

TRANSFER SWITCH CONTROLLER



TSC 80



TSC 80e

- 2 models now available - standard TSC 80 or enhanced TSC 80e controller with additional features such as LCD display and programmable outputs
- Microprocessor-based circuitry provides ultimate reliability and versatility
- Non-volatile memory retains logic and setpoints if control power is lost
- Direct 3 phase voltage sensing inputs on generator and utility supplies from 120VAC up to 600VAC (nominal)
- Self diagnostic features continuously verify processing, I/O and memory circuits
- Simplified controller design is easy to use and requires no external software programming device
- Superior EMI/RFI noise immunity and voltage surge performance as per IEEE C62.41

GENERAL DESCRIPTION

The Thomson Technology **TSC 80/TSC 80e Transfer Switch Controller** utilizes the latest advancements in microprocessor technology, printed circuit board assembly and software for control of automatic transfer switches. The **TSC 80 / TSC 80e** is the second generation of microprocessor-based transfer switch controllers from Thomson Technology, and reflects over 30 years of transfer switch control experience. The **TSC 80 / TSC 80e** is factory configured to monitor, display and control all operational functions of the automatic transfer switch. All voltage sensors and timers are fully user adjustable utilizing potentiometers, which requires no software programming. The microprocessor design provides high accuracy for all voltage sensing and timing functions as well as providing many standard features.

The **TSC 80** Transfer Switch Controller is available in 2 basic model types - **TSC 80** Standard and **TSC 80e** Enhanced Transfer controller. The **TSC 80e** Enhanced Transfer Controller includes all of the features available in the standard **TSC 80** plus additional features such as LCD display, five programmable outputs, front programming buttons, data logging with real time clock, integrated Load Disconnect control and programmable exercise timer.

TSC 80 STANDARD CONTROL FEATURES

- Utility & Generator AC voltage sensing (true RMS) – 120-600V single phase or 3 phase
- Generator AC frequency sensing
- Utility under voltage control setpoint 70 - 95% (adjustable)
- Generator under voltage control setpoint 70 - 95% (adjustable)
- Generator under frequency control setpoint 70 - 90% (adjustable)
- Engine warm-up timer 0-60 sec. (adjustable)
- Utility return timer 0-30 min. (adjustable)
- Engine start timer 0-60 sec. (adjustable)
- Engine cooldown timer 0-30 min. (adjustable)
- Neutral position delay timer 0-60 sec. (adjustable)
- Eight printed circuit board mounted user adjustable potentiometers
- Lamp Test
- Local utility power fail simulation test pushbutton & LED, door mounted
- Remote utility power fail simulation test pushbutton input (via terminal block)
- Load on utility supply & load on generator supply LED's, door mounted
- Utility and generator source available LED's, door mounted
- Weekly plant exercise timer (30 min. on load) manually initiated
- Local plant exercise initiate pushbutton & LED, door mounted
- Engine start contact (10A, 120/240VAC resistive max.)
- Load on utility auxiliary contact (Qty 1 only, 10A, 120/240VAC, Form C)
- Load on generator auxiliary contact (Qty 1 only, 10A, 120/240VAC, Form C)
- Transfer fail/forced transfer logic
- 50 or 60Hz capable (115V control power)

TSC 80e STANDARD CONTROL FEATURES

- LCD Display for monitoring single or 3 Phase Utility/Generator voltage, system frequency and timer countdown operation
- Front Panel Programming using built-in faceplate mounted pushbuttons & LCD display with password security
- Utility & Generator AC Voltage sensing (true RMS) – 120-600V single or 3 phase
- Generator AC frequency sensing
- Utility under voltage control setpoint 70 - 95% (adjustable)
- Generator under voltage control setpoint 70 - 95% (adjustable)
- Generator under frequency control setpoint 70 - 90% (adjustable)
- Engine warm-up timer 0-60 sec. (adjustable)
- Utility return timer 0-30 min. (adjustable)
- Engine start timer 0-60 sec. (adjustable)
- Engine cooldown timer 0-30 min. (adjustable)
- Neutral position delay timer 0-60 sec. (adjustable)
- Pre/post transfer Load disconnect control to signal external building systems such as elevators during transfer operations
- Programmable Generator Exercise Timer (EXT) with easy to use 4 event, 7-14-21-28 Day, On-load or Off-load Programmability
- On Board Real-time clock c/w battery back-up & daylight-savings programming functionality
- Data logging of key events including total transfers to generator, total utility power failures, load on utility hours, load on generator hours and utility or generator voltage/ frequency data at time of fault
- Five user Programmable Output Contacts rated 10A, 120/240V resistive, Form C. Each output contact is individually user programmable to 10 different functions which includes: Load on Utility, Load on Gen, Load Disconnect Contact (LDC), Fail to Transfer (FTT), Utility Power Available (UPA), Generator Power Available (GPA), Utility Power Fail, Engine start, ATS Not in Auto, and ATS in Auto.
The TSC 80e Controller is supplied pre-programmed from our factory with the following outputs enabled:
 - Load on Utility
 - Load on Generator
 - Load Disconnect Contact (LDC)
 - Fail to Transfer (FTT)
 - ATS Not in Auto
- Engine start contact (10A, 120/240VAC resistive max.)
- Local utility power fail simulation test pushbutton & LED, door mounted & remote test pushbutton input (via terminal block)
- Local plant exercise initiate pushbutton & LED, door mounted
- Load on Utility & Load on Generator LED Lights
- Utility & Generator Source Available LED Lights
- Lamp test
- Automatic force transfer to alternate supply should load voltage become de-energized
- 50 or 60Hz capable (115V control power)

ADVANCED FEATURES

- 3 Phase voltage sensing on load bus, utility, and generator sources with direct input voltage up to 600VAC nominal
- Superior EMI/RFI noise immunity and voltage surge performance design features as per IEEE C62.41 requirements
- Complete 3 phase under voltage monitoring of both sources complete with user adjustable setpoints
- Automatic re-transfer to utility supply in test exercising modes should generator fail while on load
- Automatic plant exercise timer
- Automatic force transfer to alternate supply should load voltage become de-energized
- Flexible design allows user configuration to almost any system (i.e. 3 phase or single phase, system voltage, 50 or 60Hz system frequency)
- Remote Load Test/Peak Shave Input

SPECIFICATIONS

- POWER SUPPLY:
 - 115VAC, -30%, +10%
 - 50/60Hz
 - 100ma nominal
(no external load connected)
- VOLTAGE SENSING:
 - Direct 120-600VAC
 - 50/60Hz
 - +/- 1.0% accuracy of setting @ 25°C
- OPERATING TEMPERATURE:
 - -40°C to +50°C TSC 80
 - -15°C to +50°C TSC 80e
- OUTPUT CONTACTS
(Form C 10A, 120/240VAC resistive)
- OUTPUT SIGNALS 120VAC
 - Transfer to utility 10A
 - Transfer to generator 10A

NOTE: Specifications subject to change without notice.
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