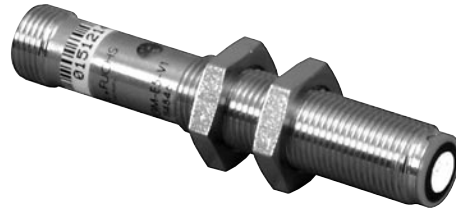


12 mm Diameter Switch Point and Analog Outputs

- Smallest available cylindrical housing
- 120 mm (5"), 200 mm (8"), and 400 mm (16") sensing ranges
- Pushbutton programmable via UB-PROG2
- Discrete switch point or analog outputs available



The smallest version of P+F's industry leading ultrasonic sensors. The 12 mm cylindrical housings are available with either analog or discrete output. These units have a fully programmable sensing range via the white connection wire or the optional handheld programmer, UB-PROG2.



See pages 803-854 for cordsets



See pages 865-872 for accessories

Single Switch Point Output						
Model Number	Sensing Range	Unusable Area	Output	Transducer Freq.	Response Time	Switching Freq.
UB120-12GM-E4-V1	20-120 mm	0-20 mm	NPN, 1 NO or NC	850 kHz	≤ 9 ms	≤ 52 Hz
UB120-12GM-E5-V1			PNP, 1 NO or NC			
UB200-12GM-E4-V1	20-200 mm	0-20 mm	NPN, 1 NO or NC	400 kHz	≤ 30 ms	≤ 13 Hz
UB200-12GM-E5-V1			PNP, 1 NO or NC			
UB400-12GM-E4-V1	50-400 mm	0-50 mm	NPN, 1 NO or NC	310 kHz	≤ 50 ms	≤ 8 Hz
UB400-12GM-E5-V1			PNP, 1 NO or NC			

Analog Output					
Model Number	Sensing Range	Unusable Area	Output	Transducer Freq.	Response Time
UB120-12GM-I-V1	20-120 mm	0-20 mm	4-20 mA (load ≤ 300 Ω)	850 kHz	≤ 27 ms
UB120-12GM-U-V1			0-10 V (load ≥ 1 kΩ)		
UB200-12GM-I-V1	20-200 mm	0-20 mm	4-20 mA (load ≤ 300 Ω)	400 kHz	≤ 30 ms
UB200-12GM-U-V1			0-10 V (load ≥ 1 kΩ)		
UB400-12GM-I-V1	50-400 mm	0-50 mm	4-20 mA (load ≤ 300 Ω)	310 kHz	≤ 50 ms
UB400-12GM-U-V1			0-10 V (load ≥ 1 kΩ)		

- ⚡ Stocked item
- Typical delivery 4 weeks or less
- Consult factory for all other models

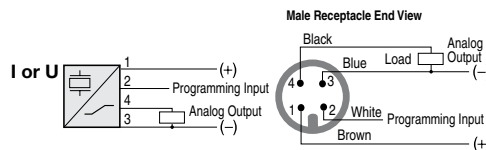
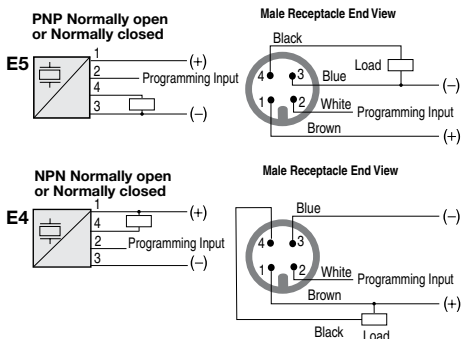
Wiring Diagrams



Quick Disconnect

Note: Wiring diagrams show quick disconnect pin numbers.

V1 Type

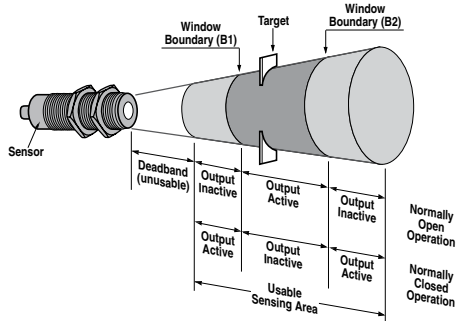


Specifications	Single Switch Point	Analog Output
SUPPLY VOLTAGE	10-30 VDC	10-30 VDC (suffix -I) 15-30 VDC (suffix -U)
OUTPUT		
LOAD CURRENT (PER OUTPUT)	≤ 100 mA	–
VOLTAGE DROP	≤ 2 VDC	–
SHORT CIRCUIT AND OVERLOAD PROTECTED	Yes	Yes
REVERSE POLARITY PROTECTION	Yes	Yes
INPUT - SYNCHRONIZATION	No	No
LED(S)	Yes (2)	Yes (2)
CURRENT CONSUMPTION	≤ 30 mA	≤ 30 mA
REPEATABILITY	≤ 1% of set switching distance	≤ 0.5% of full scale
HYSTERESIS	≤ 1% of set switching distance	–
RESOLUTION	–	0.17 mm
LINEARITY	–	± 1% max.
STANDARDS	EN 60947-5-2	EN 60947-5-2
PROTECTION IEC	IP65	IP65
STANDARD TARGET	UB120 10 mm x 10 mm flat plate	10 mm x 10 mm flat plate
	UB200, UB400 100 mm x 100 mm flat plate	100 mm x 100 mm flat plate
TEMPERATURE RANGE	WORKING: -13 °F to +158 °F (-25 °C to 70 °C) STORAGE: -40 °F to +185 °F (-40 °C to 85 °C)	-13 °F to +158 °F (-25 °C to 70 °C) -40 °F to +185 °F (-40 °C to 85 °C)
HOUSING MATERIAL	Nickel-plated brass	Nickel-plated brass
TRANSDUCER	Epoxy resin/silica composite; foam polyurethane, surround PBT	Epoxy resin/silica composite; foam polyurethane, surround PBT
TEMPERATURE DRIFT	≤ 1.5% of final value	≤ 1.5% of final value
APPROVALS	CE UL SP	CE UL SP
ELECTRICAL CONNECTION	4-pin M12 x 1 (V1)	4-pin M12 x 1 (V1)

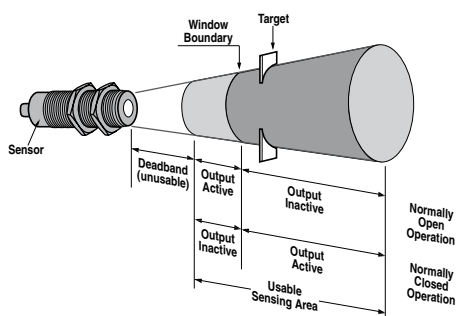
Modes of Operation

Single Switch Point Output

Window Mode

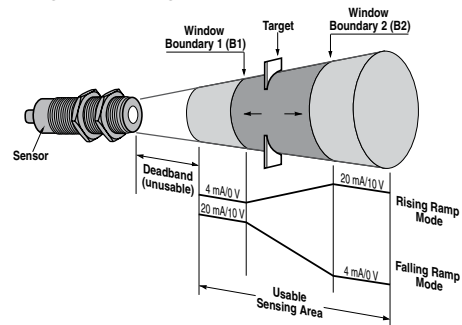


Setpoint Mode



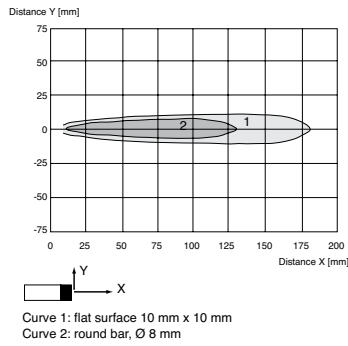
Analog Output

Rising and Falling Ramp

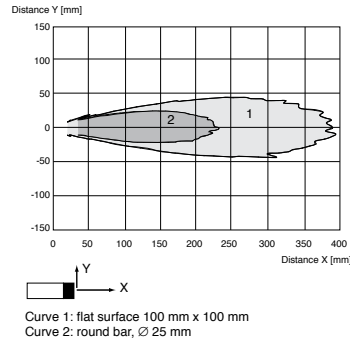


Target Response Curves

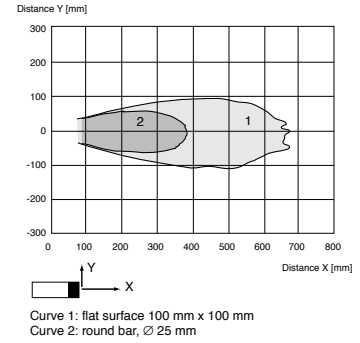
UB120-12GM...



UB200-12GM...

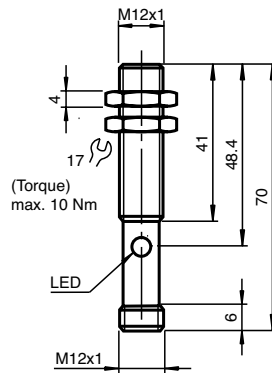


UB400-12GM...



Dimensions (mm)

UB120-12GM...
UB200-12GM...
UB400-12GM...



Recommended Accessories



Pushbutton Programmer

Model	Description
UB-PROG2	Pushbutton programmer for single switch point and analog output sensors



BF12



BF 12-F



BF5-30



AB12

Mounting Brackets

Model	Description
BF12	12 mm clamp bracket
BF 12-F	12 mm snap lever bracket
BF5-30	5-30 mm universal bracket
AB12	12 mm right angle bracket

See pages 865-872 for complete accessory listing.



Micro Cordsets

4-Pin Straight "Micro" (M12)	
Model	Description
V1-G-YE2M-PVC	2 m length, PVC jacket
V1-G-YE5M-PVC	5 m length, PVC jacket
V1-G-YE2M-PUR	2 m length, PUR jacket
V1-G-YE5M-PUR	5 m length, PUR jacket

4-Pin Right Angle "Micro" (M12)	
Model	Description
V1-W-YE2M-PVC	2 m length, PVC jacket
V1-W-YE5M-PVC	5 m length, PVC jacket
V1-W-YE2M-PUR	2 m length, PUR jacket
V1-W-YE5M-PUR	5 m length, PUR jacket

See pages 803-854 for complete cordset listing.