Technical Information

PROXIMITY SENSOR BENCH TEST

The purpose of this technical information document is to inform service technician personnel on the bench test procedure for proximity sensors used on Mayco LS-series concrete pumps. The procedure involves manually applying power and ground to the sensor and using a test light with an L.E.D. indicator lamp for checking the output ground circuit's operation while using a metallic object for activating/checking the sensor's proximity sensitivity.

PROXIMITY SENSOR IF5864 PART #EM98163 (SPECIFICATIONS)

Electrical design	DC NPN	Current consumption [mA]	< 15(24 V)
Output	Normally open	Real sensing range [mm]	4 ± 10 %
Operating voltage [V]	10…36 DC	Operating distance [mm]	0… 3.25 (0.127")
Current rating [mA]	250	Switching frequency [Hz]	400
Short-circuit protection	Yes (non-latching)	Operating temperature [°C]	-25…80
Reverse polarity protection	Yes	Function display switching status LED	Red
Overload protection	Yes		
Voltage drop [V]	< 2.5		
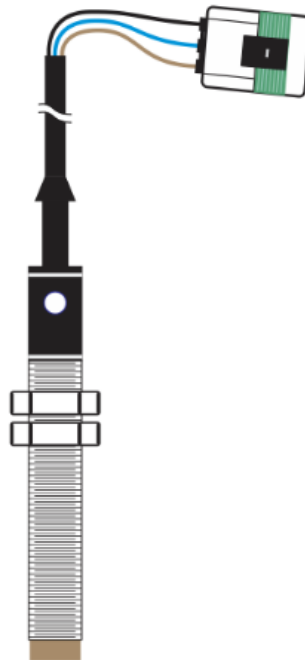
Note: **Using a test light with an incandescent type bulb will overload the sensor's output ground circuit if its amp rating is unknown and over this circuit's capacity of 250 mA. This would cause the sensor's overload protection to engage causing the sensor's function display switching status L.E.D. to be disabled.**

Technical Information

Product Group: CONCRETE

Model: LS-series Mayco

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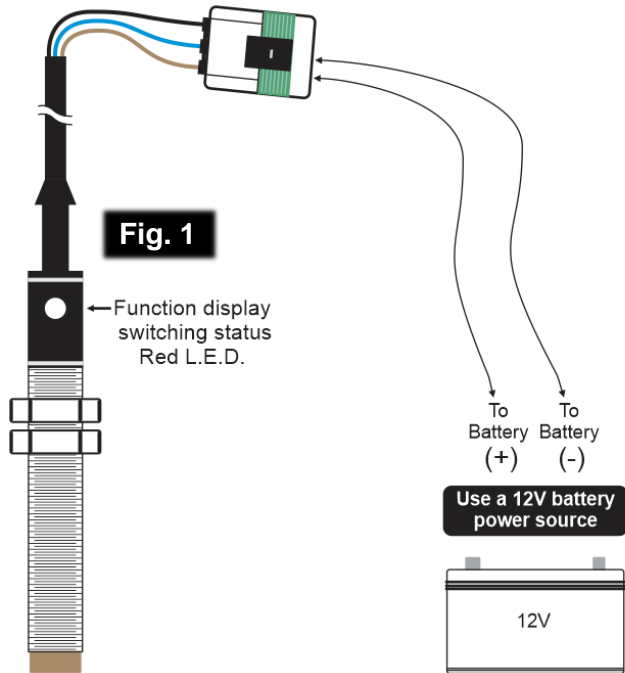
PROXIMITY SENSOR BENCH TEST

INSTRUCTIONS

INITIAL SETUP FOR TESTING

STEP 1 (Ref. Fig. 1):
a) Use a 12V battery power source for testing.
b) Connect the Brown proximity sensor wire to battery (+) with a jumper wire.
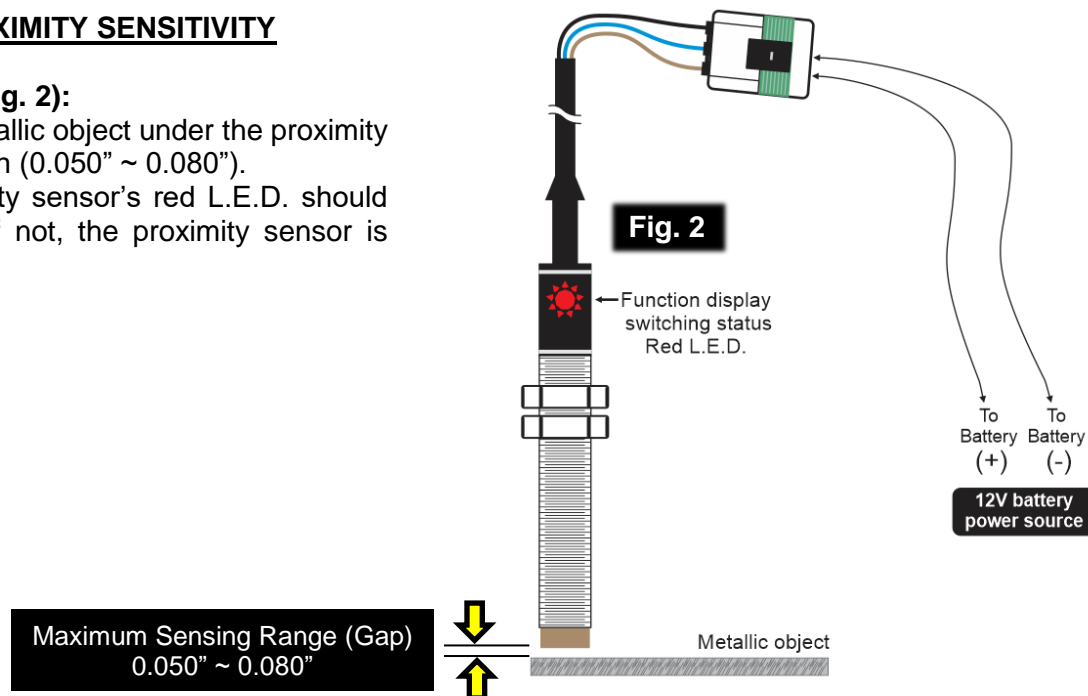c) Connect the Blue proximity sensor wire to battery (-) with a jumper wire.

Note: The proximity sensor's red L.E.D. should not illuminate, if it does, the proximity sensor is faulty.

Fig. 1

← Function display switching status Red L.E.D.

To Battery (+)   To Battery (-)

Use a 12V battery power source

12V

TESTING PROXIMITY SENSITIVITY

STEP 2 (Ref. Fig. 2):
a) Place a metallic object under the proximity sensor within (0.050" ~ 0.080").
b) The proximity sensor's red L.E.D. should illuminate, if not, the proximity sensor is faulty.

Fig. 2

← Function display switching status Red L.E.D.

To Battery (+)   To Battery (-)

12V battery power source

Maximum Sensing Range (Gap) 0.050" ~ 0.080"

Metallic object

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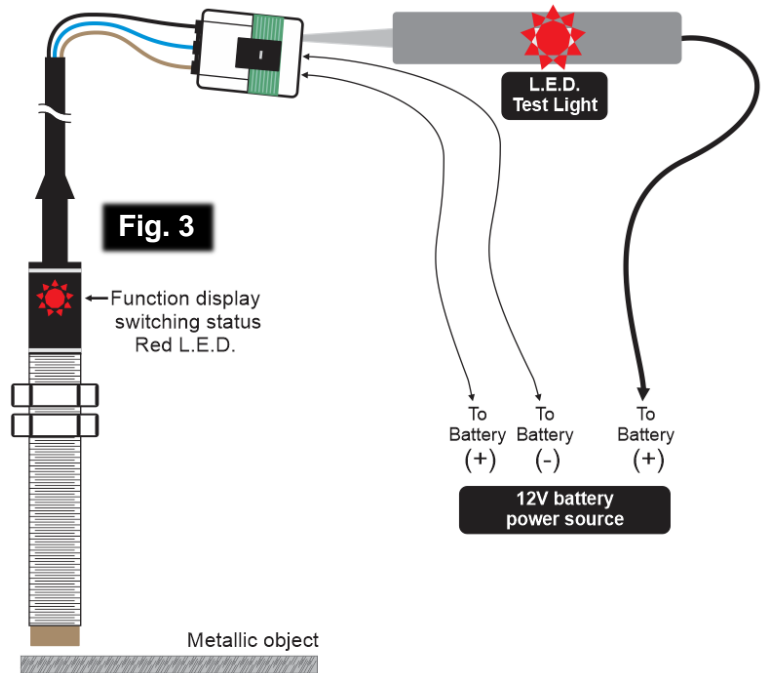
INSTRUCTIONS

TESTING GROUND SWITCH

STEP 3 (Ref. Fig. 3):
a) While performing step 2.
b) Connect a test light that has an LED lamp to battery + and touch the probe to the proximity sensor's black wire connector.
c) The test light's LED should illuminate simultaneously with the proximity sensor's red L.E.D.

Note: If both L.E.D.'s do not illuminate simultaneously then the proximity sensor is faulty.
Note: A test light with an LED lamp must be used. A test light with an incandescent lamp will overload the ground switch temporarily disabling it.
Note: Alternate test method with a volt/ohm meter: Set to DC voltage, black lead to battery (-), red lead to proximity sensor's black wire connector = .7V

Fig. 3

Function display switching status Red L.E.D.

L.E.D. Test Light

To Battery (+) To Battery (-) To Battery (+)

12V battery power source

Metallic object

TESTING GROUND SWITCH

STEP 4 (Ref. Fig. 4):
a) While performing step 3.
b) Remove the metallic object from under the proximity sensor.
c) The test light's LED should turn OFF simultaneously with the proximity sensor's red L.E.D.

Note: If both L.E.D.'s do not turn OFF then the proximity sensor is faulty.
Note: Alternate test method with a volt/ohm meter: Set to DC voltage, black lead to battery (-), red lead to proximity sensor's black wire connector = 2.5~3V.

Fig. 4

Function display switching status Red L.E.D.

To Battery (+) To Battery (-) To Battery (+)

12V battery power source

Metallic object