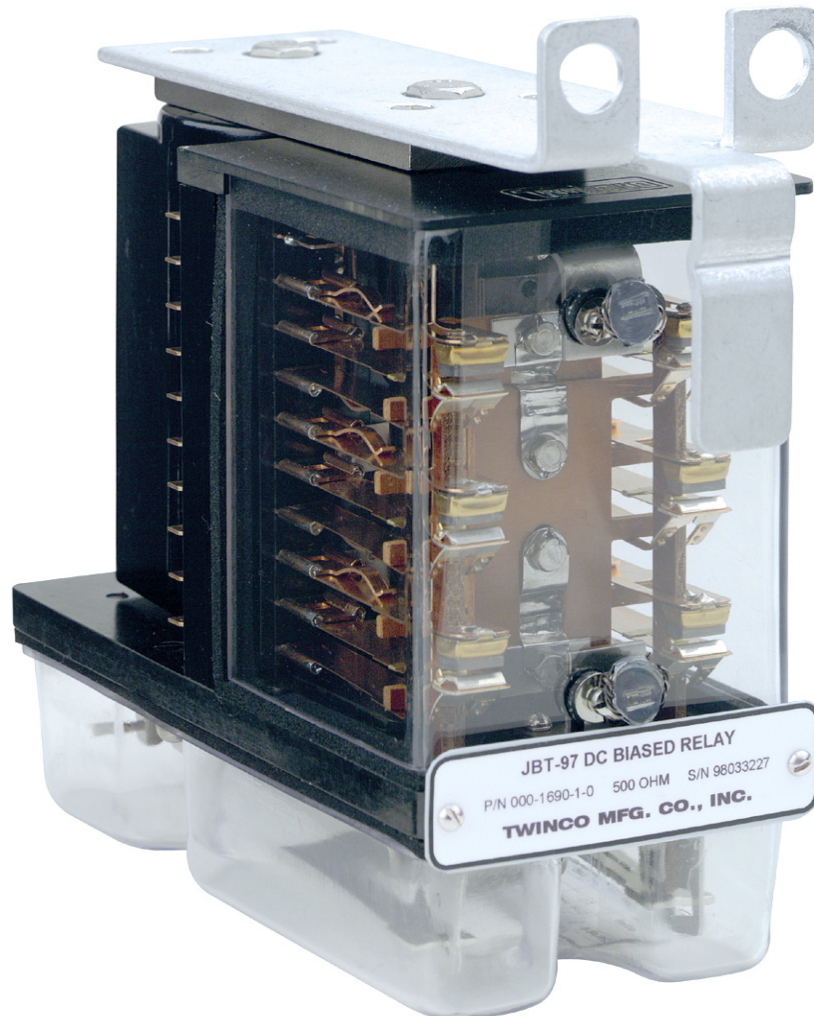




## JBT-97 VITAL PLUG-IN RELAY

- For Railroad or Transit Applications, Wayside or Car Carried
- Wide Selection of Coil Resistance & Contact Configurations
- Front or Rear Serviceable
- Compatible with the PD-1 Relay



Certificate # 2380/00

PDS 1069-00 C

1 of 4

**TWINCO MFG. CO., INC.**

30 Commerce Dr., Hauppauge, NY 11788-3904

Ph 800-854-2338

Fx 631-231-0314

<http://www.twincomfg.com>

## GENERAL DESCRIPTION

Twinco JBT-97 relays are designed to meet the special needs of vital circuits employed in railroad and transit signal systems. A plug-in design allows for close mounting of relays as well as ease of service. The JBT-97 relays meet all applicable AREMA recommended specifications for vital relays.

Integral to the plug coupler is a unique registration coding that is designed to match each specific type of relay. Each relay has a corresponding arrangement of indexing pins to ensure insertion of the proper relay for each circuit function.

The plug coupler contacts are designed to ensure a low resistance contact with the relay contact points. Wire termination to the plug coupler is accomplished with standard commercially available "Faston" plug connectors. The plug connectors can be either soldered or crimped to the wire and are available with or without a locking feature. Up to two connections may be made to each contact.

The relay is built on a specially designed fiberglass reinforced, thermal treated base plate. The magnetic structure of the relay is mounted directly on this base plate. It is made from high quality, nickel plated, non-aging silicon iron. A heavy armature provides for positive and consistent drop away characteristics. The magnetic air gap between the armature and corepins is protected by a separate clear polycarbonate cover. This ensures the air gap is not disturbed when the relay's contacts or coil are being replaced, adjusted or measured.

The contact finger and springs are manufactured from grade A spring tempered phosphorus bronze. The fingers are molded into a phenolic block. Each individual contact spring is pushed on and soldered to the contact block fingers. A bronze bearing is employed to connect the heel spring to the contact driver rod, thus ensuring a proper contact wiping action. The heel and back contact tips are swaged from pure fine silver. Low voltage front contacts are made from silver impregnated carbon material. Heavy duty contacts are silver to silver. A second independent clear polycarbonate cover is used to protect the contact arrangement from dust, moisture, or tampering. Please consult the factory for other special contact requirements.

The relay's operating coil is a one piece totally encapsulated molded part. It can be easily replaced without disturbing the armatures' magnetic air gap or the calibration

## ORDERING INFORMATION

JBT-97 Ordinary Acting DC Track Relay								
Twinco P/N	Contacts						Nominal Resistance (Ohms)	Max. PU & Working Current (Amps)
	Low Voltage			Heavy Duty				
	FB	F	B	FB	F	B		
000-1889-1-X*	-	-	-	-	6	-	2	0.1870
000-1889-2-X**	-	6	-	-	-	6	2	0.1870
000-1889-3-X**	6	-	-	-	-	-	2	0.1870

\* Neutral Relay

\*\* Biased Neutral Relay

JBT-97 Ordinary Acting Biased Neutral DC Line Relay								
Twinco P/N	Contacts						Nominal Resistance (Ohms)	Max. PU & Working Current (Amps)
	Low Voltage			Heavy Duty				
	FB	F	B	FB	F	B		
000-1890-1-X	6	-	-	-	-	-	125	0.0308
000-1890-2-X	2	4	2	-	-	-	125	0.0280
000-1891-1-X	6	-	-	-	-	-	200	0.0260
000-1690-2-X	2	4	2	-	-	-	500	0.0143
000-1690-1-X	6	-	-	-	-	-	500	0.0143
000-1690-3-X	-	6	-	-	-	6	500	0.0143
000-1690-4-X***	6	-	-	-	-	-	500	0.0143
000-1887-1-X	6	-	-	-	-	-	800	0.0110
000-1887-2-X	2	4	2	-	-	-	800	0.0110
000-1888-1-X****	2	4	2	-	-	-	3500	0.0053
000-1888-2-X****	2	4	2	-	-	-	3500	0.0053
000-1888-3-X	6	-	-	-	-	-	3500	0.0053
000-1888-4-X	-	-	-	6	-	-	3500	0.0053

\*\*\* 2K arc suppressor connected externally

\*\*\*\* 12K arc suppressor connected externally

JBT-97 Slow Pick-Up, Slow Release DC Line Relay								
Twinco P/N	Contacts						Nominal Resistance (Ohms)	Max. PU & Working Current (Amps)
	Low Voltage			Heavy Duty				
	FB	F	B	FB	F	B		
000-1847-1-X*	4	-	-	-	-	-	164	0.0244
000-1847-2-X*	2	-	-	-	-	-	164	0.0244
000-1847-3-X*	4	-	-	-	-	-	200	0.0250

\* Biased Neutral Relay

JBT-97 Slow Pick-Up DC Line Relay								
Twinco P/N	Contacts						Nominal Resistance (Ohms)	Max. PU & Working Current (Amps)
	Low Voltage			Heavy Duty				
	FB	F	B	FB	F	B		
000-1848-1-X*	6	-	-	-	-	-	120	0.0750
000-1848-3-X*	4	-	-	-	-	-	200	0.0450
000-1849-1-X**	2	-	-	-	-	-	200	0.0330
000-1849-2-X**	4	-	-	-	-	-	200	0.0468

\* Biased Neutral Relay

\*\* Neutral Relay

JBT-97 Slow Release DC Line Relay								
Twinco P/N	Contacts						Nominal Resistance (Ohms)	Max. PU & Working Current (Amps)
	Low Voltage			Heavy Duty				
	FB	F	B	FB	F	B		
000-1850-1-X*	4	-	-	-	-	-	200	0.0350
000-1850-3-X*	6	-	-	-	-	-	200	0.0390
000-1851-1-X**	6	-	-	-	-	-	200	0.0360
000-1851-2-X**	-	-	-	6	-	-	200	0.0360
000-1851-3-X**	4	-	-	-	-	-	200	0.0330
000-1851-4-X**	-	-	-	4	-	-	200	0.0330
000-1851-5-X**	4	-	-	2	-	-	200	0.0330

\* Biased Neutral Relay

\*\* Neutral Relay

Use Letter X of part number to designate mounting according to the following:

- 1 for Front Service arrangement
- 2 for Rear Service arrangement
- 3 for Shelf Mounting
- 4 for Train Carried