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You can read the recommendations in the user guide, the technical guide or the installation guide for THOMSON TSC 800. You'll find the answers to all your questions on the THOMSON TSC 800 in the user manual (information, specifications, safety advice, size, accessories, etc.). Detailed instructions for use are in the User's Guide.

User manual THOMSON TSC 800
User guide THOMSON TSC 800
Operating instructions THOMSON TSC 800
Instructions for use THOMSON TSC 800
Instruction manual THOMSON TSC 800



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PRODUCT REVISION HISTORY The following information provides an historical summary of changes made to this product since the original release.

Software Version 2.2 08/08/01 2.1 06/03/27 2.0 04/12/14 1.7 02/04/01 1.6 98/12/15 1.5 N/A 1.4 98/06/15 1.3 98/01/19 1.

2 97/10/10 1.1 97/01/30 1.0 96/06/30 Enabled Clock Time Save Feature Enhanced Phase Balance Features New Features (Refer to Section 1.2) Revised Transfer Fail Features and functionality Added Remote Communication Unreleased version Updated Transfer Fail operation Updated default under/over frequency setpoints, transfer fail programmability, minor logic revisions Changed Transfer Switch fail timer to 30 seconds Upgraded Frequency setting range Original version Operating & Service Manual Version Rev 10 08/09/25 Changes for Version 2.2 TSC 800 Software. Added Information for ICS ATS Neutral delay time Minor manual revisions for Version 2.1 TSC 800 Software Rev 9 06/04/24 Production Release Enhanced phase balance features Rev 8 06/03/27 Rev 7 04/12/16 Rev 6 02/04/15 Rev 5 00/07/31 Rev 4 00/03/01 Rev 3 99/02/12 Rev 2 98/12/01 Rev 1 98/01/21 Rev 0 97/06/04 New Features (Refer to Section 1.2) Changes for Version 1.7 TSC 800 Software Added Four Position Test Switch Information General revisions Added Multi-tap information. Added Remote Communication features per version 1.

6 TSC 800 Software General Revisions for upgraded TSC 800 software Original release Contact Thomson Technology, to obtain applicable instruction manuals. Soft copy of most current version is available at www.thomsontechnology.com. PM 049 REV 10 08/09/25 1 Thomson Technology TSC 800 TRANSFER SWITCH CONTROLLER 1.

2. GENERAL DESCRIPTION The TSC 800 controller utilizes microprocessor-based design technology, which provides high accuracy for all voltage sensing and timing functions. The TSC 800 is factory configured to control all the operational functions and display features of the automatic transfer switch. All features of the TSC 800 are fully programmable from the front panel LCD display and are security password protected. The LCD display screen prompts are in plain English, providing a user-friendly operator interface with many display options available.

The microprocessor design provides many standard features, which were previously only available as add-on optional features. 2. INSTALLATION CAUTION contents subject to damage by STATIC ELECTRICITY This equipment contains static-sensitive parts. Please observe the following anti-static precautions at all times when handling this equipment. Failure to observe these precautions may cause equipment failure and/or damage. · Discharge body static charge before handling the equipment (maintain exposed body contact with a properly grounded surface while handling the equipment, a grounding wrist strap can/should also be utilized).



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· Do not touch any components on the printed circuit board with your hands or any other conductive equipment. Do not place the equipment on or near materials such as Styrofoam, plastic and vinyl. Place the equipment on properly grounded surfaces and only use an anti-static bag for transporting the equipment. 2.

1. GENERAL INFORMATION NOTE: Installations should be done in accordance with all applicable electrical regulation codes as required. PM 049 REV 10 08/09/25 2 Thomson Technology TSC 800 TRANSFER SWITCH CONTROLLER The following installation guidelines are provided for general information only pertaining to typical site installations. transfer switches that For specific site installation information, consult Thomson have been tested and proven may deviate from these Technology as required. NOTE: Factory installations of THOMSON TECHNOLOGY supplied recommendations. 2.2. NOTES TO INSTALLER If the transfer switch has programmable/multi-tap system voltage capability (refer to electrical schematic), confirm the transfer switch has been configured for the system voltage. WARNING Failure to confirm and match transfer switch voltage with the system voltage could cause serious equipment damage. If the transfer switch requires reconfiguring, the TSC 800 controller will also require reprogramming.

CAUTION!!! Qualified personnel must complete all installation and/or service work performed only. Failure to do so may cause personal injury or death. 2.3. AC VOLTAGE SENSING INPUT The TSC 800 can accept direct AC voltage sensing inputs on the generator and utility supplies from 120-600VAC (nominal). NOTE: Direct input voltage sensing can only be used when the system utilizes a 3 phase, 4 wire distribution system which has the neutral conductor solidly grounded. For 3 phase, 3 wire systems (i.e. no neutral) or high voltage systems, potential transformers must be used (this is also the case where only 1 of the 2 supplies are 3 ph 3 w). Refer to FIGURES 1-4 for voltage sensing connections.

2.4. AC CONTROL POWER INPUT The TSC 800 is factory supplied for either 115VAC or 230VAC (nominal) control power input voltage. Independent AC control power is required from both utility and generator supplies. AC control power is utilized for internal TSC 800 control circuits and external control device loads. The TSC 800 requires approximately 12VA AC power for internal control circuits. The PM 049 REV 10 08/09/25 3 Thomson Technology TSC 800 TRANSFER SWITCH CONTROLLER maximum external load is limited by output contact ratings (i.e. 10A resistive, 120/250VAC). Total AC control power requirements for each supply must be determined by adding both internal and external load requirements.

PM 049 REV 10 08/09/25 4 Thomson Technology TSC 800 TRANSFER SWITCH CONTROLLER 2.5. OUTPUTS The TSC 800 provides the following types of output circuits: Engine Start Contact Programmable Output Contact Transfer to Utility Output Transfer to Generator output Pre/post-transfer to utility Pre/post-transfer to generator Load on utility Load on generator 1 Isolated Form C contact (10A, 250VAC Resistive) Isolated Form C contact (10A, 250VAC Resistive) 250VAC , 10A (Resistive) powered output contact 250VAC , 10A (Resistive) powered output contact 250VAC , 3A (Resistive) powered output contact 250VAC , 3A (Resistive) powered output contact 250VAC , 3A (Resistive) powered output contact 250VAC , 3A (Resistive) powered output contact 1 1 1 1 1 1 1 NOTE: Output voltage is dependent upon AC control power input voltage (i.e. 120VAC or 230VAC nominal). Interposing relays are required between the TSC 800 outputs and the end device if loads exceed the output current rating. Transient suppression devices are required for all inductive devices sharing wiring or if physically located near the transfer switch controller. For AC operated relays or solenoids, use a suitably rated metal oxide varistor (MOV) or capacitor/resistor suppressor. MOV selection should typically be equal to or slightly greater than 1.3 times the nominal RMS voltage being applied to the inductive device.

NOTE: Selecting an MOV of too low a value can/will result in a sustained short circuit and ultimately result in equipment failure. 2.6. SYSTEM PHASING-HIGH LEG DELTA SYSTEMS When the transfer switch is connected to 3 phase 4 wire delta systems and no multi tap power supply transformers supplied with the AC power cables to prevent pick-up of induced voltages. 2.

8.3. An interposing relay may be required if field-wiring distance is excessively long (i.e. greater than 1000 feet (300m)) and/or if a remote contact has a resistance of greater than 5.

0 ohms. In extremely noisy environments, the wire run lengths indicated may not provide reliable operation and can only be corrected by the use of an interposing relay. The interposing relay is generally installed at the engine controls and utilizes DC power. It is strongly suggested that the ground return wire of the interposing relay be used for the interface to the TSC 800 remote start contact, this will ensure integrity of the DC power supply to the engine generator set controls in the event of a shorted or grounded wire remote start interface wire. PM 049 REV 10 08/09/25 8 Thomson Technology TSC 800 TRANSFER SWITCH CONTROLLER 2.8.4. The remote start contact provided is voltage free (i.e. dry contact).

Exposing the remote start contact to voltage or current levels in excess of its rating will damage the transfer controller. 2.9. COMMUNICATION CABLE Communication cable wiring from the controller's communication port must be suitably routed to protect it from sources of electrical interference. Guidelines for protection against possible electrical interference are as follows: · Use high quality, 8 conductor shielded cable only with drain wire grounded at the controller end only. Route the communication cable at least 3 M (10') away from sources of electrical noise such as variable speed motor drives, high voltage power conductors, UPS systems, transformers, rectifiers etc. · Use separate, dedicated conduit runs for all communication cables. Do not tightly bundle communication cables together in the conduit. length of conduit should be grounded to building earth ground. · When communication cables must cross over low or high voltage AC power conductors, the communication cables must cross at right angles and not in parallel with the conductors.

For additional information on protection against electrical interference, contact THOMSON TECHNOLOGY factory. Conduit should be The entire ferromagnetic type near sources of possible electrical interference. PM 049 REV 10 08/09/25 9 Thomson Technology TSC 800 TRANSFER SWITCH CONTROLLER 2.10. DIELECTRIC TESTING Do not perform any high voltage dielectric testing on the transfer switch with the TSC 800 controller connected into the circuit, as serious damage will occur to the controller.



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All AC control fuses or control circuit isolation plugs connected to the TSC 800 must be removed/disconnected if high voltage dielectric testing is performed on the transfer switch. 3. DESCRIPTION The TSC 800 controller consists of two parts; a Lexan faceplate, which is mounted externally on the transfer switch door, and a printed circuit board (PCB), which is mounted inside the transfer switch door. 3.1.

LEXAN FACEPLATE The Lexan faceplate is shown as in FIGURE 7. The Lexan pushbuttons are connected to the main PCB via plug-in ribbon cable. The main features of the Lexan faceplate are described as follows with reference to FIGURE 7. 1 AUTOMATIC TRANSFER CONTROLLER 2 3 MODEL TSC 800 4 5 LAMP TEST 6 EXIT DECREMENT INCREMENT ENTER 7 UTILITY SUPPLY GENERATOR SUPPLY LOAD FULL FILENAME DRAWING1 DATE 02/04/04 11:58AM FIGURE# 7 PM 049 REV 10 08/09/25 10 Thomson Technology TSC 800 TRANSFER SWITCH CONTROLLER LCD viewing window. The LCD display is mounted on the main PCB which is visible from the lexan faceplate. EXIT pushbutton. The EXIT function is used to scroll backwards through the status menus or programming prompts to the previous item. The EXIT function is used to "exit" the programming menu by holding this button down for approximately 2 seconds while in the programming mode. DECREMENT pushbutton. The DECREMENT function is used to change a programming value while in the programming mode.

When this pushbutton is held down, the displayed value will be "decremented" to a lower value as desired. NOTE: The longer the pushbutton is held down, the faster the value will be decremented. INCREMENT pushbutton. The INCREMENT function is used to change a programming value while in the programming mode. When this pushbutton is held down, the displayed value will be "incremented" to a higher value as desired. NOTE: The longer the pushbutton is held down, the faster the value will be incremented. ENTER pushbutton. The ENTER function is used to scroll forwards through the status menus or programming prompts to the next item. The ENTER function is used to "enter" and accept new programming or operating mode changes after a new value has been selected (NOTE: Pressing the Exit button instead of the Enter button will reject the newly selected value and retain the original value). next menu prompt will appear. Load on Utility supply LED light viewing window Load on Generator supply LED light viewing window NOTE: A lamp test feature is provided to test all LED lights as well as the LCD display. To activate the lamp test feature, simultaneously push the INCREMENT and DECREMENT pushbuttons. All LEDs and LCD display pixels should illuminate for approximately 2 seconds then return to their original status. The Lamp Test feature is also used to clear active fault conditions and return the controller to normal operation. NOTE: An active Timer Bypass feature is provided to allow a manual initiated bypass.

To activate the feature, simultaneously push the DECREMENT and ENTER pushbuttons. The previously bypassed timer will operate normally during its next cycle. Refer to Timer Bypass section for related timers. NOTE: In the programming mode, the longer the ENTER pushbutton is held down, the faster the PM 049 REV 10 08/09/25 11 Thomson Technology TSC 800 TRANSFER SWITCH CONTROLLER 4 3 2 1 HD2 UTILIT Y SUPPLY TRANSFORMER GENERATOR SUPPLY TRANSFORMER HD1 1 2 3 4 TB3 WATCHDOG 1 ENGINE START TRANSFER TO UTILITY TRANSFER TO GENERATOR 12 CONTRAST TB2 1 J7 COMM RJ45 Connector 18 TB1 10 1 2 3 4 5 6 7 8 9 G;\ENGINEER\PRODUCTS\TSC800\852613b.VSD 1 FIGURE # 8 3.

2. PRINTED CIRCUIT BOARD The printed circuit board (PCB) is shown in FIGURE 8. The PCB contains the following user interface items: 3.2.1. POWER SUPPLY INPUT VOLTAGE SELECTION The controller power supply input voltage level selection is made via two connector plugs, which are located on the PCB and are identified as HD1 and HD2. Voltage selection plug assemblies are unique for each power supply input level voltage PM 049 REV 10 08/09/25 12 Thomson Technology TSC 800 TRANSFER SWITCH CONTROLLER arrangement and must match the intended voltage level. Controller failure may result if incorrectly configured. The TSC 800 is factory configured for a specific power supply voltage input as designated by voltage header plugs labeled as follows: 115V - designates a 115V power supply input voltage 230V - designates a 230V power supply input voltage 3.2.

2. TERMINAL BLOCKS Three terminal blocks are located on the PCB as follows: TB1 High voltage sensing terminal block (120-600VAC) WARNING Voltage sensing circuits are capable of lethal voltages while energized. Standard safety procedures should be followed and be performed by qualified personnel only. Failure to do so may cause personnel injury and/or death. TB2 TB3 Transfer control terminal block for output contacts and low voltage inputs Transfer control terminal block for 115/230v input and output circuits 3.2.3. DIAGNOSTIC LEDs The TSC 800 controller provides four diagnostic LED lights that are mounted on the rear of the printed circuit board as per FIGURE 8. Their functions are described as follows: WATCHDOG This LED flashes on and off at irregular intervals that indicate that the microprocessor is functioning normally. ENGINE START This LED is illuminated whenever the TSC 800 is initiating an Engine Start (except when there is no power to the TSC 800 controller).

TRANSFER TO UTILITY This LED is illuminated whenever the TSC 800 is initiating a Transfer to Utility signal. TRANSFER TO GEN This LED is illuminated whenever the TSC 800 is initiating a Transfer to Generator signal. NOTE: All LEDs will be illuminated whenever a lamp test function is performed. PM 049 REV 10 08/09/25 13 Thomson Technology TSC 800 TRANSFER SWITCH CONTROLLER 3.2.

4. COMMUNICATION PORT A communication port is provided to interconnect to a remote communication system for remote monitoring and control of the transfer switch. additional information. Refer to Section 4 for 3.2.

5. CONTRAST ADJUSTMENT A contrast adjustment potentiometer is located on the PCB and is factory set for ambient temperatures of 15° to 30° Celsius. For different ambient temperatures, consult the factory for adjustment procedures. 4. REMOTE COMMUNICATION The TSC 800 transfer switch controller is available with a remote communication feature. The remote communication feature allows a TSC 800 controller to be monitored and controlled from a remote location via serial communication link to a personal computer (PC). PC's may be connected locally via serial communication cable to the TSC 800 or remotely via modem and telephone systems. Remote communication can be via customer-supplied equipment or with an external communication interface module (CIM) as manufactured by Thomson Technology. NOTE: The CIM module may be located in the engine control panel provided the maximum distance between the CIM and TSC 800 controller is not exceeded as per the following information.



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Refer to the installation section of this manual for further information.

The CIM module utilizes an internal modem and contains Modbus™ protocol to interface with different remote monitoring software programs. Refer to separate literature for detailed information on the CIM module. The TSC 800 communication port utilizes a RS422 data transmission signal that is directly interconnected to the CIM module via an 8 conductor, shielded cable with plug-in RJ45 connectors. Refer to FIGURES 9 & 10 for detailed information on direct connected or remote connected PC applications with CIM module. TM Trademarks belong to their respective parties. NOTE: Both phone and serial communications ports cannot be connected at the same time. Doing so will result in no communication and/or possible CIM failure. PM 049 REV 10 08/09/25 Thomson Technology TSC 800 TRANSFER SWITCH CONTROLLER CIM Communication Interface Module Phone no connection GRD +- G Port 2A Port 3B GRD TSC 800 Transfer Controller 8 conductor Shielded Cable c/w RJ45 connectors 305M (1000ft)** maximum cable length RS 232 Signal 15M (50ft)** maximum cable length DC Power 8-35Vdc null modem connector Personal Computer **Communication cable wiring must be suitably routed to protect it from sources of electrical interference. Refer to installation section for further information. G:\ENGINEER\PRODUCTS\TSC800\852621. VSD FIGURE #9 TSC 800 WITH CIM MODULE & DIRECT CONNECTED PC (RS232) CIM Communication Interface Module Phone +G GRD Port 2A no connection Port 3B GRD TSC 800 Transfer Controller 8 conductor Shielded Cable c/w RJ45 connectors 305M (1000ft)** maximum cable length **Communication cable wiring must be suitably routed to protect it from sources of electrical interference. Refer to installation section for further information. DC Power 8-35Vdc Modem Personal Computer G:\ENGINEER\PRODUCTS\TSC800\852622. VSD FIGURE #10 TSC 800 WITH CIM MODULE & REMOTE CONNECTED PC PM 049 REV 10 08/09/25 Thomson Technology TSC 800 TRANSFER SWITCH CONTROLLER The TSC 800 RS422 communication port allows multiple TSC 800 controllers to be directly interconnected together to form a single network system. Up to 10 TSC 800 controllers may be interconnected to a single CIM module.

NOTE: TSC 800 controllers and MEC 20 engine-generator controllers may be interconnected together via the same communication network provided the maximum number of controllers and interconnection distances are not exceeded. For additional information, refer to associated product instruction manuals. Each TSC 800 controller is programmed with a unique communication node address number for the remote communication system to reference. The network system may be connected to a local PC or to a remote PC via telephone system and CIM module. Refer to FIGURE #11 for a typical TSC 800 network system with CIM module.

CIM Communication Interface Module Phone +G 8 conductor Shielded Cable c/w RJ45 connectors GRD Port 2A no connection Port 3B GRD TSC 800 Transfer Controller #1 TSC 800 Transfer Controller #2 TSC 800 Transfer Controller #3 DC Power 8-35Vdc THS 305M (1000ft)** maximum cable length GRD Modem Personal Computer **Communication cable wiring must be suitably routed to protect it from sources of electrical interference. Refer to installation section for further information. GRD To additional TSC 800 controllers (maximum 10 total per network)

G:\ENGINEER\PRODUCTS\TSC800\852623. VSD FIGURE #11 NETWORKED TSC 800 INTERCONNECTION DIAGRAM PM 049 REV 10 08/09/25 Thomson Technology TSC 800 TRANSFER SWITCH CONTROLLER 5. TSC 800 DISPLAY MENUS The TSC 800 contains a Liquid Crystal Display (LCD) that is visible on the front faceplate. The LCD has pre-programmed display menus which are automatically displayed in an auto-scrolling mode or they may be selected manually by pressing the ENTER or EXIT pushbuttons in succession until the desired menu is displayed. The display menu types and order in which they are programmed are as follows: NOTE: The following display menus are provided in TSC 800 Software version 2.0 (or higher). SYSTEM TIME STATS MENU ATS MODE MENU PROGRAM MENU SYSTEM STATUS TIMER COUNTDOWN UTILITY SUPPLY MENU GEN SUPPLY MENU NOTE: ATS MODE MENU access may be inhibited. Refer to programming instruction for further details.

PM 049 REV 10 08/09/25 Thomson Technology TSC 800 TRANSFER SWITCH CONTROLLER 5.1. SYSTEM TIME MENU The system time menu is used to show current system time and week number. The TSC 800 controller uses its internal time clock to reference when an automatic exercising operation (if pre-programmed) is to occur. To change the system time, refer to the "time clock adjustment" section of this manual. Should control power be lost to the TSC 800 controller for longer than 1-5 minutes, the time clock setting will be saved at the last time value. When the controller is re-energized, the time setting will indicate the approximate time when the controller lost power and then will resume keeping system Time. To re-adjust the system time clock, refer to section 6.3. NOTE: The following system Time menu is provided in TSC 800 Software version 2.

0 (or higher). LCD DISPLAY System Time Mon 1 12:24:31 Displays the day of the week (e.g. Monday) Displays the week number (e.g. 1-4) Displays the current time in hours (24-hour clock): hour: min: seconds 5.2. ATS MODE MENU The ATS Mode Menu provides manually selectable operating modes which includes On/Offload testing features (comparable features also available via external inputs utilizing an optional FTS4 selector switch). The Internal and External ATS Mode inputs operate in a parallel fashion; the Mode of Operation will be determined by the highest priority selected by either format. The priority levels are as follows (highest to lowest priority): 1) 2) 3) 4) Off (Controller out of Service, no control logic applied) Onload Test Offload Test Auto A utility power failure will over ride all but "Off".

In the event of a generator failure and the utility supply is available and considered normal, the ATS will return to the utility supply except when "Off" selected. PM 049 REV 10 08/09/25 Thomson Technology TSC 800 TRANSFER SWITCH CONTROLLER NOTE: The following test menu is provided in TSC 800 Software version 2.0 (or higher). The ATS Mode sub-menus are organized as follows: ATS Mode Menu No Yes Auto (Automatic Operation & Programmed Test Mode) Offload Test Onload Test Off (Controller Disabled) Timed Test: Selectable 15 - 240 Min. Continuous Test Automatic Return to "Auto Mode" LCD DISPLAY ATS Mode Menu No Displays two messages that may be toggled between YES or NO by pressing the INCREMENT or DECREMENT pushbuttons. Their functions are described as follows: No Yes Status message only, a change is required to gain access.



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The required variable to be entered to gain access and proceed. If the password protect feature is enabled a prompt will appear requiring a level 2 or greater security code be entered to allow a read-write access. Entering a level 1 password will only permit a read only access. The following ATS Mode Menu options are provided: Auto This is the Default Selection and is required to enable all automatic features of the controller.

In this mode the TSC 800 Controller will automatically transfer the load to the appropriate source based on availability (the Utility supply is considered the preferred source). The TSC 800 will provide automatic timed testing if enabled in programming. Manual testing is disabled when the Auto ATS mode is selected (NOTE: PM 049 REV 10 08/09/25 19 Thomson Technology TSC 800 TRANSFER SWITCH CONTROLLER the external mode inputs input will override ATS Mode Menu selected Auto mode). Offload Test When the Offload Test prompt is selected and entered, the generator will immediately start and operate offload and will not permit a load transfer. The test menu will display Continuous Test, to select a timed test use the INCREMENT or DECREMENT pushbutton to scroll and select a test duration time, press enter to accept the time (selectable in 15 minutes increments from 15 240 min.). The generator will remain running until a different mode is selected and entered or the timed test duration expires (selecting Auto will immediately terminate the test). On expiry of the timed test the operating mode automatically reverts to Auto. NOTE: If the Utility supply fails during this test mode, the load will automatically transfer to the generator if within acceptable limits. Onload Test When the Onload Test prompt is selected and entered, the generator will immediately start and transfer on load.

The test menu will display Continuous Test, to select a timed test use the INCREMENT or DECREMENT pushbutton to scroll and select a test duration time, press enter to accept the time (selectable in 15 minutes increments from 15 240 min.). The generator will remain running until a different mode is selected and entered or the timed test duration expires (selecting Auto will terminate the test after the Utility Return Timer has expired). On expiry of the timed test the operating mode automatically reverts to Auto. NOTE: Should the Generator fail during the onload test and the Utility supply is available and within acceptable limits the load will be transferred on expiry of the generator under voltage delays.

Off The TSC 800 Controller is considered out of Service. The transfer mechanism logic outputs are dropped out and disabled. The transfer switch will remain in its last position and the remote start removed if previously enabled. Manual and auto test features are disabled. This selection takes precedence over all other modes.

PM 049 REV 10 08/09/25 20 Thomson Technology TSC 800 TRANSFER SWITCH CONTROLLER NOTE: When this mode is selected the local generator controls should also be placed in OFF. Failing to do can result in cyclical engine starting. On loss of Utility supply in this state (loss of control power to the TSC 800) the engine start contact will drop out after approximately 4 minutes resulting in generator starting and stopping (the cycle will repeat approximately every 4 minutes after the control power is removed). NOTE: On return to normal service the Engine Start output is inhibited (held up) for approximately 8 10 seconds. Requesting another mode of operation during this time, which requires the engine start contact to close, will be ignored. PM 049 REV 10 08/09/25 21 Thomson Technology TSC 800 TRANSFER SWITCH CONTROLLER 5.3. TSC 800 PROGRAM MENU The programming menu is used to access the TSC 800's programmable functions such as time delays, voltage/frequency setpoints, calibration and time clock adjustments. Access to the programming sub-menus can only be obtained with a security password number. The sub menus are organized as follows: Programming Menu No Yes Password LCD DISPLAY Program Menu No Displays two messages that may be toggled between YES or NO by pressing the INCREMENT or DECREMENT pushbuttons.

Their functions are described as follows: NO YES Status message only, a change is required to gain access. The required variable to be entered to gain access and proceed. The password protection prompt will appear requiring a level 2 or greater security code be entered to provide a read-write access. Entering a level 1 password will permit a read only access. 5.4. SYSTEM OPERATION MENU The system operation menu provides the operator with information as to current status of both the utility and generator supplies. NOTE: The system operation menu screen may be momentarily replaced with a time delay countdown screen when a transfer sequence is initiated. The display will automatically return to the previous menu following expiry of the timing sequence. PM 049 REV

10 08/09/25 22 Thomson Technology TSC 800 TRANSFER SWITCH CONTROLLER The system operation sub-menus are organized as follows: Utility Normal Failed Return Delay Gen ATS In OFF In Auto Starting Failed Running Normal Cooling Auto Offload Test Manual Offload Test Auto Onload Test Manual Onload Test Commit To Transfer LCD DISPLAY Util Normal Gen Onload Test Displays utility supply status conditions.

There are three status conditions: Normal Failed Return Delay Load is on the utility supply and the utility's voltage and frequency is normal. Utility supply voltage and/or frequency are outside the nominal programmed limits (e.g. failed condition). Load is on the generator supply and the utility supply is ready to transfer.

This is a temporary condition due to either a test mode being selected or during a utility return time delay. Displays generator supply status conditions. There are twelve status conditions as follows: ATS In Off The ATS Mode has been set to OFF via the Internal or External switch input. The Controller will display the message "Controller Out of Service". In Auto The ATS Mode via the Internal ATS Mode Menu has been set to Auto.

PM 049 REV 10 08/09/25 23 Thomson Technology TSC 800 TRANSFER SWITCH CONTROLLER Starting Engine start signal has been initiated, and the TSC 800 sensors are waiting for generator voltage to build up. Failed Generator is signaled to operate; however its voltage and/or frequency is outside the nominal programmed limits (e.g. failed condition). Running The generator is running (within programmed limits) but not requested to transfer on load by the controller. Normal Cooling The generator is running due to a failed utility supply. The generator is running (within programmed limits) during the programmed cooldown delay. Auto Offload Test The generator is running off load due to a programmed exercise timer mode. Manual Offload Test The generator is running off load due to manually initiated off load test mode via the front-panel pushbuttons or external inputs.



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Auto Onload Test The generator is running on load due to a programmed exercise timer mode.

Manual Onload Test The generator is running on load due to manually initiated on load test mode via the front-panel pushbuttons or external inputs. Commit To Transfer When enabled, the generator will be committed to transferring on load if the loss of utility is detected and the engine start issued. The generator will remain on load for the duration of the power failure and the transfer return time. If the generator fails to start within 5 minutes the commit to transfer request is cancelled. 5.5. TIMER COUNTDOWN MENUS Timer countdown menus are automatically displayed when a specific time delay function occurs during a transfer sequence. When a time delay begins, the LCD display will indicate the time delay function name (e.g. Gen Start Delay) and the current time remaining in the countdown sequence.

When the timing function is complete, the LCD display will automatically change to either the next timing sequence countdown display or return to auto scrolling the system status screens. PM 049 REV 10 08/09/25 24 Thomson Technology TSC 800 TRANSFER SWITCH CONTROLLER LCD DISPLAY Gen Start Delay 45 Sec Displays specific time delay function currently in operation Displays current time in seconds that are left in the specific timing sequence.

NOTE: During a timer countdown sequence, scrolling to a different display screen is possible by pressing either the ENTER or EXIT pushbuttons. The following timer countdown screens are provided and displayed in seconds of time remaining: Gen Start Delay Gen Cooling Delay PreTransfer Delay Finding Neutral PSD Max Open Time Gen Warm up Delay Utility Return Delay PostTransfer Delay Neutral Delay Transferring Syncing (Close Transition Feature Only) 5.6.

UTILITY SUPPLY MENU The utility supply menu allows the operator to view the utility supply voltage and frequency values. LCD DISPLAY Util 600 60.0Hz 600 600 Displays utility supply frequency in hertz (Hz). The frequency is displayed with a resolution of 1/10 of a hertz. Displays utility supply voltage as follows: · · 3-phase system: LINE TO LINE VOLTAGE--Phases A to B 1-phase system: LINE TO LINE VOLTAGE--Phases L1 to L2 Displays utility supply voltage as follows: · · 3-phase system: LINE TO LINE VOLTAGE--Phases B to C 1-phase system: LINE TO NEUTRAL VOLTAGE--Phases L1 to N PM 049 REV 10 08/09/25 25 Thomson Technology TSC 800 TRANSFER SWITCH CONTROLLER Displays utility supply voltage as follows: · · 5.

7. 3-phase system: LINE TO LINE VOLTAGE--Phases C to A 1-phase system: LINE TO NEUTRAL VOLTAGE--Phases L2 to N GENERATOR SUPPLY MENU The generator supply menu allows the operator to view the generator supply voltage and frequency values. LCD DISPLAY Gen 600 60.0Hz 600 600 Displays generator supply frequency in hertz (Hz). The frequency is displayed with a resolution of 1/10 of a hertz. Displays generator supply voltage as follows: · · 3-phase system: LINE TO LINE VOLTAGE--Phases A to B 1-phase system: LINE TO LINE VOLTAGE--Phases L1 to L2 Displays generator supply voltage as follows: · · 3-phase system: LINE TO LINE VOLTAGE--Phases B to C 1-phase system: LINE TO NEUTRAL VOLTAGE--Phases L1 to N Displays generator supply voltage as follows: · · 3-phase system: LINE TO LINE VOLTAGE--Phases C to A 1-phase system: LINE TO NEUTRAL VOLTAGE--Phases L2 to N NOTE: The load bus voltages are viewable only in the Programming Menu. When selected as 3-phase load sensing it will be displayed as listed above for 3-phase systems. When selected as 1-phase, only the L1 to L2 voltage will be displayed as a line-to-line value. 3-phase load sensing can only be selected if all 3 phases of the load bus are wired to the TSC 800 controller. Most transfer switches manufactured prior to December 2004 will not have the C phase load bus wiring installed and must be set for 1-phase load sensing.

PM 049 REV 10 08/09/25 26 Thomson Technology TSC 800 TRANSFER SWITCH CONTROLLER 5.8. STATS MENU The STATS menu displays the recorded data logging for the following events: NOTE: The following stats menu is provided in TSC 800 Software version 2.0 (or higher). o o o o Total Number of Transfers Total Number of Transfers due to source failure Number of Hours Controller is energized Number of Hours Load is on Utility Number of Hours Load is on Generator The TSC 800 data logging has the maximum number of events memory as follows: o o The limit for the Total Transfers and SRC Fail Transfers is 10,000. The limit for the Total Hours, Load On SRC1 Hours, and Load On SRC2 Hours is 160,000 hours. LCD DISPLAY Total Transfers 20 Displays the recorded data NOTE: Zeroing of the Statistic Records can be accessed by entering the Program Menu with a master password number. Consult THOMSON TECHNOLOGY factory for master password number if required. PM 049 REV 10 08/09/25 27 Thomson Technology TSC 800 TRANSFER SWITCH CONTROLLER 6. OPERATING INSTRUCTIONS To operate the TSC 800 controller and associated transfer switch using the front faceplate pushbuttons, refer to the following detailed operating instruction sub-section descriptions.

6.1. AUTOMATIC SEQUENCE OF OPERATION 6.1.1.

NORMAL SEQUENCE OF OPERATION (OPEN TRANSITION TRANSFER) Under normal operating conditions, the transfer switch operates automatically during a failure and restoration of utility power and does not require operator intervention. NOTE: Refer to sections 6.5 & 6.10 which may require operator intervention When utility supply voltage drops below a preset nominal value (70 - 99% of rated adjustable) on any phase, an engine start delay circuit will be initiated. Following expiry of the engine start delay period (0 - 60 sec.

adjustable) an engine start signal (contact closure) will be given. Once the engine starts, the transfer switch controller will monitor the generators voltage and frequency levels. Once the generator voltage and frequency rises above preset values (70 - 99% nominal adjustable) a warm up time delay will be initiated. Once the warm up timer (0 - 3000 Sec adjustable) expires the transfer to utility supply signal will be removed (i.e. contact opening) and the transfer to generator supply signal (contact closure) will be given to the transfer switch mechanism. The load will then transfer from the utility supply (i.e. opening the utility power switching device) to the generator supply (closing the generator power switching device) to complete a break-before-make open transition transfer sequence. The generator will continue to supply the load until the utility supply has returned and the retransfer sequence is completed as follows: When the utility supply voltage is restored to above the present values (70 - 99% of rated adjustable) on all phases, a utility return delay circuit will be initiated.

Following expiry of the utility return timer (0 - 50.



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0 min. adjustable), the transfer to generator supply signal will be removed (contact PM 049 REV 10 08/09/25 28 Thomson Technology TSC 800 TRANSFER SWITCH CONTROLLER opening), the transfer to utility supply signal (contact closure) will be given to the transfer switch mechanism. The load will then be transferred from the generator supply back to the utility supply. During the utility re-transfer sequence a neutral position delay circuit can be employed which will cause the transfer mechanism to pause in the "neutral position (i.e. with both transfer power switching devices open) for the duration of the neutral delay timer (0 -120 seconds adjustable) setting, once the time delay expires, the re-transfer sequence will be completed. The Neutral Delay Bypass feature can also be enabled to detect when all load phases voltages have dropped below 20% of the nominal system voltage, which will cancel any remaining Neutral Delay time and complete the transfer. An engine cooldown timer circuit will be initiated once the load is transferred from the generator supply and determined to have made position by ensuring the load bus is energized and the Utility position indication confirmed. Following expiry of the cooldown delay period (0 50.

0 min. adjustable) the engine start signal will be removed (remote start contact opened) to initiate stopping of the generator set. 6.1.2.

NORMAL SEQUENCE OF OPERATION (CLOSED TRANSITION TRANSFER) For transfer switches equipped with the closed transition transfer option, the TSC 800 is configured to provide additional logic for this application. on TB2-12) the TSC 800 is configured to operate as follows: Under normal closed transition operating conditions, the transfer switch operates automatically during a failure and restoration of utility power and does not require operator intervention. When utility supply voltage drops below a preset nominal value (70 - 99% of nominal, adjustable) on any phase, an engine start delay circuit will be initiated. Following expiry of the engine start delay period (0 - 60 sec. adjustable) an engine start signal (contact closure) will be given.

Once the engine starts, the transfer switch controller will monitor the generator voltage and frequency levels. When the generator voltage and frequency rises above preset values (70 - 99% of nominal, adjustable) a warm up time delay will be initiated. When the warm up timer (0 3000 Sec. adjustable) expires the transfer to utility supply When the TSC 800 controller receives an input signal for Closed Transition Transfer Mode (contact closing PM 049 REV 10 08/09/25 29 Thomson Technology TSC 800 TRANSFER SWITCH CONTROLLER signal will be removed (logic contact(s) opening) and the transfer to generator supply signal (logic contact(s) closure) will be given to the transfer switch Power Switching Devices. The load will then transfer from the utility supply (i.e. opening the utility power switching device) to the generator supply (closing the generator power switching device) to complete a break-before-make open transition transfer sequence. The generator will continue to supply the load until the utility supply has returned and the retransfer sequence is completed as follows: When the utility supply voltage is restored to above the present values (70 - 99% of rated adjustable) on all phases, a re-transfer sequence will be initiated once the Utility Return timer expires. The utility will close its power-switching device when it is in synchronism with the generator supply via external logic device. If the transfer switch is supplied with a "Momentary" Closed Transition transfer control option, the generator power switching device will immediately trip open approximately 50-100 milliseconds after the utility power switching device closes to complete the "make-before-break" re-transfer sequence.

If the transfer switch is supplied with a "Soft-Load" Closed Transition transfer control option, the generator power switching device will remain closed for approximately 5-10 seconds to allow a soft-load power transfer sequence to be completed as controlled by an external device. The generator power switching device will then trip open to complete the "make-before-break" re-transfer sequence. An engine cooldown timer circuit will be initiated once the load is transferred from the generator supply and determined to have made position by ensuring the load bus is energized and the utility position indication confirmed. Following expiry of the cooldown delay period (0.0 50.0 min. adjustable) the engine start signal will be removed (remote start contact opened) to initiate stopping of the generator set. 6.1.3.

TEST MODE SEQUENCE OF OPERATION 6.1.3.1. TEST CONDITION (OPEN TRANSITION TRANSFER) When an operator selects a test mode it shall signal a simulated utility power fail signal to the transfer switch controller.

The transfer switch shall operate as per a normal utility power fail condition. The neutral delay circuit logic will be active during transfer to and from the generator supply (i.e. when both sources of power are available). (For definitions and added features refer to Section 7.

5.12.) PM 049 REV 10 08/09/25 30 Thomson Technology TSC 800 TRANSFER SWITCH CONTROLLER The transfer switch shall remain on generator supply until the test mode is terminated. It will then re-transfer back to the utility supply and continue to operate the generator set for its cooldown period then stop. 6.1.3.2. **TEST CONDITION (CLOSED TRANSITION TRANSFER)** When a load test is initiated in the closed transition transfer mode, the generator will start and following its warm up delay, the generator will close its power-switching device when it is in synchronism with the utility supply via external logic device. If the transfer switch is supplied with a "Momentary" Closed Transition transfer control option, the utility power switching device will immediately trip open approximately 50-100 milliseconds after the generator power switching device closes to complete the "make-before-break" transfer sequence.

If the transfer switch is supplied with a "SoftLoad" Closed Transition transfer control option, the utility power switching device will remain closed for approximately 5-10 seconds to allow a soft-load power transfer sequence to be completed as controlled by an external device. The utility power switching device will then trip open to complete the "make-before-break" transfer sequence.. The generator will continue to supply the load until the test mode has been removed and the re-transfer sequence is completed as follows: The utility power-switching device will close when it is in synchronism with the generator supply via external logic device.. If the transfer switch is supplied with a "Momentary" Closed Transition transfer control option, the generator power switching device will immediately trip open approximately 50-100 milliseconds after the utility power switching device closes to complete the "make-before-break" re-transfer sequence.



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If the transfer switch is supplied with a "Soft-Load" Closed Transition transfer control option, the generator power switching device will remain closed for approximately 5-10 seconds to allow a soft-load power transfer sequence to be completed as controlled by an external device. The generator power switching device will then trip open to complete the "makebefore-break" re-transfer sequence. PM 049 REV 10 08/09/25 31 Thomson Technology TSC 800 TRANSFER SWITCH CONTROLLER 6.1.

4. ABNORMAL SEQUENCE OF OPERATION 6.1.4.1.

GENERATOR FAILURE ON LOAD Should the generator set fail while on load, the transfer switch shall re-transfer the load back to the utility supply if within nominal limits. The utility return timer will be bypassed in this condition. NOTE: This operating condition applies to a normal utility failure as well as any test condition. 6.1.

4.2. TRANSFER SWITCH FAIL ALARM LOGIC The TSC 800 controller contains logic to detect a transfer mechanism failure. Should a failure be detected, a forced transfer to the alternate supply will be initiated if the TSC 800 is programmed for force transfer. Refer to the programming Section 7.5.14 for further information in Force Transfer operation. 6.1.4.

3. SERVICE ENTRANCE ATS For Service Entrance Rated transfer switch applications, the transfer switch control logic will include external wiring to signal the transfer switch mechanism to move to the "Service Disconnected" position when Service Disconnect Operation is required. In this mode the TSC 800's transfer control outputs and Transfer Fail feature is disabled. On return to Service the TSC 800 will display "Resuming Normal Operation" and the Power-Switching Device will be closed to the utility supply. Should the utility supply be out of limits the generator will be issued a start command and the load transfer to the generator supply once its warm-up time has expired. The ATS returns to Auto control and will return to the utility supply as previously describe for the appropriate ATS design type. NOTE: On return to Normal Service the Engine Start output is inhibited (held up) for approximately 8-10 seconds.

Requesting another mode of operation requiring the engine start contact to close will be ignored until this timer expires. 6.2.

LCD DISPLAY OPERATION The TSC 800 LCD display will operate in the following modes: PM 049 REV 10 08/09/25 32 Thomson Technology TSC 800 TRANSFER SWITCH CONTROLLER NOTE: The following LCD operation is provided in TSC 800 Software version 2.0 (or higher). **SLEEP Mode:** The LCD display will automatically turn off and go into a "sleep" mode to preserve operating life time. The sleep mode will be activated if a faceplate key press is not activated within a 16 minute time period. Pressing any faceplate key will automatically reactivate the LCD display.

AUTO SCROLLING Mode: The LCD will automatically scroll through a series of display menu screens at a rate of 1 screen every 3 seconds. Pressing any faceplate key while the display is on the desired menu screen will automatically stop the scrolling feature. The auto-scrolling feature will be re-activated 120 seconds later if no key presses are made. To view other menus once the auto scrolling has been deactivated, press the ENTER or EXIT pushbuttons to scroll to the next available menu. NOTE that the menu list will automatically loop back to the first menu item when the end of the list is reached.

BACK LIGHT Mode: The LCD incorporates a back light feature. When any keypad is pressed the back light will illuminate for 120 seconds. **AUTO EXIT PROGRAMMING Mode:** The LCD display will automatically exit the programming menu and return to auto scrolling mode if no keypad is depressed within 5 minutes. **6.3 TIME CLOCK ADJUSTMENT** To adjust the TSC 800 controller's internal time clock, follow the detailed procedure below. NOTE: Normal utility or generator control power to the controller must be available to permit adjustment. · · Using the ENTER or EXIT pushbutton, scroll to the Program Menu. Using the INCREMENT pushbutton, select the Yes message and press the ENTER pushbutton. · · Press the ENTER pushbutton when the Password message is displayed. Using the INCREMENT pushbutton, select the current Day of the week message and week number (1-4) and press the ENTER pushbutton.

PM 049 REV 10 08/09/25 33 Thomson Technology TSC 800 TRANSFER SWITCH CONTROLLER NOTE: Week Number is programmable only if the System Time Clock Rollover period is set longer than 7 days. Refer to Programming section for further details. · Using the INCREMENT pushbutton, select the current Hour of the day (e.g. 24 hour clock) and press the ENTER pushbutton. · Using the INCREMENT pushbutton, select the current Minute of the day (e.g. 60 minute) and press the ENTER pushbutton. · Press the EXIT pushbutton and hold for 2 seconds to exit the time clock adjustment mode (Automatic exit if no keypad depressed within 5 minutes). 6.

4 TEST MODES 6.4.1 OPERATOR INITIATED UTILITY POWER FAIL SIMULATION (LOAD TEST) To perform a testing operation on the transfer switch using the front faceplate pushbuttons, follow the procedure listed below. To Initiate the Load Test Mode: · · Using the ENTER pushbutton, scroll to the ATS Mode Menu. Using the INCREMENT pushbutton, select the Yes message and press the ENTER pushbutton.

· Using the INCREMENT pushbutton, select the Onload or Offload test option as required. · · Press the ENTER pushbutton. Continuous Test will be displayed (no time out). Using the INCREMENT pushbutton, a timed test can be selected if the desired, duration of Test Mode Time Out is selectable in 15-minute increments from 15-240 minutes. · Press the ENTER pushbutton.

PM 049 REV 10 08/09/25 34 Thomson Technology TSC 800 TRANSFER SWITCH CONTROLLER To Exit the Test Mode: · · Using the ENTER pushbutton, scroll to the ATS Mode Menu. Using the INCREMENT pushbutton, select the Yes message and press the ENTER pushbutton. · · Using the INCREMENT pushbutton, select Auto. Press the ENTER pushbutton. After the Utility Return Timer has expired the transfer of the load from the generator to the utility supply will be initiated. **6.4.2 AUTOMATIC PLANT EXERCISE TEST** To initiate an automatic plant exercise test mode, the TSC 800 must be preprogrammed for the desired start/stop times, frequency of the test and type of test (i.e. Onload, Offload).

Refer to the Programming section for details on programming. Once the plant exercise timer is programmed, the engine will immediately start at the selected time and transfer on load (if Onload is selected) once nominal voltage and frequency levels have been obtained. The engine will remain operating until the stop time is reached, then the load will re-transfer back to the utility supply after the utility return timer has expired.



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The generator will repeat the test sequence as programmed. 6.4.3 FOUR FUNCTION REMOTE TEST (FTS4 OPTION) The function of the Four Position Test Switch Input is to allow operators to select various operating scenarios for test or maintenance purposes, in addition to the use of the faceplate mounted pushbuttons. NOTE: When an external FTS4 switch is used, the TSC 800 operation will be based on the highest priority of either the internal ATS Mode or the external FTS4 inputs to the controller. Mode Priority: 1 Off, 2 Onload Test, 3 Offload Test & 4 Auto Off: Disables the engine start output from the transfer switch (FTS4 only). Service".

(disabled). TSC 800 will display "Controller Out of All transfer logic outputs are dropped out The transfer switch will not provide automatic control in the event of a power failure. Engine start output on the controller is dropped out. (Place generator controls in OFF if continuous running of the generator is not desired.) PM 049 REV 10 08/09/25 35 Thomson Technology TSC 800 TRANSFER SWITCH CONTROLLER NOTE: Moving FTS4 out of OFF will display "Resuming Normal Operation" and the ATS will source the appropriate supply.

NOTE: On return to Normal Service the Engine Start output is inhibited (held up) for approximately 8 10 seconds. Requesting another mode of operation during this time, which requires the engine start contact to close, will be ignored. Auto: Engine Start: All automatic functions are enabled. (Offload Test) An engine start signal will be initiated and will remain on until the FTS4 is placed in another position. The engine will start if the engine's auto start controller is in the "Auto" mode.

If the primary source fails in this mode, and the secondary source is within parameters, the TSC 800 will initiate a transfer to the secondary source. Test: (Onload Test) A primary source failure is simulated and an engine start signal will be initiated. When the secondary source is within normal limits, the TSC 800 will initiate a transfer to the secondary source. The system will remain in this state until the FTS4 is placed in another position or the secondary supply fails. Upon a secondary supply failure, if the primary supply is available, the TSC 800 will initiate a transfer to the primary supply. The Utility Return time sequence will be initiated when the Onload Test mode is terminated. Once transfer is complete to the primary source the engine cooldown time sequence will be initiated, on expiry, the generator set will stop if no cooldown is included in its design/programming. PM 049 REV 10 08/09/25 36 Thomson Technology TSC 800 TRANSFER SWITCH CONTROLLER 6.5 TRANSFER FAIL FAULT RESET To reset a Transfer Fail condition (i.e.

When the LCD Display indicates the applicable fault condition and the "Press Lamp Test" alarm message), press and hold the DECREMENT & INCREMENT keys simultaneously. Once the alarm condition is reset, the load will automatically retransfer back to the original source if within normal limits. NOTE: Refer to section 7.5.14 for further details. 6.6 LAMP TEST To initiate a Lamp Test, press and hold the DECREMENT & INCREMENT keys simultaneously until all LEDs & LCD segments illuminate. 6.7 TIMER BYPASS The following automatic sequencing time delays can be temporarily bypassed when the time function is active as shown on the TSC 800 LCD display: NOTE: Timer Bypass feature is provided in TSC 800 Software version 2.0 (or higher).

Utility Return Timer Cooldown Timer Warm up Timer This feature is typically used when testing to avoid waiting for the complete duration of the time period.

To activate the bypass function, simultaneously press the DECREMENT and the ENTER keys during the timer operation. NOTE: The Time delay functions will return to the normal time settings on the subsequent automatic operating sequence. PM 049 REV 10 08/09/25 37 Thomson Technology TSC 800 TRANSFER SWITCH CONTROLLER 6.8 MANUAL UTILITY RE-TRANSFER If the TSC 800 is programmed to provide a Manual Utility Re-transfer Sequence, an operator must initiate the re-transfer sequence when the utility supply has returned to normal following a utility power failure and TSC 800 LCD message " Util Return" "Press Lamp Test ".

NOTE: Manual Re-transfer feature is provided in TSC 800 Software version 2.0 (or higher). Programmed Utility Return Delay Time is not included to ensure stable utility supply prior to retransfer. 6.9 SERVICE ENTRANCE ATS MODE For transfer switches equipped with the Service Entrance Mode option, the TSC 800 is configured to provide additional logic for the application.

When the TSC 800 controller receives an input signal for Service Entrance Mode (contact closing on TB2-15) the TSC 800 will post an alarm message on the LCD display " Service Disconnecting" when sourcing neutral position and when both Load on Generator and Utility inputs are de-energized and the load bus is de-energized will display "Service Disconnected". The control logic required to move the ATS mechanism to the neutral position is controlled by external logic and not by the TSC 800. When in "Service Disconnect" mode all transfer logic outputs are de-energized. When "Service Disconnect" mode is removed the controller will display "Returning to Service" and move to the appropriate source depending on availability within programmed limits. NOTE: On return to Normal Service the Engine Start output is inhibited (held up) for approximately 8 10 seconds. Requesting another mode of operation during this time, which requires the engine start contact to close, will be ignored. NOTE: Service entrance feature is provided in TSC 800 Software version 2.0 (or higher).

6.10 PHASE BALANCE PROTECTION ALARM When the TSC 800 is programmed with Phase Balance protection enabled, should a transfer occur due to an out of limit phase balance condition, an alarm message will be shown on the TSC 800 LCD display "UTIL (or GEN) UNBALANCED".

The Phase Balance feature may be user programmed to provide two different re-transfer operating sequences (i.e. AUTO or MANUAL RETRANSFER). PM 049 REV 10 08/09/25 38 Thomson Technology TSC 800 TRANSFER SWITCH CONTROLLER When the "AUTO" retransfer mode is selected, the load will be automatically re-transferred back to the original source and does not require operator intervention. When the "MANUAL" retransfer mode is selected, a re-transfer back to the original source will not occur until the LAMP TEST function is activated and alarm is reset by operator intervention. For further details on Phase Balance programming refer to section 7.3.17. NOTE: When in the MANUAL RETRANSFER mode, if the alternate source fails, the alarm lockout will not be bypassed inhibiting the load to re-transfer back to the original source even if within limits.



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