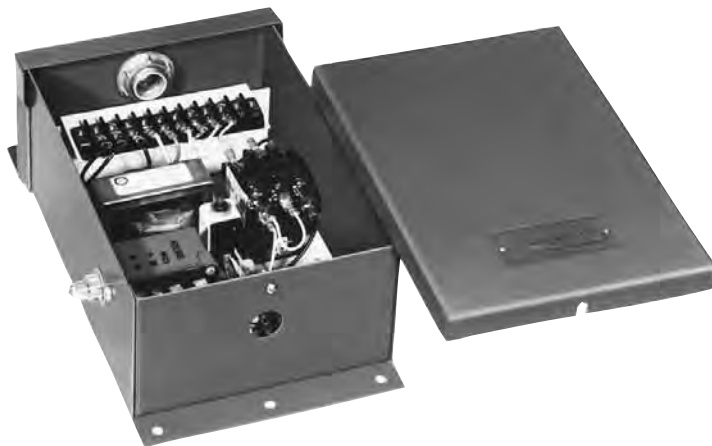


# Transformer Relay Assemblies



## TR Series by MURPHYMATIC®

- Electric Motor Controllers
- Use in Conjunction with Murphy SWICHGAGE® for:
- Electric Motor Start and Stop
- Emergency Shutdown and Time Delay
- Low Voltage Control of Magnetic Motor Starters Utilizing a Low 24 Volt Pilot Circuit



### Description

The Murphy TR Series, Transformer Relay Assemblies are electric motor controllers. Models are available for emergency shutdown, start and stop only, start and stop with emergency shutdown, and combinations of the above models with time delay.

All TR Series internal control circuits are completely prewired and relays are plug in type to facilitate field servicing.

NEMA 1 enclosure is standard on all TR Series models. NEMA 3 weatherproof enclosure, and "LC" Less Case versions are optional.

Murphy SWICHGAGE® instruments for pressure, temperature, level etc., can be used with the TR's for semiautomatic or totally unattended operation and control of your electric motor powered equipment.

### Controls up to 480 Volts

A set of normally open, dry relay contacts controlled by a 24 VAC relay coil, controls the magnetic motor starter holding coil up to 480 volts. The high voltage contacts are completely isolated from the low voltage control to help reduce electrical hazards.

### Features

- Heavy-duty transformer with multiple primary taps for easy connection to most any available AC power sources.
- 24 VAC low Voltage secondary control circuit with terminals for remote auxiliary switches.
- Plug-in relays have three SPDT silver cadmium oxide contacts providing long life reliability.
- Power relay has extra heavy silver cadmium oxide contacts rated 10 amp, 480 VAC.
- When TR is used with a Murphy Analog SWICHGAGE®, it allows for visual reading of operating conditions, and provides an adjustable differential between high and low settings throughout the SWICHGAGE® dial range.

### Applications

The TR Series transformer relay assemblies are ideal for controlling a variety of electric motor driven applications. They are recommended for use on salt water disposal systems, waterflood systems, and many others. A Model TR-1762 used in conjunction with a model OPLHC Tank Level Controller, and an OPLC Series discharge pressure can completely automate a salt water disposal pump.

### Specifications

**Transformer:** Primary (power supply) with triple taps for 120/240/480 VAC. 50/60 Hz. Secondary (control supply) 24 VAC. Power Rating: 25 VA.

#### Terminal Blocks:

High Voltage rated at 30 A, 600 V.  
Low Voltage rated at 20 A, 300 V.

#### Control Relays:

Plug-in, 120 V, 10 A contact rating.

#### Contacts:

Power (holding): 10 A, 480 VAC, SPST.  
Control (auxiliary): 480 VAC, 690 VA pilot duty.

#### Conduit:

Top: 3/4 in. hub; Bottom 1/2 in. hole.

#### Approximated Shipping Dimensions:

NEMA 1; NEMA 3; and "LC" Less Case:  
15 x 15 x 7 in. (381 x 381 x 178 mm).

#### Approximated Shipping Weight:

NEMA 1: 18 lb. (8.16 kg.).  
NEMA 3: 22 lb. (10 kg.).  
"LC" Less Case: 14 lb. (6.35 kg.).

# TR Assemblies

## Models and Functions

TR7207 — Used for emergency shutdown of electric motors driven equipment which are manually started.

TATTLETALE® indicates shutdown and locks out power until the malfunction is corrected and the TATTLETALE® is reset. A momentary power failure during shutdown will not void the lockout feature. For use with standard, normally open, one-wire to ground Murphy SWICHGAGE® instruments.

TR7208 — Same as TR7207 except used with normally closed, ungrounded SWICHGAGE® instruments which open for shutdown.

TR9193 — Same as TR7207 with adjustable time delay, which locks out shutdown functions for up to 10 minutes, to allow pressures and temperatures to reach normal range after start-up.

TR1760 — Used with electric motors or driven equipment which is started and stopped from a remote, normally open SWICHGAGE®.

TR1761 — Includes the same features as the TR1760 plus provisions for operating remote panel lights or audible alarms. Also includes emergency shutdown and lockout from a remote, normally open, one wire to ground SWICHGAGE®.

TR1762 — Same as TR1761 with adjustable time delay lockout of shutdown functions, for up to 10 minutes, during start-up.

**NOTE:** TR1760, TR1761, and TR1762 comply with National Electrical code 1975, Article 430-73.

Some models have been discontinued and replaced by other models:

Discontinued	Replacement
TR-5171.....	TR1760
TR-7159.....	TR1761
TR-9195.....	TR1762

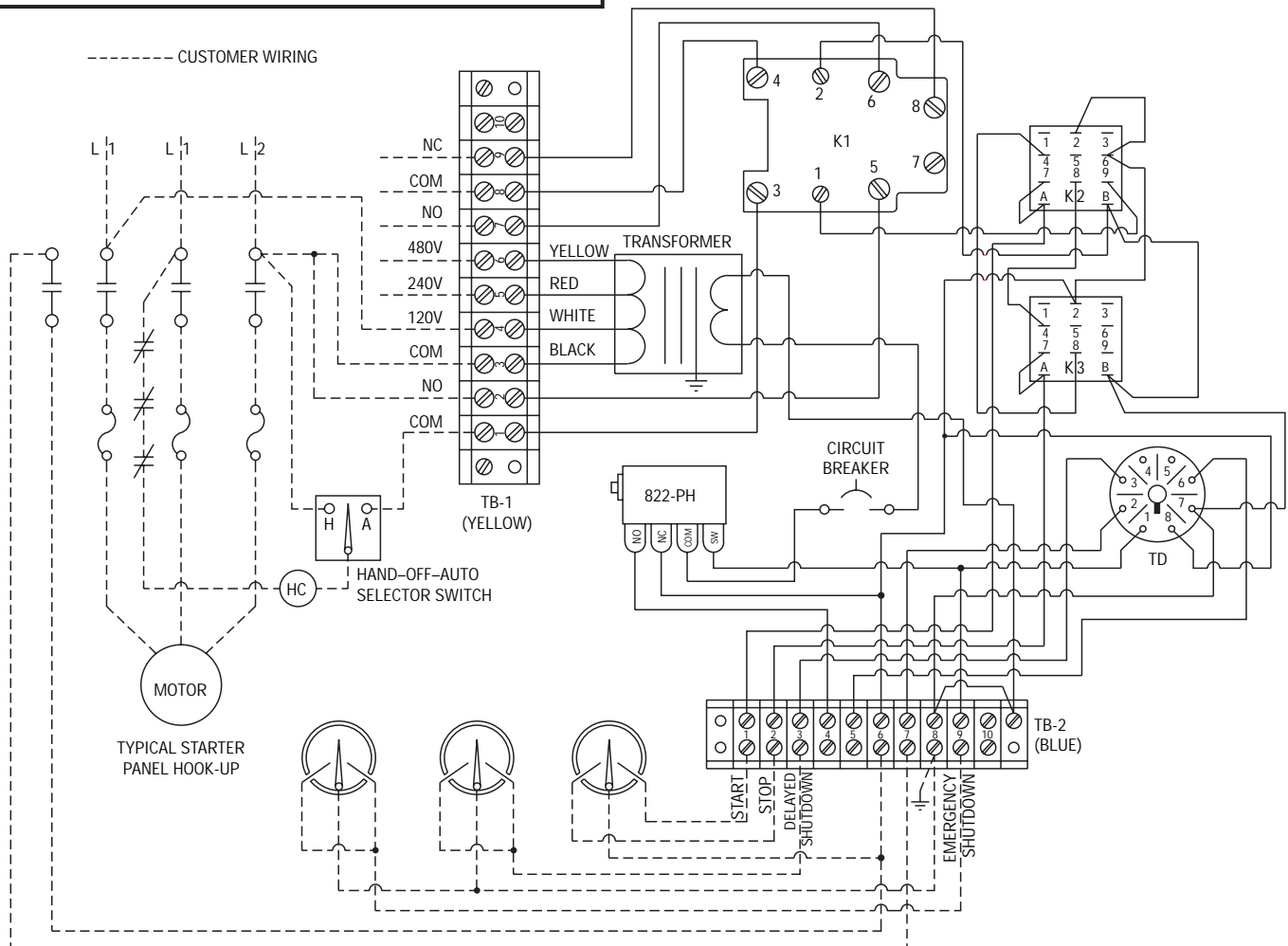
To Order TR Assemblies Use  
The Appropriate Model Number

## WARNING

**Before beginning installation of this Murphy product:**

- ✓ **Disconnect ALL electrical power to the machine.**
- ✓ **Make sure the machine CANNOT operate during installation.**
- ✓ **Follow all safety warnings of the machine manufacturer.**

## TR1762





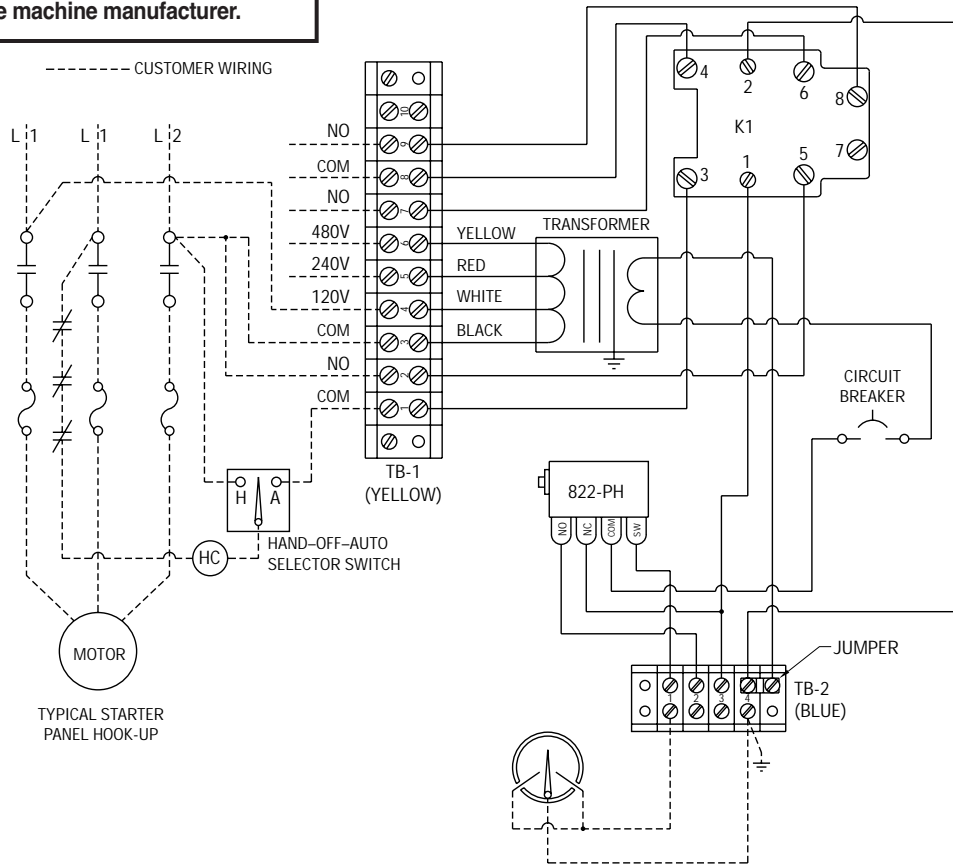
# WARNING



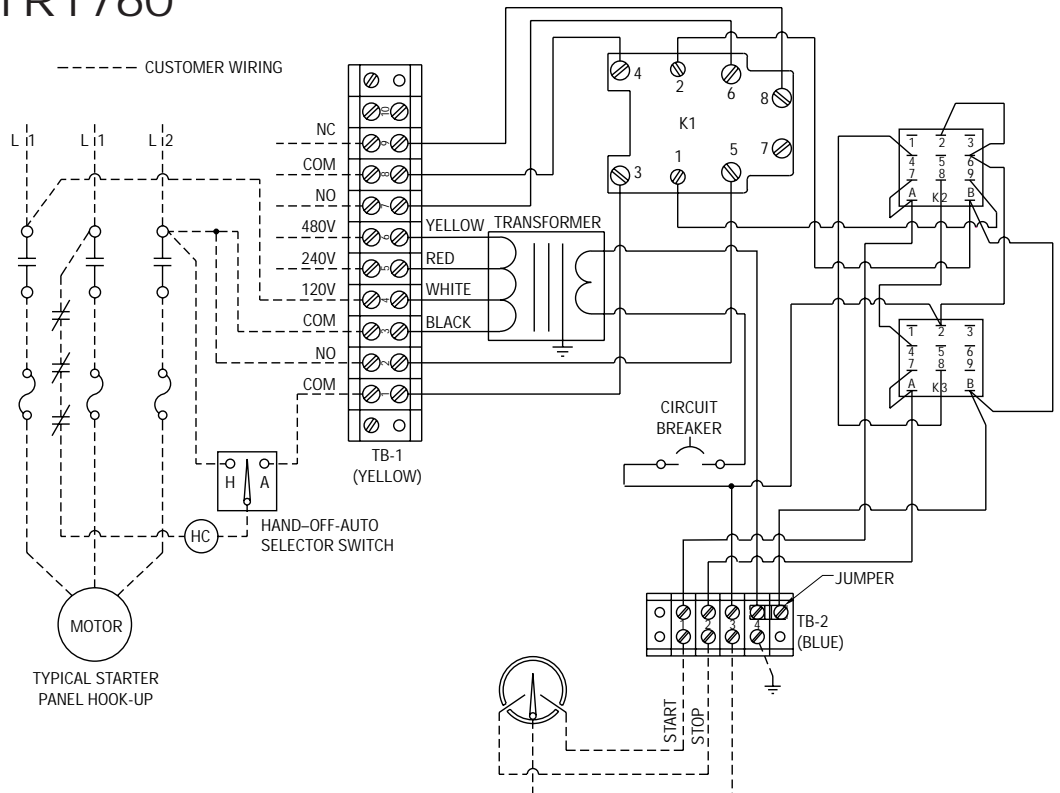
Before beginning installation of this Murphy product:

- ✓ Disconnect ALL electrical power to the machine.
- ✓ Make sure the machine CANNOT operate during installation.
- ✓ Follow all safety warnings of the machine manufacturer.

## TR7207



## TR1760





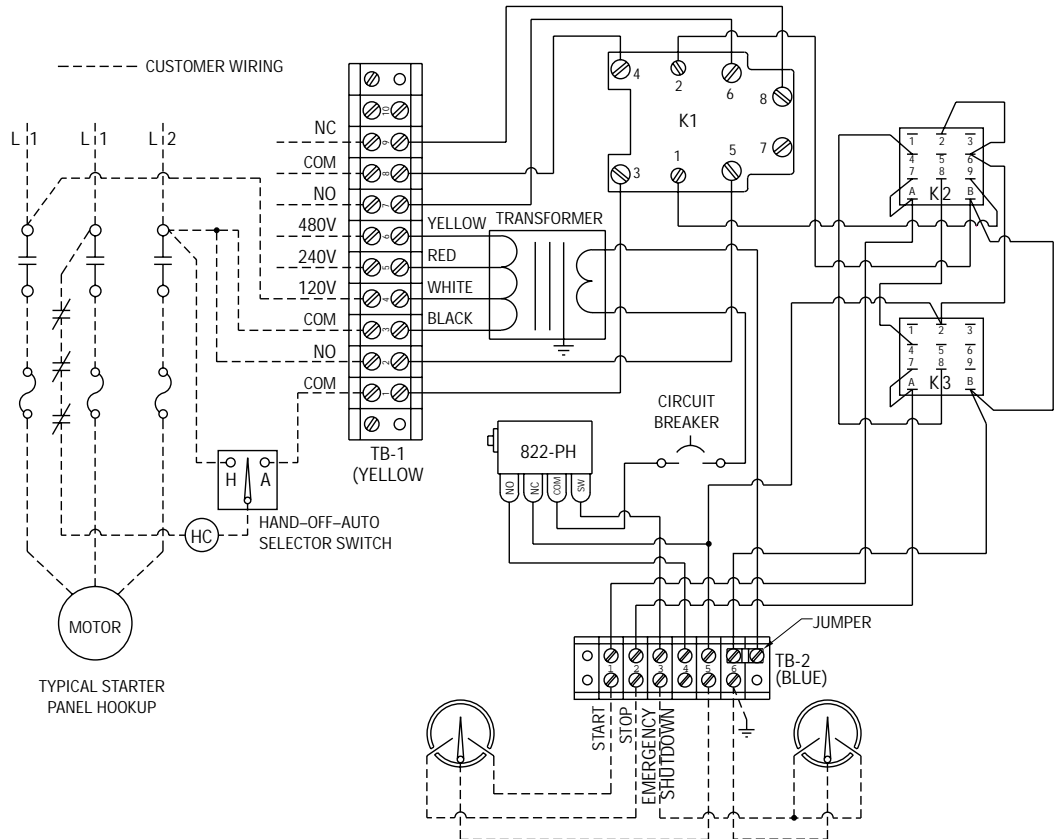
# WARNING



Before beginning installation of this Murphy product:

- ✓ Disconnect ALL electrical power to the machine.
- ✓ Make sure the machine CANNOT operate during installation.
- ✓ Follow all safety warnings of the machine manufacturer.

## TR1761



## Warranty

A limited warranty on materials and workmanship is given with this FW Murphy product.  
 A copy of the warranty may be viewed or printed by going to [www.fwmurphy.com/support/warranty.htm](http://www.fwmurphy.com/support/warranty.htm)



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