5/B16.47 Flanges Models DM43F and DM41F

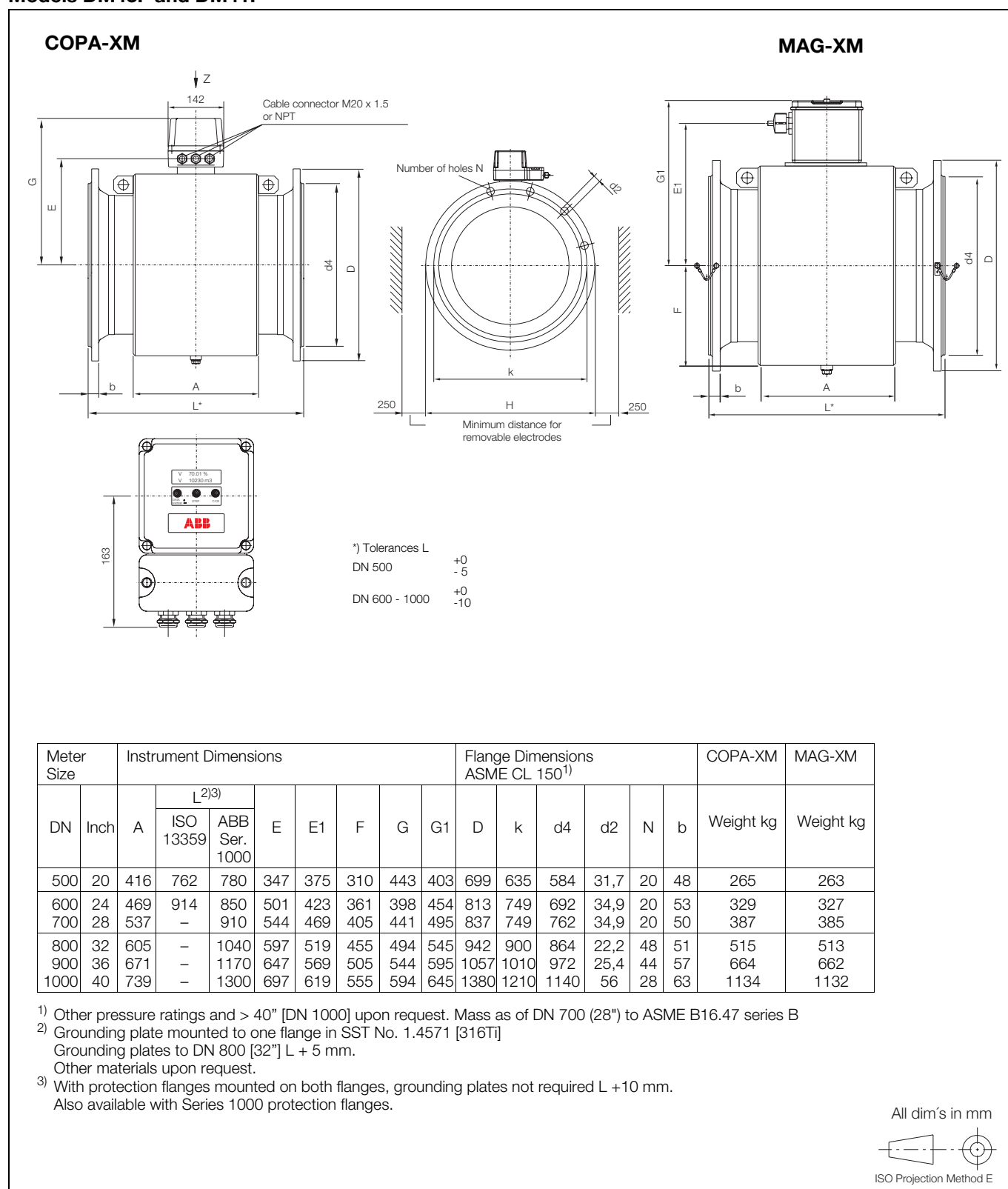


Fig. 20: Flowmeter Primaries 20" to 40" [DN 500 to DN 1000], ASME B16.5/B16.47 Flanges

Ordering Information Flanged Meters, Models DM43F and DM41F

In addition to the Ordering Number please include the following information: fluid, fluid temperature, operating pressure, flow range, pipeline type (grounding plate, grounding electrode)¹⁾

COPA-XM													MAG-XM												
Ordering Number																									
Conductivity ≥ 5 μS/cm																									
DM43F													DM41F												
Liner Material																									
Hard rubber (DN 15 to DN 2000) [½" to 80"]KTW approval												H													
Soft rubber (DN 50 to DN 2000) [2" to 80"]												S													
PTFE (DN 10 to DN 600) [3/8" to 24"]												T													
PFA (DN 3 to DN 8) [1/10" to 5/16"]												P													
Others												Z													
Meter Size																									
DN 3 1/10"												03													
DN 4 5/32"												04													
DN 6 1/4"												06													
DN 8 5/16"												08													
DN 10 3/8"												10													
DN 15 1/2"												15													
DN 20 3/4"												20													
DN 25 1"												25													
DN 32 1¼"												32													
DN 40 1½"												40													
DN 50 2"												50													
DN 65 2½" ³⁾												65													
DN 80 3"												80													
DN 100 4"												1H													
DN 125 5"												1Q													
DN 150 6"												1F													
DN 200 8"												2H													
DN 250 10"												2F													
DN 300 12"												3H													
DN 350 14"												3F													
DN 400 16"												4H													
DN 500 20"												5H													
DN 600 24"												6H													
DN 700 28"												7H													
DN 800 32"												8H													
DN 900 36"												9H													
DN 1000 40"												1T													
DN 1200 48"												12													
DN 1400 54"												14													
DN 1600 64"												16													
DN 1800 72"												18													
DN 2000 80"												2T													
Others												99													
Measuring electrode material ²⁾ / Grounding electrode material																									
SST No. 1.4571 (316 Ti) / none												S													
Hastelloy C-4 (2.4610) / none												H													
Hastelloy B-3 (2.4600) / none												B													
Titanium / none												M													
Tantalum / none												T													
SST No. 1.4539 (904L) / none (Food Ind. Application)												F													
Platinum-Iridium / none												P													
SST No. 1.4571 (316 Ti) / with												E													
Hastelloy C-4 (2.4610) / with												O													
Hastelloy B-3 (2.4600) / with												N													
Titanium / with												I													
Tantalum / with												Q													
SST No. 1.4539 904L) / with (Food Ind. Application)												R													
Platinum-Iridium / with												G													
Pressure Rating ³⁾																									
DIN PN 10 ISO laid length												C													
DIN PN 16 ISO laid length												D													
DIN PN 25 ISO laid length												E													
DIN PN 40 ISO laid length												F													
Others												Z													
JIS K10 ≤ DN 100												K													
ASME CL150 (laid length Serie 1000, except PFA)												P													
ASME CL300 (laid length Serie 1000, except PFA)												Q													
ASME CL150 ISO laid length												R													
ASME CL300 ISO laid length												S													
Others												Z													

Continuation Ordering Information

COPA-XM										MAG-XM									
Ordering Number										Ordering Number									
DM43F										DM41F									
Material of process connection																			
Steel (standard from DN 20 [¾"])																			
SST No. 1.4571 (std. for DN 3-15 [1/10"-1/2"], Option from DN 20 [¾"])																			
Others upon request																			
Accessories																			
None																			
Protection plates SST No. 1.4571 (mounted on both flanges)																			
Grounding plate SST No. 1.4571 (mounted on both flanges)																			
Protection plates SST No. 1.4571 (mounted on both flanges) ¹⁾																			
Temperature Range																			
Standard (see Specifications Liner Materials) ≤ 130 °C																			
High Temperature Design ≤ 180 °C (only MAG-XM)																			
Certificates																			
Standard, none																			
Material Certificate per EN 10204 3.1 and Pressure Test per AD-2000																			
Inspection Certificate per EN 10204 3.1																			
Pressure Test per AD-2000																			
Calibration Certificates																			
None																			
Certified, Cold Water/Waste Water																			
Certified, Liquids other than Water																			
Type of Protection																			
IP 67																			
IP 67 with NPT threads (only MAG-XM)																			
IP 67 with PF threads (only MAG-XM)																			
IP 68 (only MAG-XM)																			
IP 68 (cables fitted and potted) (only MAG-XM)																			
Supply Power																			
230 V 50/60 Hz																			
115 V/ 120 V 50/60 Hz																			
24 V 50/60 Hz																			
24 V DC																			
Display																			
With lighted display standard																			
Contact In-/Output																			
Opto coupler																			
Relay																			
In-/Output Options none/with communication																			
Current output, pulse output active																			
Current output, pulse output passive																			
Current output, pulse output passive, HART-Protocol																			
Current output, pulse output active, HART-Protocol																			
Current output, RS485 (ASCII-Protocol)																			
Current output, PROFIBUS DP																			
Current output, PROFIBUS DP (with M12 plug)																			
Operation of data entry																			
Standard with 3 Keys and Magnet Stick																			
(Enter data without removing the housing cover)																			

¹⁾ Only for installation length series 1000 and ASME or DIN flanges
Installation length ≤ DN 80 = L + 20 mm; as of DN 100 = L + 25 mm

Additional ordering information can be provided in writing.

Name Plate

German
English
French

Electrode Design

Standard
Conical head (from DN 10 [3/8"] material SST No. 1.4539 [904L]
e.g. for high grease content fluids)

**Information:**

Please indicate in writing if a ± 0.2 % of rate calibration is required.

Dimension Drawings Stn. Stl. Flowmeter Primaries Models DM23F and DM21F, DN 3-40 [1/10"-1½"] Flanged

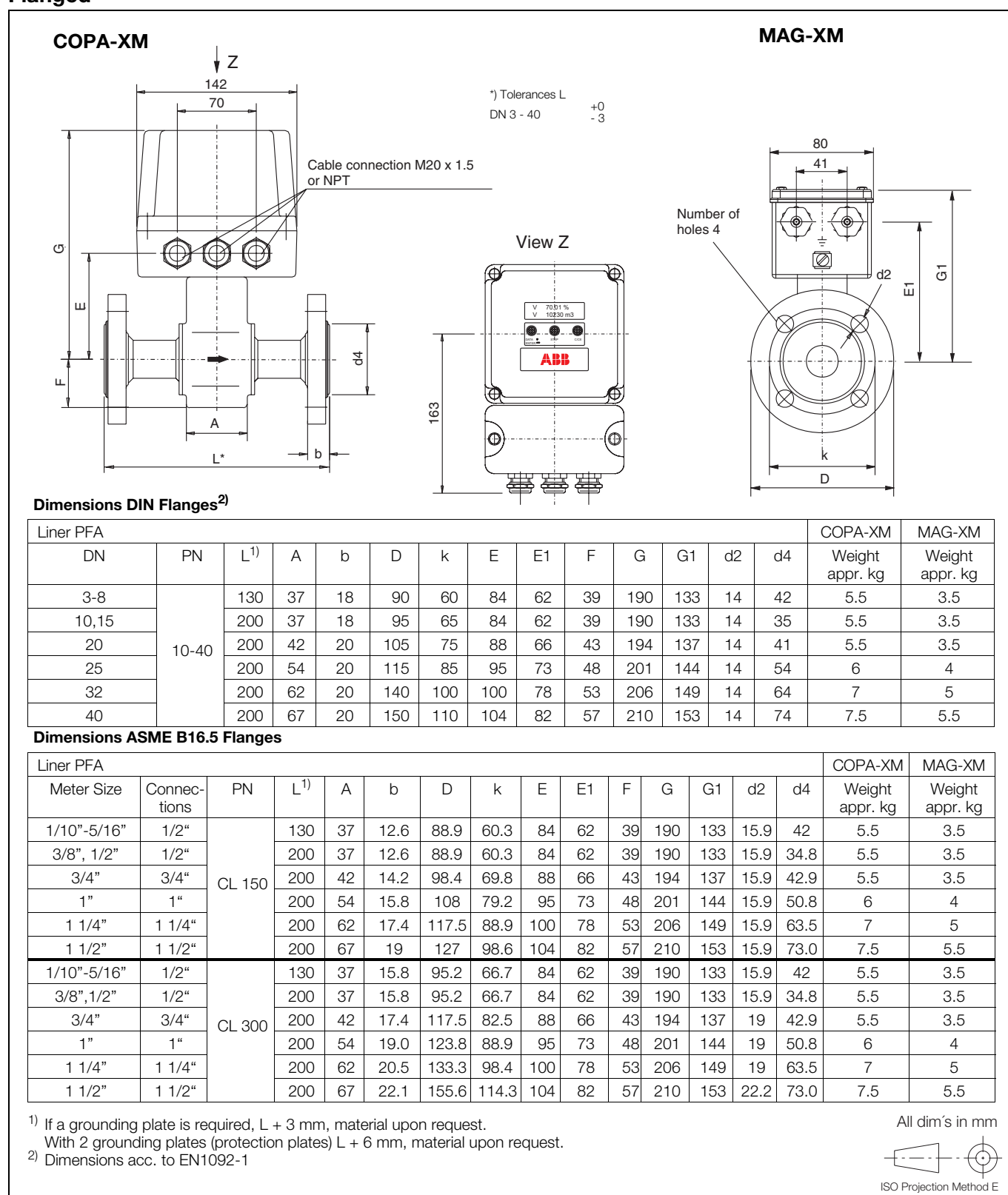


Fig. 21: Flowmeter Primaries DN 3 to DN 40 [1/10" to 1-1/2"]

Dimension Drawings Stn. Stl. Flowmeter Primaries Models DM23F and DM21F, DN 50-100 [2"-4"] Flanged

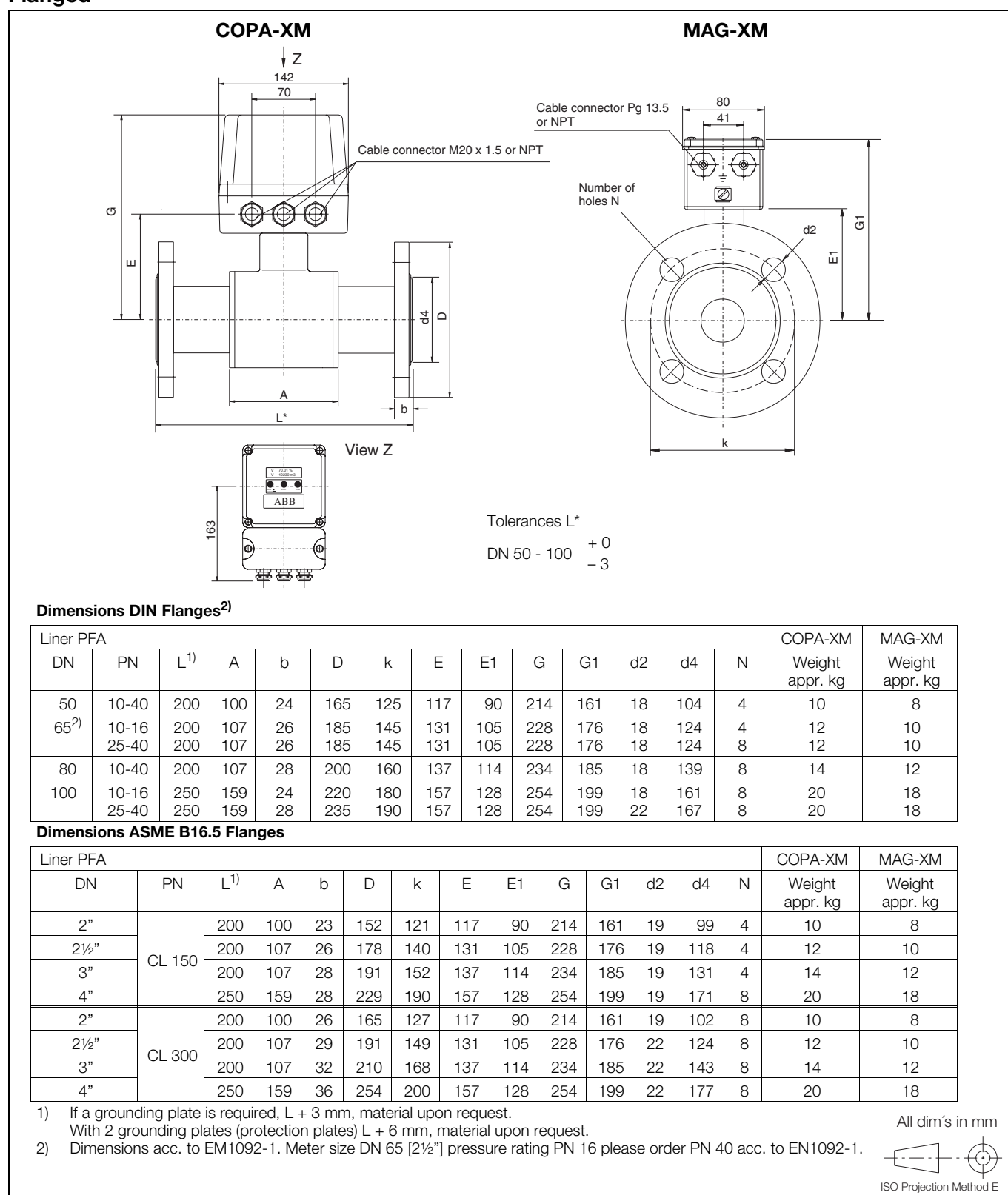


Fig. 22: Flowmeter Primaries DN 50 to DN 100 [2" to 4"]

In addition to the Ordering Number please include the following information: fluid, fluid temperature, operating pressure, flow range, pipeline type (grounding plate)¹⁾

Continued on next page

¹⁾ Protection plates (2 grounding plates) mounted on both flanges and grounding plate mounted on one flange, material SS No. 1.4571[316Ti].
Others upon request.

2) Dimensions acc. to DIN 2501/EN1092-1 or ASME B16.5 or JIS B2210-10K.
Meter size DN 65 [2½"] pressure rate PN 16 please order
PN 40 acc. to EN1092-1.

Note regarding 3A conformity:

Note regarding 3A conformity:
If this option is required model DM21 must be ordered.

Continuation Ordering Information

COPA-XM													MAG-XM												
Ordering Number													Ordering Number												
DM23F													DM21F												
Certificates																									
Standard, none																									
Material Certificate per EN 10204 3.1 and Pressure Test per AD-2000																									
Inspection Certificate per EN 10204 3.1																									
Pressure Test per AD-2000																									
Calibration Certificates																									
None																									
Certified, Cold Water/Waste Water																									
Certified, Liquids other than Water																									
Type of Protection																									
IP 67													IP 67												
IP 67 with NPT-threads (only MAG-XM)													IP 67 with NPT-threads												
IP 67 with PF-threads (only MAG-XM)													IP 67 with PF-threads												
IP 68 (only MAG-XM)													IP 68												
IP 68 (cables fitted and potted) (only MAG-XM)													IP 68 (cables fitted and potted)												
Supply Power																									
230 V, 50/60 Hz																									
115 V/120 V, 50/60 Hz																									
24 V, 50/60 Hz																									
24 V DC																									
Display																									
With lighted display standard																									
Contact In-/Output																									
Optocoupler																									
Relay																									
In-/Output Options																									
Current output, pulse output active																									
Current output, pulse output passive																									
Current output, pulse output passive, HART-Protocol																									
Current output, pulse output active, HART-Protocol																									
Current output, RS485 (ASCII-Protocol)																									
Current output, PROFIBUS DP																									
Current output, PROFIBUS DP (with M12 plug)																									
Operation of data entry																									
Standard with 3 keys and Magnetic Stick																									
(Enter data without removing the housing cover)																									

Ordering Information for converter
see Page 38

Additional ordering information can be provided in writing:

Name Plate

German
English
French

Electrode Design

Standard
Conical head (from DN 10 [3/8"] material SST No. 1.4539
e.g. for high grease content fluids).

Information:

Please indicate in writing if a ± 0.2 % of rate calibration is required.

Specifications Stn. Stl. Flowmeter Primaries, Mod. DM21_ or DM23_, DN 1 to DN 100 [1/25" to 4"]**Overview, Series 2000 Versions**

Model		DM21_/DM23_										DM21/23W	PED
Meter Size	Process Conn's	1/8" - Sanitary	External Threads	Tri-Clamp DIN 32676	Tri-Clamp ASME BPE	Weld Stubs DIN 11850	Weld Stubs DIN 2463	Weld Stubs ISO 1127	Weld Stubs ISO 2037	Weld Stubs SMS	Food Ind. Fittings DIN 11851	Wafer Design	
DN 1	1/25"	X											SEP Art. 3, Par. 3
DN 1.5	1/16"	X											
DN 2	3/32"	X											
DN 3	1/10"		X	X	X	X	X	X	X		X	X	
DN 4	4/32"		X	X	X	X	X	X	X		X	X	
DN 6	1/4"		X	X	X	X	X	X	X		X	X	
DN 8	5/16"		X	X	X	X	X	X	X		X	X	
DN 10	3/8"		X	X	X	X	X	X	X		X	X	
DN 15	1/2"		X	X	X	X	X	X	X		X	X	
DN 20	3/4"		X	X	X	X	X	X	X		X	X	
DN 25	1"		X	X	X	X	X	X	X	X	X	X	Compliance Evaluation per Category III Module B1 + D, Fluid Group 1
DN 32	1-1/4"			X		X	X	X	X		X	X	
DN 40	1-11/2"			X	X	X	X	X	X	X	X	X	
DN 50	2"			X	X	X	X	X	X	X	X	X	
DN 65	2-1/2"			X	X	X	X	X	X	X	X	X	
DN 80	3"			X	X	X	X	X	X	X	X	X	
DN 100	4"			X	X	X	X	X	X	X	X	X	

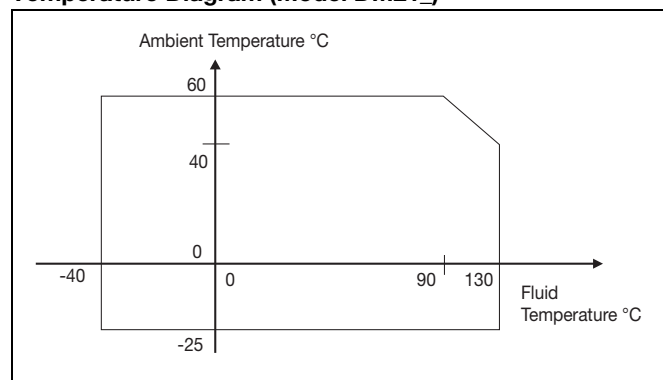
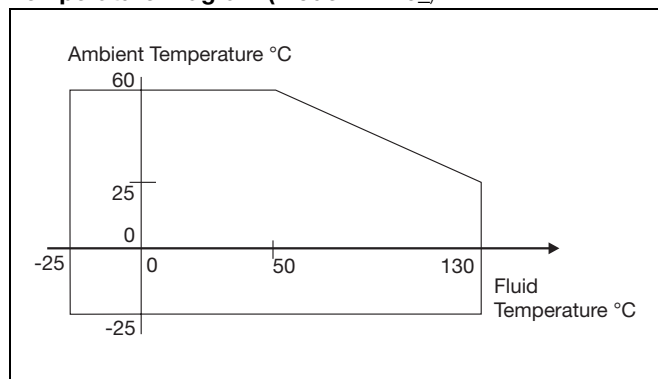
X = Available

Ambient Conditions**Ambient Temperature**

-25 °C to +60 °C

Fluid Temperature

-40 °C to +130 °C, CIP-capable, see Temperature Diagram and max. allowable cleaning temperatures.
Maximum Allowable Ambient Temperature as a Function of the Fluid Temperature for SST Process Connections and Wafer Designs.

Temperature Diagram (Model DM21_)**Fig. 23:** Temperature Diagram (Model DM21_)**Temperature Diagram (Model DM23_)****Fig. 24:** Temperature Diagram (Model DM23_)**Fluid Temperature DN 1-2**

-10 °C to +120 °C, CIP-capable to max. 120 °C

Storage Temperature

-25 °C to +70 °C

Minimum Allowable Absolute Pressure

Liner	Meter Size DN	Inch	P _{Operate} mbar abs	at	T _{Operate} °C
PFA	3 - 100	1/10 - 4	0	≤	130
PEEK/Torlon	1 - 2	1/25 - 1/12	0	≤	120

Specifications Flowmeter Primary

Maximum Allowable Fluid Temperature and Pressure

Process Connections Liner PFA	Meter Size		P _{Operate} at T _{Operate}	
	DN	Inch	bar	°C
Wafer design	3 - 50	1/10 - 2	40	≤ 130
	65 - 100	2½ - 4	16	≤ 130
Weld stubs	3 - 40	1/10 - 1½	40	≤ 130
	50, 80	2, 3	16	≤ 130
	65, 100	2½, 4	10	≤ 130
Food Ind. fittings DIN 11851	3 - 40	1/10 - 1½	40	≤ 130
	50, 80	2, 3	16	≤ 130
	65, 100	2½, 4	10	≤ 130
Tri-Clamp DIN 32676	3 - 50	1/10 - 2	16	≤ 121
	65 - 100	2½ - 4	10	≤ 121
Tri-Clamp ASME BPE	3 - 100	1/10 - 4	10	≤ 130
External threads ISO 228	3 - 25	1/10 - 1	16	≤ 130
1/8"-Sanitary connectors	1 - 2	1/25 - 1/12	10	≤ 120

Protection Class

IP 67 Standard
IP 68 (only MAG-XM DM21 possible)

Pipeline vibration following EN 60068-2-6

The following applies to compact devices (COPA):

In the range of 10-55 Hz, max. deflection 0.15 mm
In the range of 55-150Hz, max. acceleration 2 g

The following applies to devices with a separate measurement transmitter:

In the range of 10-55 Hz, max. deflection 0.15 mm

Maximum Allowable Cleaning Temperatures

CIP-Cleaning	Liner	T _{max} °C	T _{max} Minutes	T _{Umg} °C
Steam cleaning	PFA/PEEK	150	60	25
Liquid cleaning	PFA/PEEK/Torlon	140	60	25

If the ambient temperature >25 °C, the difference must be subtracted from the max. cleaning temperature. $T_{\max} - \Delta \text{ } ^\circ\text{C}$, $\Delta \text{ } ^\circ\text{C} = (T_{\text{Amb.}} - 25 \text{ } ^\circ\text{C})$.

Maximum Allowable Temperature Shock

Liner	Temp.-Shock max. Temp.-Diff. °C	Temp.-Gradient °C/min
PFA, PEEK, Torlon	any	any

Materials, Flowmeter Primary

Liner Material	Electrode Material		Electrode Design	
	Standard	Others	Standard	Others
PFA, PEEK, Torlon	Hast.-C4 (2.4610) (1.4539 for Food Ind. fittings & Tri- Clamp)	Hast.-B3 (2.4600) SST1.4539[316Ti] SST 1.4571 Tantalum, Titanium, Platinum-Iridium	Nail head	Conical head (≥ DN 10 [3/8"] SST No. 1.4539)

Process Conn. Material	Standard	Option
Wafer design	none	
Weld stubs	SST No. 1.4404 [316L]	upon request
Food Ind. fitting	SST No. 1.4404 [316L]	upon request
Tri-Clamp	SST No. 1.4404 [316L]	upon request
External threads	SST No. 1.4404 [316L]	upon request
1/8"-Sanitary connector	SST No. 1.4571 [316Ti]	POM, Brass, PVC
Connection Box COPA-XM	Cast Alum., painted, paint coat Lower section: dark gray, RAL 7012 Cover: RAL 9002	
MAG-XM	SST	–
Meter tube	SST No. 1.4301 [304]	–
Cable connector	Polyamide	PVDF
Flowmeter primary housing	Deep drawn housing SST No. 1.4301[304]	

Process Conn. Design	Gasket Material
Wafer design	None
Weld stubs, flanged, Food Ind. fitting Tri-Clamp External threads	EPDM (Ethylene-Propylene) std. for FDA- Approval (CIP) capable, no oil or grease) Silicone with FDA-Approval (Option, resistant to oils and grease)
Flat housing gasket	Silicone (resistant to oils and grease)

Material load (variable process connections)

Process conn. Liner PFA	Meter Size	PS _{max} [bar]	TS _{min}	TS _{max}
Wafer design	DN3-50 (1/10...2")	40	-25 °C (-13 °F)	130 °C (266 °F)
	DN65-100 (2½...4")	16	-25 °C (-13 °F)	130 °C (266 °F)
Weld stubs	DN3-40 (1/10...1½")	40	-25 °C (-13 °F)	130 °C (266 °F)
	DN50, DN80 (2", 3")	16	-25 °C (-13 °F)	130 °C (266 °F)
	DN65, DN100 (2½", 4")	10	-25 °C (-13 °F)	130 °C (266 °F)
Food Ind. fittings DIN 11851	DN3-40 (1/10...1½")	40	-25 °C (-13 °F)	130 °C (266 °F)
	DN50, DN80 (2", 3")	16	-25 °C (-13 °F)	130 °C (266 °F)
	DN65, DN100 (2½", 4")	10	-25 °C (-13 °F)	130 °C (266 °F)
Tri-Clamp DIN 32676	DN3-50 (1/10...2")	16	-25 °C (-13 °F)	121 °C (250 °F)
	DN65-100 (2½...4")	10	-25 °C (-13 °F)	121 °C (250 °F)
Tri-Clamp ASME BPE	DN3-100 (1/10...4")	10	-25 °C (-13 °F)	130 °C (266 °F)
External threads ISO 228	DN3-25 (1/10...1")	16	-25 °C (-13 °F)	130 °C (266 °F)
1/8" Sanitary connectors	DN1-2 (1/25...1/12")	10	-25 °C (-13 °F)	120 °C (248 °F)

Liners: PFA Wafer Design

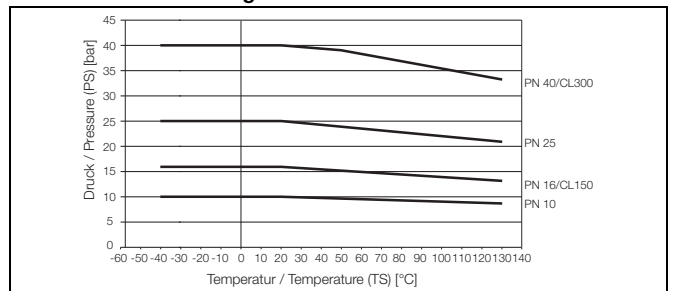


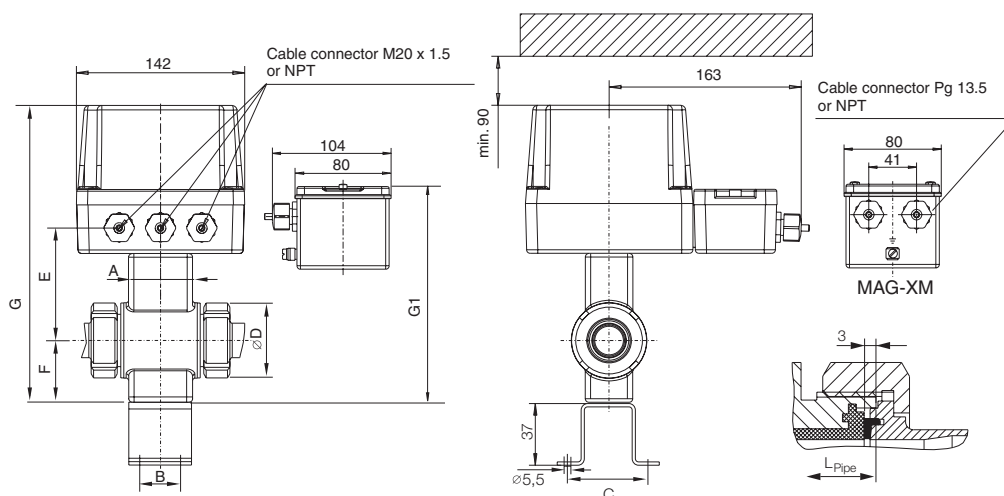
Abb. 25: PFA Zwischenflansch, Modell DM2_W

JIS B2210-10K Wafer Design

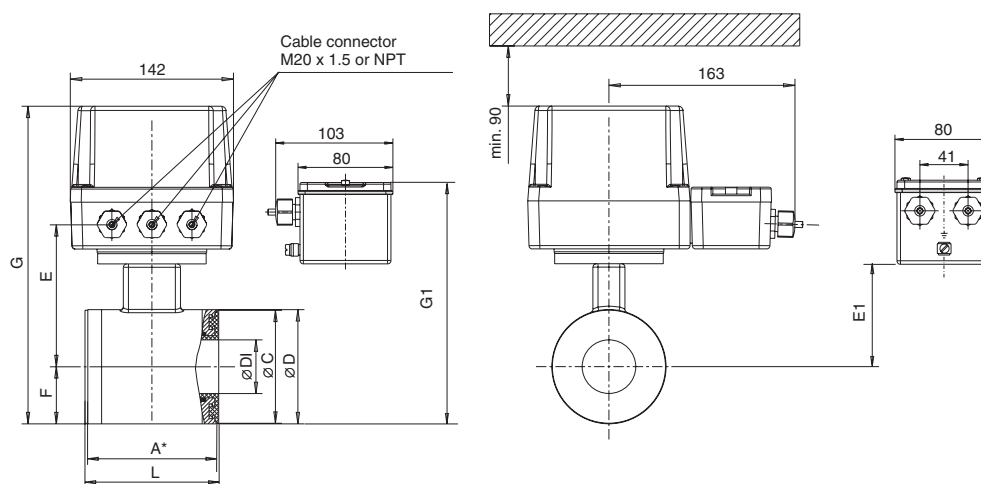
Meter Size DN	Material	PN	TS [°C]	PS [bar]
32-300	W.-Nr. 1.4404 W.-Nr. 1.4435 W.-Nr. 1.4301	10	-40 to +130	10

Dimension Drawings Stn. Stl. Flowmeter Primaries, Wafer Design, DN3–100 [1/10"–4"], Mod. DM21W and DM23W

DN 3 – DN 40 1/10" – 1½"



DN 50 – DN 100 2" – 4"



Size DN	Inch	PN	L ¹⁾	A*	A	C	Ø C	Ø Di	Ø D	E	E1	F	G	G1 MAG-XM	J	COPA-XM appr. kg	MAG-XM appr. kg
3	1/10	10–40 CL150 CL300 JIS	68	64	37	50	42	3	45	96	62	39	239	149	28	3.5	1.5
4	5/32							4									
6	1/4							6									
8	5/16							8									
10	3/8							10									
15	1/2							15							32		
20	3/4	10–16 CL150 JIS	78	74	42	50	50	20	54	100	66	43	247	182	32	4	2.0
25	1		90	86	54	70	59	25	63	107	73	48	259	194	32	4	2.0
32	1¼		98	94	62	70	69	32	73	112	78	53	269	204	32	4.5	2.5
40	1½		103	99	67	70	77	40	82	116	82	57	277	212	32	5	3.0
50	2		117	112	–	110	95	47	100	124	90	50	278	213	–	6	4.0
65	2½	10–16 CL150 JIS	103	99	–	110	111	62	116	138	105	58	300	235	–	6.5	4.5
80	3		103	99	–	110	128	74	133	144	114	66.5	314.5	252	–	8.5	6.5
100	4		133	129	–	110	155	96	160	164	128	80	348	279	–	10.5	8.5

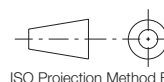
¹⁾ Laid lengths with 2 grounding plates L + 3 mm

Mounting Option Bracket

With mounting bracket size DN 3 - 40 [1/10" - 1½"] complete height +37 mm. DN 50 - 100 [2" - 4"] complete height +10.5 mm.

Mounting accessories see page 26

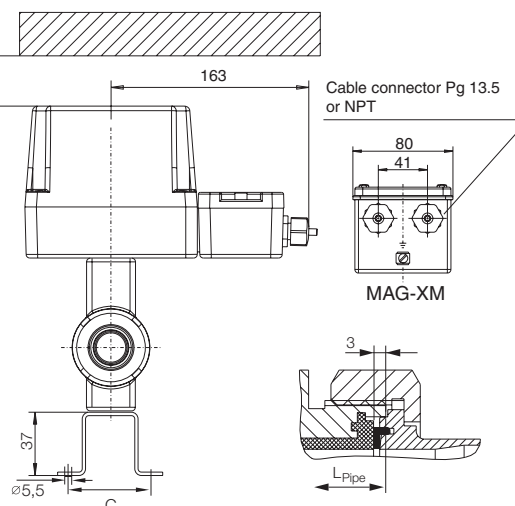
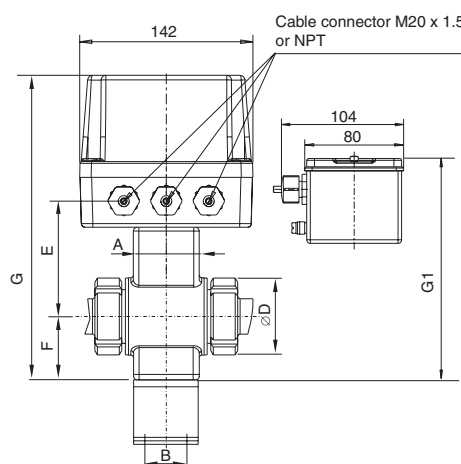
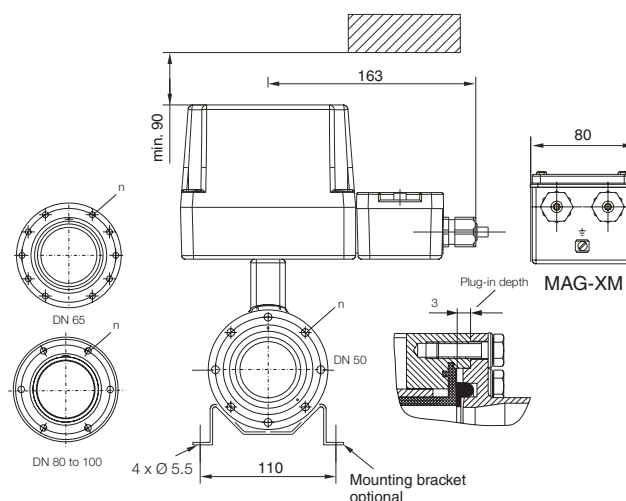
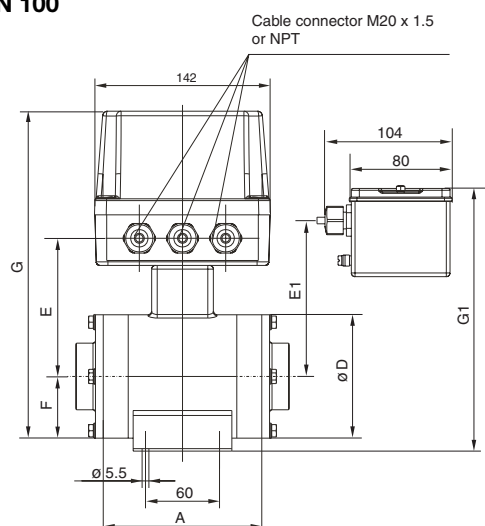
All dim's in mm



ISO Projection Method E

Fig. 26: Dimension Drawings, Models DM21W and DM23W, DN 3 to DN 100 [1/10" to 4"], Wafer Design

Dimension Drawings Flowmeter Primaries, Variable Process Connections, Mod. DM21_ and DM23_

DN 3 – DN 40
1/10" – 1½"DN 50 – DN 100
2" – 4"

Meter Size DN	A	B	C	ØD	E	E1	F	G	G1 MAG-XM	N	L _{Pipe}	SW	COPA-XM Wgt. appr. kg ¹⁾	MAG-XM Wgt. appr. kg ¹⁾
3-10 1/10-3/8	37	28	50	—	96	62	39	239	149	—	85	46	5.0	1.5
15 1/2	37	28	50	—	96	62	39	239	149	—	85	60	5.0	1.5
20 3/4	42	28	50	—	100	66	43	247	182	—	90	60	5.0	2.0
25 1	54	46	70	—	107	73	48	259	194	—	105	75	5.5	2.0
32 1-1/4	62	46	70	—	112	78	53	269	204	—	120	75	6.0	2.5
40 1-1/2	67	46	70	—	116	82	57	277	212	—	125	75	6.5	3.0
50 2	128	60	110	100	124	90	50	278	213	8	—	—	8.0	4.0
65 2-1/2	114	60	110	116	138	105	58	300	234	10	—	—	8.5	4.5
80 3	114	60	110	133	144	114	66,5	314,5	252	6	—	—	10.0	6.5
100 4	144	60	110	160	164	128	80	348	279	6	—	—	12.5	9.0

Laid lengths with process connections see Page 25

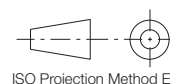
¹⁾ Plus process connection weight see Page 25

Mounting Option Bracket

With mounting bracket size DN 3 - 40 [1/10" - 1½"] complete height +37 mm.

With mounting bracket size DN 50 - 100 [2" - 4"] complete height +10.5 mm.

All dim's in mm



ISO Projection Method E

Fig. 27: Dimension Drawings, Models DM21 and DM23, DN 3 to DN 100 [1/10" to 4"], Basic Dimensions for all Variable Process Connections

Dimension Drawings: Stn. Stl. Flowmeter Primaries, G 1/8"-Sanitary Connector, DN 1 to DN 2 [1/25" to 1/12"]

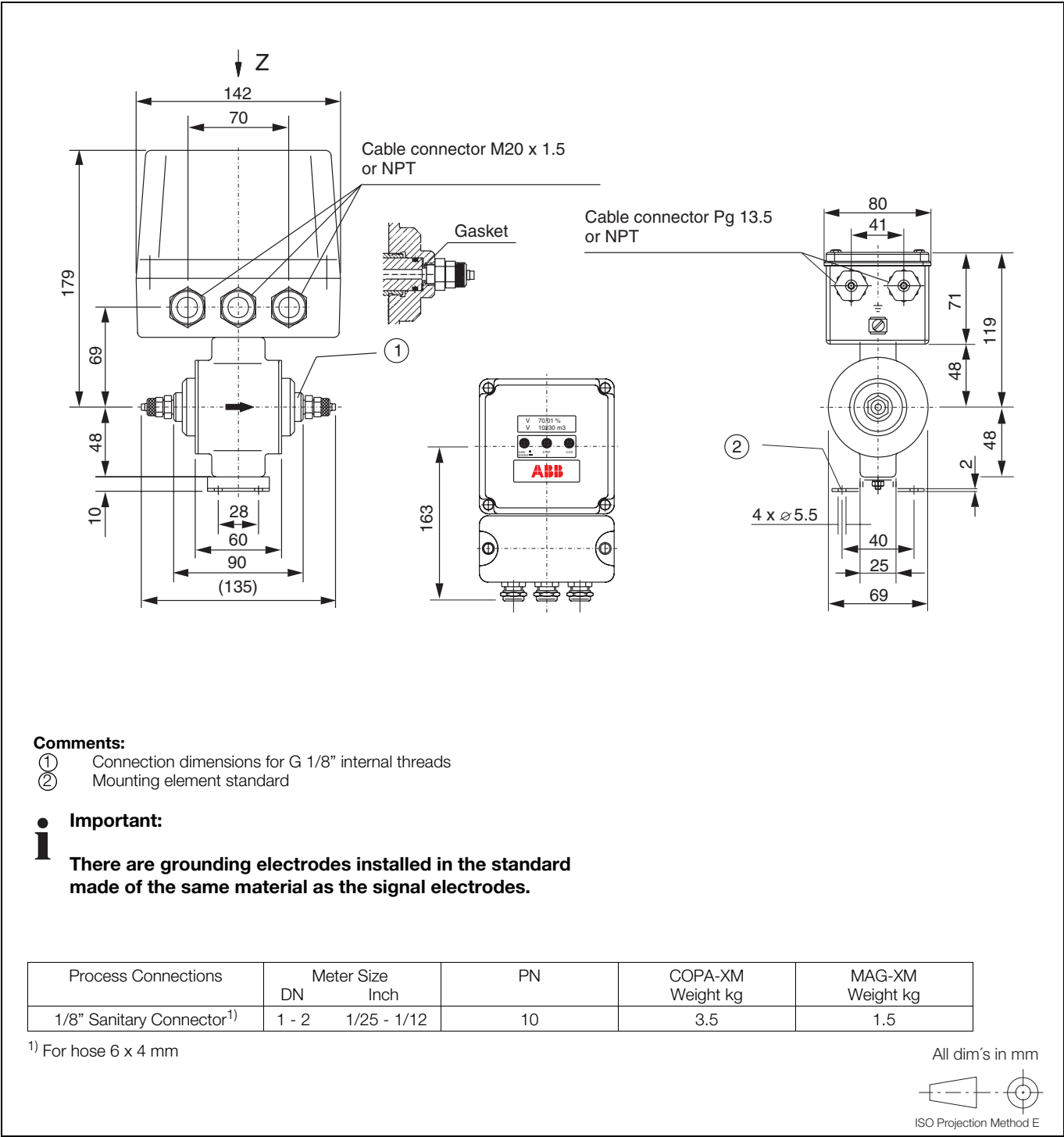


Fig. 29: Dimension Drawings: Flowmeter Primaries DN 1 to DN 2 [1/25" to 1/12"], Models DM23B and DM21B

In add. to Ord. No. pl. incl. the follow. inform.: fluid, fluid temp., oper. press., flow range, pipeline type (ground. plate, ground. electr.)¹⁾

Continued on next page

¹⁾ Only required for wafer design meters with insulated pipelines.

2) Always specify grounding electrode material for DN 1-2 [1/25"-1/12"], standard.

Continuation Ordering Information

COPA-XM													MAG-XM												
Ordering Number													Ordering Number												
DM23													DM21												
Continuation Pressure Rating													Continuation Pressure Rating												
JIS K10	Wafer Design DN 3-100 [1/10"-4"]	K																							
ASME CL150	Wafer Design DN 3-100 [1/10"-4"]	P																							
ASME CL300	Wafer Design DN 3-50 [1/10"-2"]	Q																							
Others		Z																							
Process Connection Material													Process Connection Material												
None	(only wafer design)	0																							
SST No. 1.4571[316Ti]	(only DN 1-2 [1/25"-1/12"])	3																							
SST No. 1.4404[316L]	standard	4																							
PVC	(only DN 1-2 [1/25"-1/12"])	7																							
POM	(DN 1-2 [1/25"-1/12"])	8																							
Others		9																							
Accessories													Accessories												
Without mounting element		A											Without mounting element		A										
With mounting element (DN 1-2 always)		C											With mounting element (DN 1-2 always)		C										
Temperature Range													Temperature Range												
Standard design ≤ 130 °C		S											≤ 130 °C		S										
Certificates													Certificates												
Standard, none		A																							
Material Certificate per EN 10204 3.1 and Pressure Test per AD-2000		D																							
Pressure Test per AD-2000		G																							
Inspection Certificate per EN 10204 3.1		F																							
Calibration Certificates													Calibration Certificates												
None		A																							
Certified, Cold Water/Waste Water		B																							
Certified, Liquids other than Water		C																							
Type of Protection													Type of Protection												
IP 67		2											IP 67		2										
IP 68 (only MAG-XM)													IP 68		7										
IP 68 (cables fitted and potted) (only MAG-XM)													IP 68 (cables fitted and potted)		8										
Supply Power													Supply Power												
230 V;	50/60 Hz																								
115/120 V;	50/60 Hz																								
24 V;	50/60 Hz																								
24 V DC																									
Display													Display												
With		D																							
Contact In-/Output													Contact In-/Output												
Opto coupler		0																							
Relay		1																							
In-/Output Options without/with Communication													In-/Output Options without/with Communication												
Current output, pulse output active		1																							
Current output, pulse output passive, opto coupler		3																							
Current output, pulse output passive, HART-Protocol		4																							
Current output, pulse output active, HART-Protocol		5																							
Current output, RS485 (ASCII-Protocol)		6																							
Current output, PROFIBUS DP		7																							
Current output, PROFIBUS DP (with M12 plug)		9																							
Operation of data entry													Operation of data entry												
Standard with 3 keys and Magnetic Stick (Enter data without removing the housing cover)		B																							

Additional ordering information can be provided in writing.

Name Plate

German, English, French

Gasket Material

EPDM with FDA-Approval (CIP capable, no oil or grease)
 Silicone with FDA-Approval (suitable for oil and grease)
 PTFE (Teflon)
 Viton only DN 1-2 [1/25"-1/12"] and PVC mat. of process connection
 None (only Wafer design)

Electrode Design

Standard
 Conical head (from DN 10 [3/8"] material SST No. 1.4539, 904 L) *
 Others

* For applications with high grease content fluids



Information:

Please indicate in writing if a ± 0.2 % of rate calibration is required.

Specifications Converter



Fig. 30: Plug in unit MAG-XM

Flow Range

End value can be set anywhere between 0.5 and 15 m/s

Forward/Reverse Metering

The flow direction is indicated by arrows in the display and signalled externally over a relay contact or optocoupler.

Accuracy

≤ 0.4% of rate, option 0.2% of rate

Minimum Conductivity

≥ 5 µS/cm
 (≥ 20 µS/cm for flowmeter primaries DN 1 - DN 1.5 [1/25" - 1/12"])

Reproducibility

≤ 0.1% of rate

Response Time (0-99% equiv. to 5 τ)

For a 0-99% step change ≥ 0.125 s to 0.5 s

Supply Power

115/230 V AC -15%/+10%
 24 V AC -15%/+10%
 50/60 Hz ± 6%
 24 V DC -25%/+30% ripple ≤ 1.5 Vpp

Magnetic Field Supply

Standard: 6 1/4, 7 1/2 Hz, 12 1/2, 15 Hz, 25, 30 Hz

Power

≤ 23 VA (flowmeter primary including the converter)

Ambient Temperature

-25 to +60 °C

Protection Class per EN 60529

IP 67 for field mount housing,
 IP 67 COPA-XM

Design

Field mount housing, cast light metal¹⁾

Electrical Connections

Screw terminals, cable connectors M20 x 1.5

Weight

Approx. 3.8 kg field mount housing

Signal Cable (only MAG-XM)

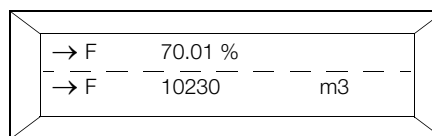
The max. signal cable length between the flowmeter primary and the converter is 200 m, ≥ 200 m upon request. Each flowmeter system is shipped with a 10 m long signal cable. If a length greater than 10 m is required, see Ordering Information Converter see page 38, Footnote.

Parameter Entries

The data can be entered in 9 languages using the keypad on the converter. It is also possible to enter data externally without opening the cover using a Magnetic Stick. Data security is provided by a NV-RAM. All parameters and totalizer values are stored in an NV-RAM for a 10 year period when the supply power is turned off or interrupted without batteries.

Display

2x16-character LCD-dot matrix display with LED background lighting. The flow is totalized internally, separate for each flow direction, in one of 16 different units. The flowrate value can be display in percent or one of 45 different units.



The units listed below can be selected using the arrow keys. These units are used for Range_{max}, Q_{max} forward and reverse and the flow-rate display, when a direct reading engineering unit is selected. In Multiplex operation the flowrate in %, direct reading engineering units or as a bargraph, forward and reverse totalizer values, TAG-No. or current output value can additionally be selected for display in the 1st and 2nd lines.

Unit	Second	Minute	Hour	Day
Milliliter	ml/s	ml/min	ml/h	
Liter	l/s	l/min	l/h	
Hectoliter	hl/s	hl/min	hl/h	
Megaliter		MI/min	MI/h	MI/day
Cubic meter	m ³ /s	m ³ /min	m ³ /h	
Imperial-gallon per	igps	igpm	igph	
U.S.-mill.-gall. per/d				mgd
U.S.-gall. per		gpm	gph	
Barrel Brewery	bbl/s	bbl/min	bbl/h	
Barrel Petrochemical		bls/min	bls/h	bls/day
Gram	g/s	g/min	g/h	
U.S. Ton		uton/min	uton/h	uton/day
Kilogram	kg/s	kg/min	kg/h	
Ton	t/s	t/min	t/h	
Pound	lb/s	lb/min	lb/h	
Kilo-gallon per	kgal/s	kgal/min	kgal/h	

¹⁾ Paint coat 60 µm thick, lower section RAL 7012
 upper section (cover) RAL 9002.

Scaled Pulse Output

The scaled pulse output is a 1-channel output with a max. frequency of 5 kHz and a pulse factor between 0.001 and 1000 for multiplying the values in the display e.g. 1 pulse/m³ x 1000.

The pulse width can be set between 0.100 ms and 2000 ms. Jumpers on the connection board are used to configure the pulse output as passive or active. The output can be reconfigured whenever required.

Design	Active		Passive	
	COPA-XM	MAG-XM	COPA-XM	MAG-XM
Terminal Function	V1, V3 g2, 10	V8, V9	V1, V3 G2, 61	V8, V9
Operating voltage	16 V ≤ U ≤ 30 V DC load ≥ 150 Ohm fmax = 5 kHz		16 V ≤ U _{CEH} < 30 V DC 0 V ≤ U _{CEL} < 2 V 0 mA ≤ I _{CEH} < 0.2 mA 2 mA ≤ I _{CEL} < 250 mA fmax = 5 kHz	
Operating current and frequency	When a mechanical counter is used, it is recommended that the pulse width be set ≥ 30 ms and fmax ≤ 3 Hz		When a mechanical counter is used, it is recommended that the pulse width be set ≥ 30 ms and fmax ≤ 3 Hz	

Programmable Input

The following functions can be assigned to the contact input, active or passive, in the software

Function	Active or Passive	
	Normally open	
		
External Zero Return When the pipeline is empty all output signals can be turned off.	X	X
External Totalizer Reset The internal totalizers and any overflow counter values can be reset when the contact is activated.	X	X
Flow Range 1/2 *) External flow range selection Flow range 2 is selected when the contact is closed.	X	X
START/STOP *) Preset Counter External contact to start metering a predetermined quantity. To initiate a safety stop, activate the contact again.	X	X
Terminals	X1, U2 ¹⁾ Jumper G2 - g2	X1, G2
Operating voltage	16 V ≤ U _{CEH} < 30 V 0 V ≤ U _{CEL} < 2 V R _i = 2.0 kΩ	
Operating current	0 mA ≤ U _{CEH} < 0.2 mA 2 mA ≤ U _{CEL} < 15 mA	

1) Optional function for COPA-XM (internal 24 V DC supply)

*) The functions must first be selected in the submenu "Operating mode".

X = Function can be selected in the software

Alarm Output

Automatic system monitor including CPU failure check with error diagnostics in the display and an error signal over the passive contact output. The errors 0-9 are stored in the submenu Alarm as a check. The contact opens during an alarm condition.

Programmable Output

Contact output, passive, the following functions can be assigned to the output in the software:

Function	Normally Closed	or	Open
General alarm	X		X
Empty pipe	X		X
MAX-Alarm	X		X
MIN-Alarm	X		X
MAX-MIN-Alarm	X		X
F/R-signal	Contact is closed for the forward direction		
2 flow ranges*)	Contact is closed for flow range 2		
Preset counter*)	Contact opens when the preset value is reached (contact closes for the next start command and remains closed during the batch or filling)		
Design	Optocoupler	or	Relay
Terminals COPA-XM Function	G2, P7 E9, C9		G2, P7 39, 40
Terminals MAG-XM Function	P1, P2 EB, CB		P1, P2 96, 97
Pulse output scaled f = 0-10 kHz			
Terminals COPA-XM Function	G2, P7 59, 60		– –
Terminals MAG-XM Function	V5, V6 59, 60		– –
Operating voltage	16 V ≤ U _{CEH} < 30 V 0 V ≤ U _{CEL} < 2 V		16 V ≤ U ≤ 30 V
Operating current	0 mA ≤ U _{CEH} < 0.2 mA 2 mA ≤ U _{CEL} < 15 mA		0 mA ≤ I < 250 mA P ≤ 3 Watt

Information:

i The contact input should be actuated by closing it for more than 1s (preset counter START/STOP > 350 ms but not longer than 1.5 s).

Interconnection Diagram for Peripherals

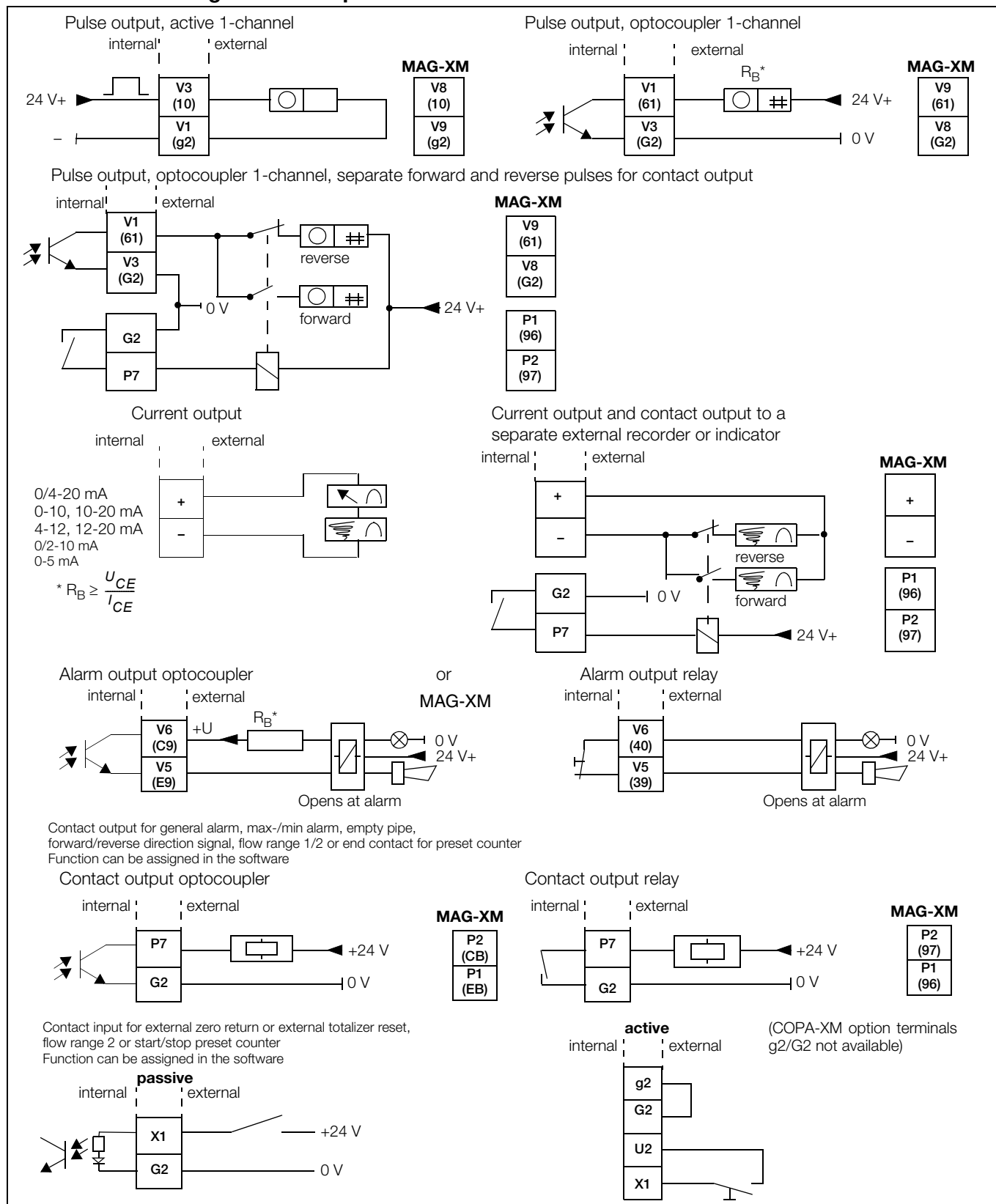
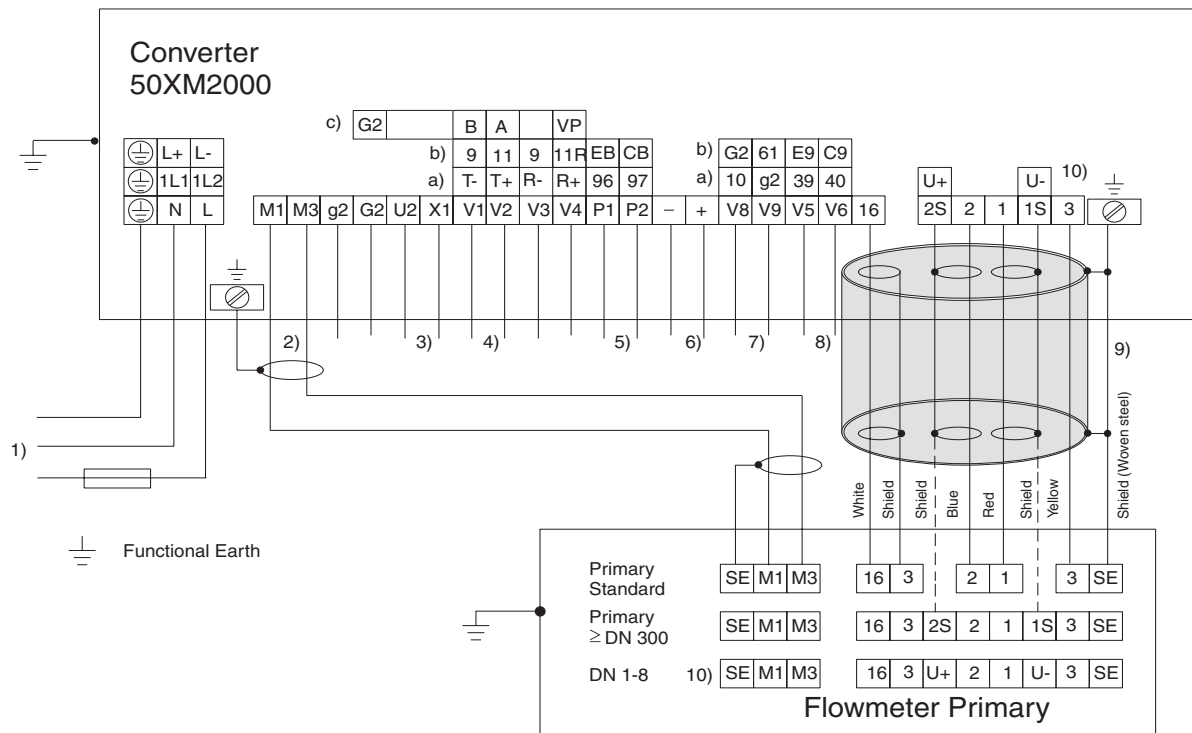


Fig. 35: Interconnection Diagram for Peripherals

Interconnection Diagram Converter MAG-XM



- 1) Supply Power, see Name Plate
- 2) Excitation cable to flowmeter primary (e.g. shielded 2x1.5 mm²), terminals M1, M3
- 3) Contact input, function assigned in the software as ext. zero return or ext. totalizer reset or ext. flow range selection or start contact for preset counter passive, over contact (normally open), with ext. current supply, 16 V $\leq$ U_{CEH} $\leq$ 30 V DC, $R_i = 2k\Omega$ terminals X1, G2, active, over contact (normally open), terminals X2, U2, jumper terminals g2/G2
- 4) a) Data link RS 485¹⁾, terminals V1-V4, function (T-, T+, R-, R+)
b) Option: Scaled pulse output 2-channel active, 24 V DC, load $\geq 150 \Omega$ or passive relay contact (normally open), $\leq 3 W$; $\leq 250 mA$; $\leq 28 V DC$, $f_{max} = 20 Hz$ or passive optocoupler, 5 V $< U_{CE} < 28 V DC$, 5 mA $< I_{CE} < 30 mA$; $f_{max} 5 kHz$ terminals: V1, V2 forward; function 9, 11 terminals: V3, V4 reverse; function 9, 11R
- c) Data link PROFIBUS DP, terminals V1, V2, V4, G2, function (Rx/D/TxD-P(B), Rx/D/TxD-N(A), +5 V (VP), DGND (G2) for bus termination.
- 5) Contact output, function assigned in the software as general alarm, limit alarm, empty pipe, forward direction signal, 2 flow ranges or preset counter over relay contact $\leq 3 W$; $\leq 250 mA$; $\leq 30 V DC$, terminals P1/P2, function (96/97) over optocoupler 16 V $\leq U_{CEH} \leq 30 V DC$, 2 mA $\leq I_{CEL} < 15 mA$, terminals P1/P2, function (EB/CB)
- 6) Current output selectable, 0/4-20 mA load $\leq 1000 \Omega$, 0/2-10 mA $\leq 2000 \Omega$, 0-5 mA load $\leq 4000 \Omega$, terminals +/-)
- 7) * Scaled pulse output forward/and reverse;
a) Active, 24 V DC, load $\geq 150 \Omega$, $f_{max} = 5 kHz$, terminals V8, V9, function (g2/10)
b) Passive, 5 mA $\leq I \leq 250 mA$, 5 V $\leq U \leq 25 V DC$, $f_{max} = 5 kHz$, terminals V8/V9, function (G2/61)
- 8) a) Alarm output, relay contact $\leq 3 W$; $\leq 250 mA$; $\leq 30 V DC$, opens during alarm, terminals V6/V6 function (39/40)
b) Alarm output, optocoupler 16 V $\leq U_{CEH} \leq 30 V DC$, 2 mA $\leq I_{CEL} < 15 mA$, $I_{CE} \leq 7.5 mA$, terminals V5/V6, function (E9, C9)
- 9) Shielded signal cable, Part No. D173D025U01, 10 m included in shipment.
- 10) Voltage supply for preamplifier in flowmeter primary (DN 1-8 [1/25" - 5/16"] and for flowmeter primaries with a signal cable length $\geq 200 m$, terminals +U, -U.

*) Scaled pulse output, active or passive, pulse width can be set between 0.100 and 2000 ms.

1) When connecting a RS 485 data link a shielded data cable with individually twisted pairs is recommended.

! When PROFIBUS DP is specified the pulse output active is not available

Fig. 36: Interconnection Diagram MAG-XM

Ordering Information Converter MAG-XM

Accuracy: 0.4 % of rate, Option 0.2 % of rate

Ordering Number													
Remote Converter		50XM2											
For connection to a flowmeter primary													
Standard flowmeter primary		1											
DN 1-8 [1/25"-5/16"] and flowmeter primaries with preamplifiers		2											
Design Level													
(Specified by ABB Automation Products)		*											
Software Level													
Generation (Specified by ABB Automation Products)		*											
Approvals													
None		A											
Others		Z											
Housing													
Field mount housing with window		B											
Contact Outputs, Alarm and Configurable Output													
Optocoupler		1											
Relay		2											
Pulse Output, 1-Channel Terminals V8/V9 Standard													
Active		1											
Passive		2											
Operating Mode													
Continuous flow metering		A											
Entry Parameter Operation													
Standard with 3 keys and Magnetic Stick operation		B											
Accessories													
None		A											
Serial data link RS 485 ¹⁾		C											
HART-Protocol		D											
PROFIBUS DP ¹⁾		E											
Supply Power													
230 V, 50/60 Hz		B											
115/120 V, 50/60 Hz		C											
24 V, 50/60 Hz		F											
24 V DC		H											
Name Plate													
German		1											
English		2											
French		3											
Others upon request		9											

¹⁾ Passive pulse output available.

Signal cable: A 10 m long signal cable is included with the shipment. If a longer cable is required please order under Part No. D173D025U01.

Ordering Information Test Simulator

Ordering Number						
Flowmeter Primary Simulator		55XC4				
Setting the Flowrate Value						
None (only adapter)		0				
3-Digit switch in 1000 steps		1				
Supply Power¹⁾						
None (adapter order only)			0			
110 V-240 V (50/60 Hz) with Schuko plug			1			
24 V/48 V (AC/DC) with 4 mm plug			2			
110 V-240 V (50/60 Hz) with USA plug			3			
Others			9			
Accessories²⁾						
None				0		
Adapter for converters 50XM2000/50XE4000/E4/50XF4000				1		
Adapter for converter S4				5		
Others				9		
Design Level						
(Specified by ABB Automation Products)					*	
Name Plate						
German						1
English						2
French						3

¹⁾ The supply power must agree with the specifications on the converter Name Plate.

²⁾ If both adapters are required, then the Ordering Number for each adapter is to be used.

Software

SMART VISION Communication Tool for HART®

Free 90 day evaluation version upon request.