

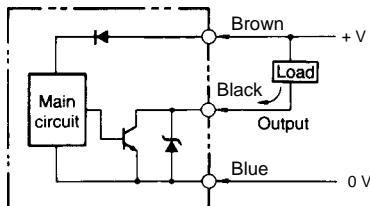
■ SHIELDED, METAL BODY SENSORS

Part number		TL-W5E□□	TL-W5F□
Sensor type		Inductive	
Body	Size	Flat, rectangular	
	Type	Shielded	
Supply voltage		10 to 30 VDC, maximum ripple 10% peak-to-peak	
Current consumption		15 mA max. at 24 VDC	
Detectable object type		Metal objects	
Effective maximum detecting distance (with standard object)		0 to 4 mm (0 to 0.16 in)	
Standard target size (mild steel, LxWxH)		18 x 18 x 1 mm (0.71 x 0.71 x 0.04 in)	
Differential travel		10% max. at effective maximum detecting distance	
Control output	DC solid-state	Type	NPN-NO (TL-W5E1) with pull-up resistor NPN-NC (TL-W5E2) with pull-up resistor PNP-NO (TL-W5F1) with pull-down resistor PNP-NC (TL-W5F2) with pull-down resistor
		Max. load	200 mA max.
		Max. on-state voltage drop	2.0 V max.
Response frequency		300 Hz	
Circuit protection	Output short-circuit	Not provided	
	DC power supply reverse polarity	Provided	
Indicators		Target present (red LED)	
Materials	Housing	Diecast aluminum	
	Sensing face	Plastic (ABS)	
	Cable sheath	Oil-proof vinyl	
Mounting		Bottom surface with 2 through holes	
Connections	Prewired	3-conductor cable, 2 m (6.56 ft) length	
Weight with cable		70 g (2.5 oz.)	
Enclosure ratings	UL	—	
	NEMA	1, 2, 3, 4X, 6, 12, 13	
	IEC 144	IP67	
Approvals	UL	—	
	CSA	—	
Ambient operating temperature		-25° to 70°C (-13° to 158°F)	
Vibration		10 to 55 Hz, at 1.5 mm in X, Y, and Z directions, double amplitude for 2 hours	
Shock		Approx. 50 G, three hours	

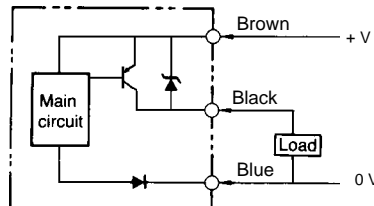
## Operation

■ OUTPUT CIRCUIT DIAGRAMS

NPN Output TL-W□MC□

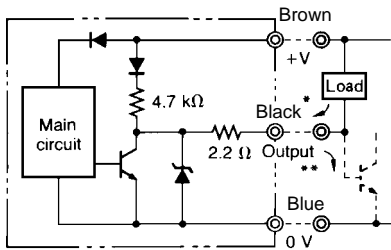


PNP Output TL-W□MB□



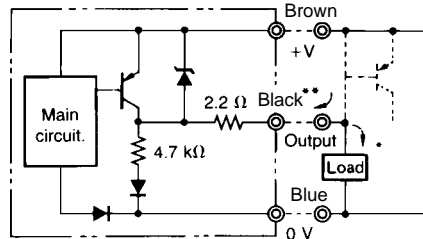
OUTPUT CIRCUIT DIAGRAMS (continued)

NPN Output TL-W5E□, TL-W20ME□



\* 200 mA max. (load current)  
\*\* When a transistor is connected

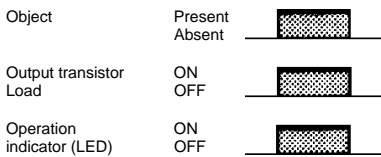
PNP Output TL-W5F□



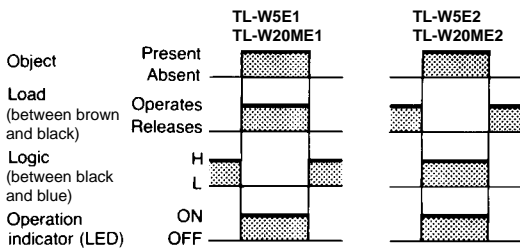
\* 200 mA max. (load current)  
\*\* When a transistor is connected

■ TIMING CHARTS

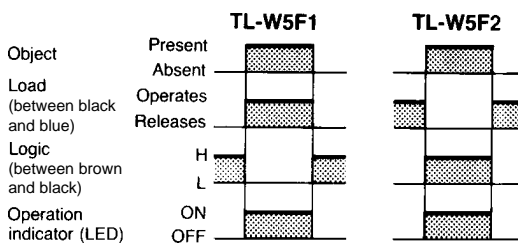
TL-W3M, TL-W5M



NPN Output TL-W5E□, TL-W20ME□



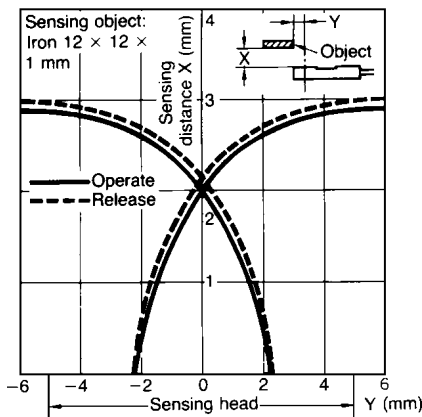
PNP Output TL-W5F□



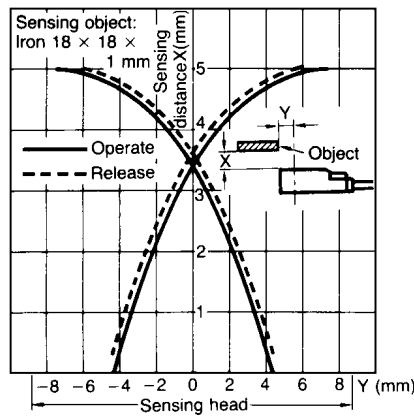
Engineering Data

■ OPERATING RANGE

TL-W3M□



TL-W5M□



TL-W5□□

