



INSTALLATION INSTRUCTIONS

TE681 SERIES

TIME DELAY RELAYS

December 2025

901-0000-369



Potentially hazardous voltages are present. Electrical shock can cause death or serious injury. Installation should be done by qualified personnel following all National, State & Local Codes.
Présence de tensions potentiellement dangereuses. Une décharge électrique peut causer la mort ou des blessures graves. L'installation devrait être effectuée par du personnel qualifié suivant tous les codes nationaux, provinciaux et locaux.



BE SURE TO REMOVE ALL POWER SUPPLYING THIS EQUIPMENT BEFORE CONNECTING OR DISCONNECTING WIRING. READ INSTRUCTIONS BEFORE INSTALLING OR OPERATING THIS DEVICE. KEEP FOR FUTURE REFERENCE.

Installation and Wiring:

- Mount the TE681 Series product on 35mm DIN Rail. Hook the fixed (upper) DIN clip of the TE681 series product over the edge of the DIN rail and rotate the product toward the rail applying pressure to snap the lower DIN clip over the rail edge, securing the product to the rail.
- Connect wiring to the product according to the wiring diagram on the side of the product or per the proper wiring diagram on page 2 of this sheet. Use 14-22 AWG solid or stranded copper wire with a terminal tightening torque of 4 in-lbs.

Setting the Time Delay(s):

- TE681 Series products have three blue dials on the front face. A 1/8" (3mm) flat-blade(slotted) or Phillips screwdriver is recommended for dial rotation. Set the first dial to select one time range from the options shown in figure 3. Set the second dial to choose a multiplier from 0.1 to 1. Example: Selecting a multiplier of 0.5 and a time range marked 10s will result in a delay of 5 seconds. Please note that the dial markings are for reference only and may not be exact.

Setting the Function

- Set the third dial to choose a desired function based on the side label or figure 1 on page 2 of this sheet. Example: Setting this dial to "A" will select the On Delay function. The function can only be changed while the TE681 series product has control voltage removed.
- For details on how each time delay relay function operates, please see figure 1 on page 2 of this sheet. For more detailed descriptions, please see <https://macromatic.com/support/knowledge-base-articles/understanding-time-delay-relay-functions/>.

Installation Considerations:

- When installing TE681 series products immediately next to other DIN rail devices with no spacing between devices, thermal energy from the surrounding devices should be considered. Heat from nearby devices can increase the surrounding air temperature significantly. If the installation environment temperature is already high and/or the contact current is significant, derating or spacing may be needed to ensure reliable operation. Although each installation is unique, manufacturer recommendations and derating tables are provided below for guidance.

Suggested Derating Factor for Contact Ratings

Surrounding Air Temperature	25°C	40°C	50°C	55°C	60°C	65°C
0MM Spacing	None	0.8	0.3	-	-	-
5MM Spacing	None	None	None	None	0.5	0.3
10MM Spacing	None	None	None	None	None	None

Notes:

- Spacing is the distance between the TE681 series product and the next closest DIN rail devices on the same DIN rail.
- The surrounding air temperature is the highest air temperature immediately surrounding the device.

Troubleshooting

- Check that all connections are correct per the connection diagram on the product. For DC Input Voltages, make sure the polarity matches the connection diagram, with positive voltage connected to terminal A1. If problems continue, contact us at www.macromatic.com/contact for more information.
- For products that use a Trigger to initiate the timing function, a dry-type contact is recommended. Using a solid-state switch is acceptable. See www.macromatic.com/leakage or contact Macromatic for information regarding leakage currents limits and other solid state design considerations. Make sure the trigger switch is connected between A1 and S terminals as shown in the wiring diagram.

Specification

Timing Characteristics	
Maximum Setting (Adjustable)	+5%, -0%
Minimum Setting (Adjustable)	+0%, -50%
Repeat Accuracy	±0.1% or ±0.05 Seconds, whichever is greater
Reset Time (Maximum)	Control Voltage: 0.1 Seconds Triggered functions only: 0.04 Seconds
Start-up Time (Maximum)	Time from when power is applied until unit is timing: 0.05 Seconds
Maintain Function Time (Maximum)	Time unit continues to operate after power is removed: 0.01 Seconds
Trigger Switch Closure Time	Minimum required trigger switch closure time: 0.05 Seconds

Input Characteristics	
Control Voltage Range (V)	24-240VAC 50/60Hz, 12-240VDC
Voltage Tolerance (% of V)	85% to 110%
Maximum Consumption (Burden)	5VA (AC) and 1W (DC)

Output Characteristics	
Number and type of contacts	SPDT or DPDT
Contact Material	AgSnO2In
Contact Ratings	10A @ 250V AC, 8A @ 30V DC

LED Indication	
Solid Green	Control Voltage Applied
Flashing Green	Time Delay Active
Red LED ON	Relay Energized
Red LED OFF	Relay De-energized

Warranty

All catalog-listed products manufactured by Macromatic are warranted to be free from defects in workmanship or material under normal service and use for a period of five (5) years from the date of manufacture.

FIGURE 1: FUNCTION CHARTS

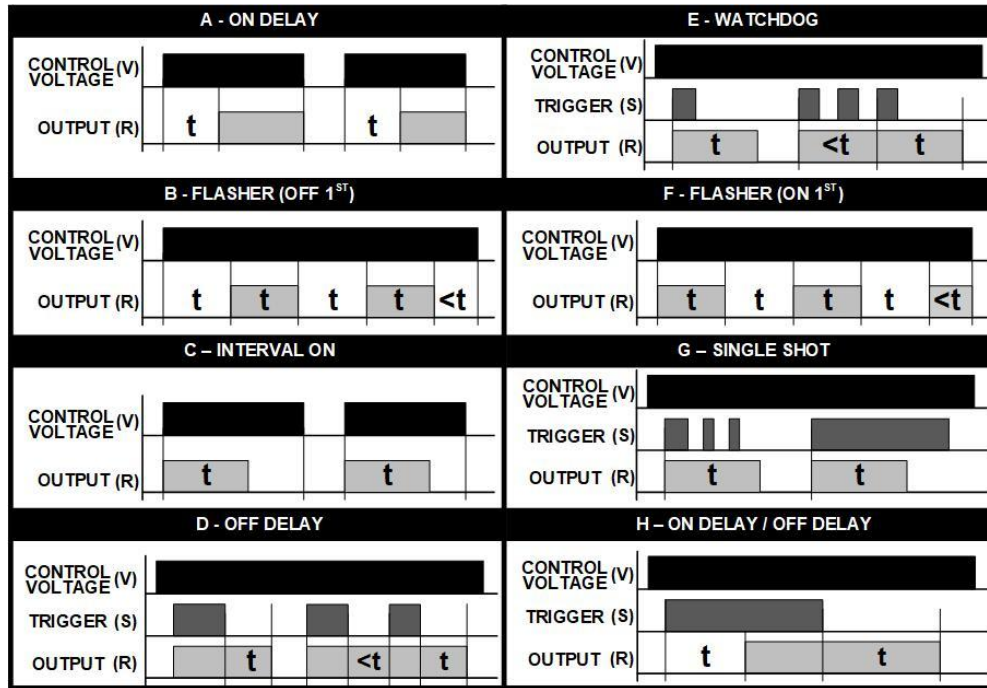


FIGURE 2: WIRING DIAGRAMS

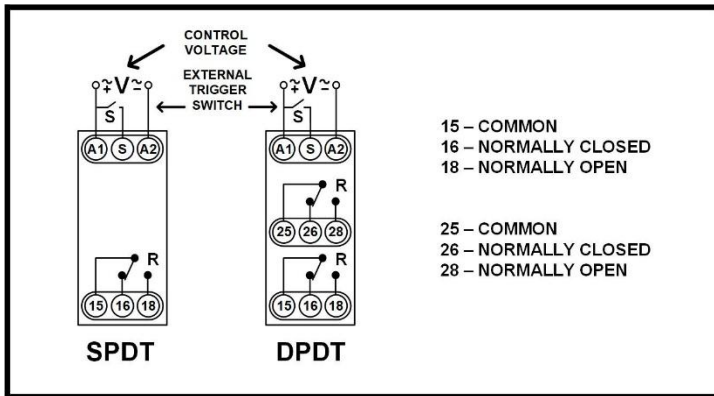


FIGURE 3: TIME RANGE SELECTION

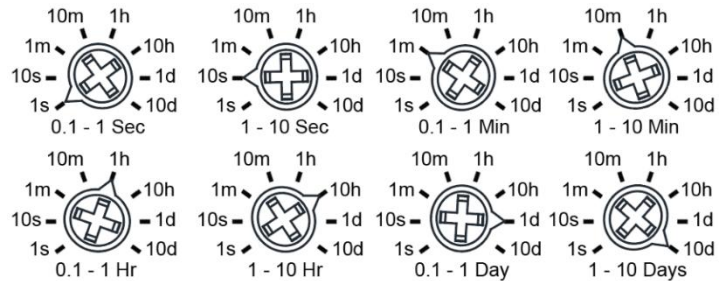


FIGURE 4: PRODUCT DIAGRAM

