THOMSON™
POWER SYSTEMS

# AUTOMATIC TRANSFER SWITCH CONTROLLER

## TSC 900

**TSC 900** Transfer Switch Controller provides the most advanced integrated technology available for use in Thomson Power Systems Automatic Transfer Switches.

**ADVANCED FEATURES:**

- Integrated controls for Open and Closed Transition Transfer Switch Applications
- Latest technology 32 bit microcontroller architecture provides fast, accurate reliable operation
- Graphical color 7" touch screen Operator Interface for easy viewing and operation
- Advanced 3 Phase Voltage Sensing using symmetrical component Algorithms for true Single Phasing Protection
- Integrated 3 Phase Power Metering
- Ethernet Remote Communication connectivity
- Integrated email and push notification services


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## GENERAL DESCRIPTION

The Thomson Power Systems TSC 900 Transfer Switch Controller utilizes the latest advancements in microcontroller technology, surface mount printed circuit board assembly and advanced programming firmware for control of Automatic Transfer Switches.

The TSC 900 is the fourth generation of microcontroller based transfer switch controllers from Thomson Power Systems and reflects over 40 years of transfer switch control experience. The TSC 900 is factory configured to monitor, display and control all operational functions of the Automatic Transfer Switch. All voltage sensing and timing functions are fully user adjustable from the door mounted color touch screen operator interface panel. The unique integrated design allows the controller to be utilized for a wide range of applications without use of external modules or optional components. The microcontroller design provides high accuracy for all voltage sensing and timing functions as well as providing many standard features.

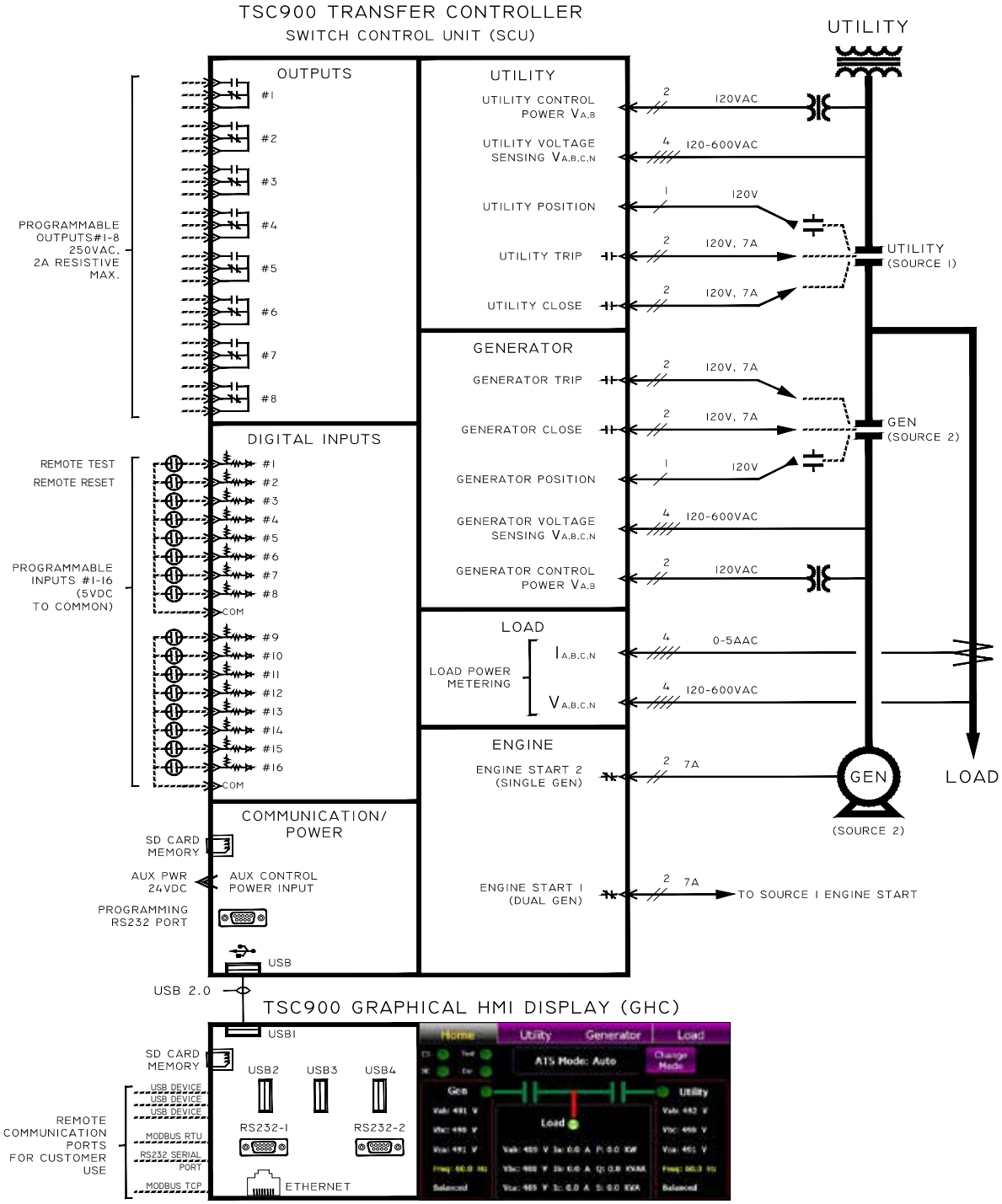
TSC 900 is a very versatile industrial communication controller implementing Modbus RTU over RS232/RS485 serial connections and Modbus TCP/IP over Ethernet. TSC 900 is also featuring a built-in email and push notification system with alerting on critical ATS status changes.

| Applications | Controller Hardware Features |
|---|---|
| • Automatic Emergency Standby ATS | • Graphical 7" WVGA (800x480) Color Touch Screen Display |
| • Open or Closed Transition Transfer Control | • Plug-In Terminal Connectors |
| • Closed Transition Fast Transfer or Soft Load Transfer Capability | • Removable SD Memory Cards |
| • Load Transfer Utilizing Neutral Delay or In-Phase Monitor | • 120 - 600V Direct 3 Phase Voltage Sensing (Gen/Utility/Load) |
| • Dual Source Utility | • 5A, 3 Phase Current Transformer Inputs for ATS Load |
| • Dual Source Generators (Master/Slave) | • 120VAC/24Vdc Control Power Input (Utility/Gen) |
| • Dual Prime Generators | • 16 Programmable Digital Inputs |
| • Service Entrance | • 8 Programmable Relay Contact Outputs (2A, 250VAC, 30Vdc) |
| • Isolation Bypass Switches | • 2 Dedicated Engine Start Contacts (7A, 30Vdc) |
| • Single Phase or 3 Phase Systems, 100A - 4000A ATS Mechanisms | • Optional Ethernet Communication Port (GHC) |
| • 120 - 600VAC 3 phase, 3 Wire/4 Wire (Auto Config. No PT Required) | • 2 RS232 Serial Communication Ports |
| • 5kV - 25kV 3 phase, 3 Wire/4 Wire (with External PT) | • 3 USB 2.0 Communication Ports |

| Control and Monitoring Features | |
|---|---|
| • Integrated 3 Phase Power Metering | • Integrated In-Phase Monitor (For fast transfer type ATS only) |
| • Voltage Sensing, True RMS, 3 Phase (Utility/Gen/Load) | • Modbus™ RTU (Serial) or TCP Communication Protocol |
| • Under Voltage/Over Voltage Protection Setpoints (Utility and Gen) | • Multi - Voltage Programmability |
| • Single Phasing Voltage Protection | • User Configurable System 3 phase 4 Wire or 3 Wire, 50/60Hz |
| • System Phase Sequence/Phase Rotation Detection | • Remote Load Test/Peak Shave Input |
| • Under/Over Frequency Protection Setpoints (Utility and Gen) | • Load Shed Programmable Output |
| • Engine Warmup Timer 0-60 min. (adjustable) | • Pre/Post Transfer Load Disconnect Control Output |
| • Utility Return Timer 0-30 min. (adjustable) | • On Board Real-Time Clock c/w Battery Back-up & Daylight Savings |
| • Neutral Position Delay Timer 0-120 sec. (adjustable) | • Event Logging (Time/Date stamped) |
| • Engine Cooldown Timer 0-60 min. (adjustable) | • Data Export via Removable SD Memory Card for PC |
| • Engine Start Timer 0-60 sec. (adjustable) | • Fail to Transfer Alarm/Forced Transfer Detection Logic |
| • Plant Exerciser Timer (Calendar Based) | • Security Password Enabled Programming Access |
| • 3 Phase Metering of Utility/Gen/Load Voltage and Frequency | • Front Panel Programming All Parameters |
| • Test & Exercise Operation Modes | • Source Available/Source Connected Status Mimic Bus |

## SPECIFICATIONS

| Performance | Certifications/Compliance |
|---|---|
| • Operating Temperature -20ºC to +55ºC (-4ºF to 131ºF) | • UL 1008/CSA 178 Emergency Rated Automatic Transfer Switches |
| • Storage Temperature -30ºC to +75ºC (-22ºF to 167ºF) | • UL 508/CSA 14 Industrial Control Equipment |
| • Voltage Sensing Accuracy +-0.5% Full Scale | • FCC CFR 47 Part 15 (Subpart B) Class A, ICES-001 Issue 4, Class A |
| • Current Sensing Accuracy +-1.0% Full Scale | • Output Contacts 2A, 250VAC, 30Vdc Resistive (max) |
| • Power Input 120VAC Nominal +10%, -30%, 50/60Hz, 24Vdc | • EN 61000 Series Electromagnetic Noise Immunity/Emissions |



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NOTE: Specifications subject to change without notice.

APPLICATION CONSIDERATIONS

The proper selection and application of power generation products and components, including the related area of product safety, is the responsibility of the customer. Operating and performance requirements and potential associated issues will vary appreciably depending upon the use and application of such products and components. The scope of the technical and application information included in this publication is necessarily limited. Unusual operating environments and conditions, and other factors can materially affect the application and operating results of the products and components and the customer should carefully review its requirements. Any technical advice or review furnished by Regal Beloit America, Inc. and its affiliates with respect to the use of products and components is given in good faith and without charge, and Regal assumes no obligation or liability for the advice given, or results obtained, all such advice and review being given and accepted at customer's risk.

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