

Flow Products

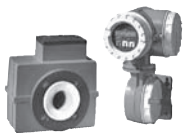
The specifications listed in the Product Overview pages are for basic comparison. Detailed specifications are available in the individual Technical Information documents. Specifications subject to change without notice.

PROline Promag electromagnetic flowmeters

Promag 50/53 Transmitters		
	50	53
		
Power supply	85 to 260 VAC 20 to 55 VAC/16 to 62 VDC	85 to 260 VAC 20 to 55 VAC/16 to 62 VDC
Housing	Compact, aluminum (A) Remote wall-mount, aluminum (B) Compact, 304 SS (C, H sensor only) Remote field housing, aluminum (D)	Compact, aluminum (A) Remote wall-mount, aluminum (B) Compact, 304 SS (C, H sensor only) Remote field housing, aluminum (D)
Output	4 to 20 mA HART, Pulse, Frequency	4 to 20 mA HART, Pulse, Frequency
Display / Local operation	2-line LCD / 3 pushbuttons	4-line LCD / Touch control
Remote operation	HART, Profibus-PA	HART, Profibus-PA / DP, Foundation Fieldbus
Ambient temperature	-5 to +140°F, optional -40 to +140°F	-5 to +140°F, optional -40 to +140°F

Promag 50/53 Sensors			
	W	P	H
			
Basic application	Water, wastewater	Chemical, process	Food, beverage, pharmaceutical
Nominal size	1" to 78"	1" to 12"	1/12" to 4"
Measuring range	2.5 gpm to 650 Mgal/day	2.5 to 10,600 gpm	0.015 to 1250 gpm
Sensor liner (process temperature)	Hard rubber (+32 to +175°F), 3" up to 78" Polyurethane (-5 to +125°F), 1" up to 78"	PTFE (-40 to +265°F)	PFA (-40 to +300°F)
Electrodes	316L SS, Alloy C-22, Tantalum	316L SS, Alloy C-22	316L SS, Alloy C-22
Process connections	ANSI Class 150 (1" to 24"), Class 300 (up to 8") Class D AWWA (28" to 78")	ANSI Class 150 flanges	ANSI Class 150 flanges, Tri-clamp, Weld pipe nipple
Ambient temperature	-5 to +140°F	-5 to +140°F	-5 to +140°F
Approvals / certificates	FM, CSA	FM, CSA	FM, CSA, 3-A
Transmitter housing types	Compact aluminum, wall-mounted aluminum remote aluminum	Compact aluminum, wall-mounted aluminum remote aluminum	Compact aluminum, wall-mounted aluminum, remote aluminum, compact stainless steel

Promag 10 Sensor/transmitter				Promag 23 Sensor/transmitter (2-wire)	
	10 W	10 P	10 H	23 P	23 H
					
Basic application	Water, wastewater	Chemical, process	Food, beverage, pharmaceutical	Chemical, process	Food, beverage, pharmaceutical
Nominal size	1" to 24"	1" to 12"	1/12" to 4"	1" to 8"	1/12" to 4"
Measuring range	2.5 to 44,000 gpm	2.5 to 10,600 gpm	0.015 to 1250 gpm	2.5 to 4850 gpm	0.015 to 1250 gpm
Sensor liner (process temperature)	Hard rubber (32 to +175°F) Polyurethane (-5 to +125°F)	PTFE (-40 to +265°F)	PFA (-40 to +300°F)	PTFE (-40 to +265°F) PFA (-5 to +355°F)	PFA (-5 to +300°F)
Electrodes	316L SS Alloy C-22	316L SS Alloy C-22	316L SS Alloy C-22	316L SS, Alloy C-22, Tantalum, Platinum/rhodium	316L SS, Alloy C-22, Tantalum, Platinum/rhodium
Housing	Compact, aluminum Remote, aluminum	Compact, aluminum Remote, aluminum	Compact, aluminum Remote, aluminum	Compact, aluminum	Compact, aluminum
Process connections	ANSI Class 150 flanges	ANSI Class 150 flanges	ANSI Class 150 flanges, Tri-clamp, Weld pipe nipple	ANSI Class 150/300 flanges	ANSI Class 150 flanges, Tri-clamp, hose, weld pipe nipple, PVC adhesive coupling
Output	4 to 20 mA HART, Pulse	4 to 20 mA HART, Pulse	4 to 20 mA HART, Pulse	4 to 20 mA HART, Pulse	4 to 20 mA HART, Pulse
Ambient temperature	-5 to +140°F	-5 to +140°F	-5 to +140°F	-5 to +140°F	-5 to +120°F
Power supply	85 to 250 VAC 20 to 28 VAC/11 to 40 VDC	85 to 250 VAC 20 to 28 VAC/11 to 40 VDC	85 to 250 VAC 20 to 28 VAC/11 to 40 VDC	12 to 30 VDC	12 to 30 VDC
Display / User interface	2-line LCD / 3 pushbuttons	2-line LCD / 3 pushbuttons	2-line LCD / 3 pushbuttons	4-line LCD / Touch control	4-line LCD / Touch control
Remote operation	HART, Fieldtool	HART, Fieldtool	HART, Fieldtool	HART	HART
Approvals / certificates	FM, CSA	FM, CSA	FM, CSA, 3-A	FM, CSA	FM, CSA, 3-A

Promag 35 sensor/transmitter	
	35S 
Basic application	Fluids with high solids content
Nominal size	1/2" to 24"
Measuring range	0.84 to 44,800 gpm
Sensor liner (process temperature)	PTFE (1/2" to 24", -40 to +266°F) Soft rubber (3" to 24", -4 to +248°F) Hard rubber (3" to 24", 32 to +176°F) Optional NR, PU (-40 to +150°F)
Electrodes	Alloy C-22, Tantalum
Housing	Sensor: 1/2" to 8", aluminum 10" to 24", varnished steel Transmitter: aluminum
Process connections	ANSI Class 150, 300 316L SS ANSI ST-37 steel
Output	0/4 to 20 mA HART, pulse, frequency
Ambient temperature	-4 to +140°F
Power supply	180 to 260 VAC or 85 to 130 VAC 20 to 55 VAC, 16 to 62 VDC
Display / User interface	2-line LCD / Touch control
Remote operation	HART, Profibus, RS 485 interface
Approvals / certificates	CSA general purpose

Magphant flow limit switch	
	DTI 200 
Basic application	All industries, conductive liquids
Pipe sizes	1" to 80", insertion
Measuring range	3.3 to 16.4 ft/s
Power supply	20 to 30 VDC
Housing	Compact, aluminum
Process connection	Weld stub, external (1" pipe) Weld stub, internal (1-1/2" and larger pipe) Plastic weld stub (for plastic pipe)
Process temperature	-4 to +250°F
Electrodes	316L SS
Output	4 to 20 mA
Local operation	Mini-switches, potentiometers, LEDs
Ambient temperature	-4 to +140°F
Approvals / certificates	FM, CSA

Dosimag (filling applications)	
	5BH 
Basic application	Food, beverage, pharmaceutical, chemical
Nominal sizes	5/32", 5/16", 1/2"
Measuring range	0.13 to 13.2 gal/min
Power supply	20 to 30 VDC
Housing	Compact, 304 SS
Sensor liner	PFA
Electrodes	316L SS, Alloy C-22
Seals	EPDM (-4 to +266°F) Silicone (-4 to +302°F) Viton® (32 to +302°F)
Process connections	Tri-clamp, 316L SS
Output	Pulse (max 10 kHz)
Operation	Remote, via FieldTool™ operating software
Ambient temperature	-4 to +140°F
Process temperature	-4 to +266°F
Approvals / certificates	3-A, FM, CSA (general purpose)

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FieldTool™ is a registered trademark of Endress+Hauser Flowtec AG, Reinach, CH

PROline Promass Coriolis flowmeters

Promass 80/83 Transmitters		
	80 	83 
Power supply	85 to 260 VAC 20 to 55 VAC/16 to 62 VDC	85 to 260 VAC 20 to 55 VAC/16 to 62 VDC
Housing	Compact, aluminum (A) Remote wall-mount, aluminum (B) Compact, 304 SS (C), not available for E sensor Remote field housing, aluminum (D)	Compact, aluminum (A) Remote wall-mount, aluminum (B) Compact, 304 SS (C), not available for E sensor Remote field housing, aluminum (D)
Output	4 to 20 mA HART, Pulse, Frequency	4 to 20 mA HART, Pulse, Frequency
Display / Local operation	2-line LCD / 3 pushbuttons	4-line LCD / Touch control
Remote operation	HART, Profibus-PA	HART, Profibus-PA / DP, Foundation Fieldbus, MODBUS® RS 485
Ambient temperature	-5 to +140°F, optional -40 to +140°F	-5 to +140°F, optional -40 to +140°F

MODBUS® is a registered trademark of the MODBUS Organization

Promass Sensors for 80/83 transmitters						
	E 	F 	M 	H 	I 	A 
Basic application	Process industries	Process industries	Process industries	Food, beverage, process	Food, beverage, process	Process industries
Nominal sizes	3/8" to 2"	3/8" to 10"	3/8" to 3"	3/8" to 2"	3/8" to 2"	1/24", 1/12", 1/8"
Measuring range	0 to 2570 lb/min	0 to 80,860 lb/min	0 to 6600 lb/min	0 to 2570 lb/min	0 to 2570 lb/min	0 to 16.5 lb/min
Measured variable	Mass flow, volume flow	Mass flow, density, volume flow, temperature	Mass flow, density, volume flow, temperature	Mass flow, density, volume flow, temperature	Mass flow, density, volume flow, temperature	Mass flow, density, volume flow, temperature
Sensor housing	304 SS	304 SS	Nickel-plated steel, 3/8" -2" Stainless steel, 3"	304 SS	304 SS	304 SS
Sensor tubes	Dual, 904L SS	Dual, 904L SS, 3/8" to 4" Alloy C-22, 3/8" to 3" 316L, 6" and 10"	Dual, Titanium	Single, Zirconium	Single, Titanium	Single, 904L SS or Alloy C-22
Secondary containment	No	Yes	Yes	Yes	Yes	Yes
Seals	No internal seals	No internal seals	Viton® (+5 to 300°F) EPDM (-40 to 300°F) Silicon (-60 to 300°F) Kalrez® (-20 to 300°F) FEP jacketed (-60 to 300°F)	No internal seals	No internal seals	No internal seals (optional mounting sets, threaded connections, EPDM, Silicon, Viton, Kalrez)
Process connections	ANSI Class 150, 300, 600 VCO Tri-clamp	ANSI Class 150, 300, 600 Tri-clamp	ANSI Class 150, 300, 600 (316L SS, Titanium, PVDF) Tri-clamp	ANSI Class 150, 300 (304 SS) Wetted parts Zirconium 702	ANSI Class 150, 300 (304 SS), VCO, Tri-clamp Wetted parts Titanium	VCO, 904L SS or Alloy C-22 Tri-clamp, 904 SS
Ambient temperature	-4 to +140°F	-4 to +140°F	-4 to +140°F	-4 to +140°F	-4 to +140°F	-4 to +140°F
Process temperature	-4 to +255°F	-60 to +400°F Optional -60 to +660°F	-60 to +300°F	-60 to +400°F	-60 to +300°F	-60 to +400°F
Transmitter housing type	Compact aluminum, wall-mounted aluminum, remote aluminum	Compact aluminum, wall-mounted aluminum, remote aluminum, compact SS	Compact aluminum, wall-mounted aluminum, remote aluminum, compact SS	Compact aluminum, wall-mounted aluminum, remote aluminum, compact SS	Compact aluminum, wall-mounted aluminum, remote aluminum, compact SS	Compact aluminum, wall-mounted aluminum, remote aluminum, compact SS
Approvals / certificates	FM, CSA, 3-A, SIL 2	FM, CSA, 3-A, SIL 2	FM, CSA, 3-A, SIL 2	FM, CSA, SIL 2	FM, CSA, SIL 2, 3-A	FM, CSA, SIL 2, 3-A

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Promass 40 E	
	40 E 
Basic application	Process industries
Nominal sizes	3/8", 1/2", 1", 1-1/2", 2"
Measuring range	0 to 2570 lb/min
Measured variable	Mass flow, volume flow
Power supply	85 to 260 VAC 20 to 55 VAC 16 to 32 VDC
Housing	Transmitter, coated aluminum Sensor, 304 SS
Sensor tubes	904L SS
Secondary containment	No
Seals	No internal seals
Process connections	ANSI Class 150, 300, 600 VCO Tri-clamp
Output	4 to 20 mA HART, frequency, status
Display / Local operation	2-line LCD / None
Remote operation	HART, FieldTool software operation
Ambient temperature	-4 to +140°F
Process temperature	-4 to +255°F
Approvals / certificates	3-A, FM, CSA

Dosimass (filling applications)	
	8BE 
Basic application	Food, beverage, pharmaceutical, chemical
Nominal sizes	5/16", 1/2", 1"
Measuring range	0 to 660 lb/min
Measured variable	Mass flow, volume flow, density
Power supply	20 to 30 VDC
Housing	Compact, 304 SS
Sensor tubes	904L SS
Secondary containment	No
Seals	None, welded process connections
Process connections	Tri-clamp, 316L SS
Output	Pulse (max 10 kHz)
Operation	Remote, via "Field Tool" operating software
Ambient temperature	-4 to +140°F
Process temperature	-4 to +257°F
Approvals / certificates	3-A, FM, CSA (general purpose)

PROline Prosonic ultrasonic flowmeters

Prosonic 90/93 Transmitters		Prosonic 92 Transmitter	
	90 	93 	92 
Power supply	85 to 260 VAC 20 to 55 VAC/16 to 62 VDC	85 to 260 VAC 20 to 55 VAC/16 to 62 VDC	Re-chargable built-in battery
Housing	Remote wall-mount, aluminum Remote field housing, aluminum	Remote wall-mount, aluminum Remote field housing, aluminum	Hand-held remote, plastic case
Output	4 to 20 mA HART, Pulse, Frequency	4 to 20 mA HART, Pulse, Frequency	4 to 20 mA
Display / Local operation	2-line LCD / 3 pushbuttons	4-line LCD / Touch control	240 x 320 dot LCD / 9 push buttons
Remote operation	HART, Profibus-PA	HART, Profibus-PA / DP, Foundation Fieldbus	RS-232C
Ambient temperature	-5 to +140°F, optional -40 to +140°F	-5 to 140°F, optional -40 to +140°F	+15 to +115°F

Prosonic Sensors for 90/93 sensors					
	W (clamp on) 	W (insertion) 	U (clamp on) 	C (in-line) 	P (clamp on) 
Basic application	Water, wastewater	Water, wastewater	Water, wastewater	Water, wastewater	Chemical, process
Nominal pipe sizes	2" to 160"	8" to 160"	1/2" to 4"	12" to 78"	2" to 160"
Measuring range	0 to 50 ft/s (0 to 23 ft/s, Prosonic 92)	0 to 50 ft/s	0 to 23 ft/s	0 to 33 ft/s	0 to 50 ft/s
Measured variable	Flow velocity (converted to volume flow)	Flow velocity (converted to volume flow)	Flow velocity (converted to volume flow)	Flow velocity (converted to volume flow)	Flow velocity (converted to volume flow)
Sensor housing	304 SS	316L SS	Plastic	316L SS	304 SS
Sensor contact surface	Chemical resistant plastic	Weld in holder, 304 SS	Chemical resistant plastic	Weld in holder, 316L SS Measuring tube, ST 37.2 CS	Chemical resistant plastic
Process mounting	Clamp on, 304 SS tension bands	Threaded, mounts to weld-in adapter	Clamp on, 304 SS tension bands	Threaded, mounts to weld-in adapter. Measuring tube, ANSI flanges Class 150 (12" to 24"); Class D AWWA (28" to 78")	Clamp on, 304 SS tension bands
Transmitter type	Prosonic 90, 93, 92	Prosonic 90, 93	Prosonic 90, 93, 92	Prosonic 93	Prosonic 93
Process temperature	-5 to +175°F	-40 to +175°F	-5 to +140°F	Measuring tube, 14 to +140°F W insertion, -40 to +175°F	-40 to +175°F 32 to +340°F
Approvals / certificates	FM, CSA (Prosonic 92, non-hazardous only)	FM, CSA	FM, CSA (Prosonic 92, non-hazardous only)	FM, CSA	FM, CSA

PROline Prowirl Vortex flowmeters

Prowirl 72/73 Transmitters		
	72	73
		
Basic application	Gas, steam, liquids	Gas, steam, liquids, saturated steam mass
Nominal size	1/2" to 12" (flanged) 1/2" to 6" (wafer)	1/2" to 12" (flanged) 1/2" to 6" (wafer)
Measuring range	Liquid 0.70 to 10,391 gpm (flanged) 0.84 to 2752 gpm (wafer) Gas 1.77 to 11,595 SCFM (flanged) 2.35 to 3066 SCFM (wafer)	Liquid 0.70 to 10,391 gpm (flanged) 0.84 to 2752 gpm (wafer) Gas 1.77 to 11,595 SCFM (flanged) 2.35 to 3066 SCFM (wafer)
Process connection	Flange version: ANSI Class 150, 300, 600 flanges Wafer version: ANSI Class 150, 300 flanges	Flange version: ANSI Class 150, 300, 600 flanges Wafer version: ANSI Class 150, 300 flanges
Housing	Compact, aluminum Remote field housing, aluminum	Compact, aluminum Remote field housing, aluminum
Output	4 to 20 mA HART, pulse, status	4 to 20 mA HART, pulse, status, frequency
Display / Local operation	2-line LCD / 3 pushbuttons	2-line LCD / 3 pushbuttons
Remote operation	HART, PFM, Profibus-PA, Foundation Fieldbus	HART, PFM, Profibus-PA, Foundation Fieldbus
Ambient temperature	-40 to +158°F, compact -40 to +185°F, remote	-40 to +158°F, compact -40 to +185°F, remote
Process temperature	-330 to +750°F	-330 to +750°F
DSC sensor	Flanged version: 316L SS, Inconel, Alloy C-22 Wafer version: 316L SS, Alloy C-22	Flanged version: 316L SS Wafer version: 316L SS
Sensor seal	Grafoil (graphite), -330 to +750°F Viton, +5 to +345°F Kalrez, -5 to +527°F Grafoil (oil/fat/water-free), -330 to +750°F Viton (oil/fat/water-free), +5 to +345°F Gylon® (PTFE), -330 to +500°F Gylon (oil/fat/water-free), -330 to +500°F (not for 8" to 12" sensors)	Grafoil (graphite), -330 to +750°F Viton, +5 to +345°F Kalrez, -5 to +527°F Grafoil (oil/fat/water-free), -330 to +750°F Viton (oil/fat/water-free), +5 to +345°F Gylon (PTFE), -330 to +500°F Gylon (oil/fat/water-free), -330 to +500°F (not for 8" to 12" sensors)
Power supply	Non-hazardous, 12 to 36 VDC (HART 18 to 36 VDC) Intrinsically safe, 12 to 30 VDC (HART 18 to 30 VDC) Explosion proof, 15 to 36 VDC (HART 21 to 36 VDC)	Non-hazardous, 12 to 36 VDC (HART 18 to 36 VDC) Intrinsically safe, 12 to 30 VDC (HART 18 to 30 VDC) Explosion proof, 15 to 36 VDC (HART 21 to 36 VDC)
Approvals / certificates	FM, CSA, CE	FM, CSA, CE

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Flow computers

Energy manager		
	RMS 621	RMC 621
		
Basic application	Steam and water	Gas, liquids, steam and water
Measuring range	Liquids: +32 to +572°F (water only) Steam: 0 to 14,500 psig, +32 to +1472°F	Liquids: -460 to +572°F Steam: 0 to 14,500 psig, +32 to +1472°F Technical gas: 0 to 7250 psig, -215 to +1472°F Natural gas: 0 to 1740 psig, -76 to +392°F
Calculation standards	Steam/water: IAPWS-IF 97	Steam/water: IAPWS-IF 97 Technical gas: Real gas calculation, improved ideal gas cal., gas tables Natural gas: NX 19, SCERG(88), AGA8 Liquids: OILM R63, API 12540, ASTM D1250, Linear calculations, internal stored tables
Housing	DIN rail or panel mount	DIN rail or panel mount
Inputs	Current, PFM, pulse, temperature (Pt100/500/1000)	Current, PFM, pulse, temperature (Pt100/500/1000)
Outputs	0/4 to 20 mA, pulse, relays, digital	0/4 to 20 mA, pulse, relays, digital
Display / Local operation	142 x 36 dot matrix with rear illumination / 8 soft-key pushbuttons or RS 232 / RS 485	142 x 36 dot matrix with rear illumination / 8 soft-key pushbuttons or RS 232 / RS 485
Interface	RS 232, RS 485/85, PROFIBUS-DP	RS 232, RS 485, PROFIBUS-DP
Operating software	ReadWin 2000	ReadWin 2000
Ambient temperature	-4 to +140°F	-4 to +140°F
Power supply	90 to 250 VAC 18 to 36 VDC 20 to 28 VAC	90 to 253 VAC 20 to 36 VDC 20 to 28 VAC
Standards / approvals	OILM R75, CE / UL	OILM R75, CE / UL, FM, CSA