GE GE □□□ Series Service Manual

IS200VTCCH1CBB

1. Description

SPECIFICATIONS:

2. Specifications

Specification	Value
Part	**Number IS200VTCCH1CBB**
Series	**Mark VI**
Manufacturer	**GE Motors and Industrial Systems**
Instruction	**Manual GEH-6421**
Product	**Type Thermocouple Input Terminal Board**
Functional	**Acronym/Abbreviation VTCC**
Thermocouples	**Supported E, J, K, S, and T types**
About	**the IS200VTCCH1CBB**
This	**IS200VTCCH1CBB printed circuit board product offering from General Electric was originally designed and produced specifically for placement in the Mark VI Turbine Control System Series, as asserted in this IS200VTCCH1CBB Thermocouple Terminal Board product's originally-available instructional manual materials. The Mark VI Turbine Control System Series that this IS200VTCCH1CBB Thermocouple Terminal Board product belongs to, as you were more than likely able to deduce solely based off of its full extended series name, specifically pertains to the control systems and management systems of General Electric-compatible gas, steam, and wind turbine automated drive assemblies. This intended functional application range i**

3. Product Information

SPECIFICATIONS:

Part Number: IS200VTCCH1CBB

Manufacturer: General Electric

Series: Mark VI

Function: Thermocouple Processor Board

Number of Channels: 12

Thermocouple Types: E, J, K, S

Span: -8 mV to +45 mV

A/D Converter: 16-bit

Common Mode Voltage: +5 Volts

Normal Mode Rejection: 250mV

Microprocessor: AMD-K6 300 MHz

Operating temperature: -30 to 65 °C

Size: 8.26 cm wide x 4.19 cm

Technology: Surface Mount

Repair: 3-7 Day

Availability: In Stock

Country of Origin: United States

Manual: GEH-6421V

FUNCTIONAL DESCRIPTION:

IS200VTCCH1CBB is a Thermocouple Processor Board manufactured and designed by General Electric as part of the Mark VI Series used in GE Speedtronic Control Systems. The Thermocouple Input (VTCC) board accepts 24 thermocouple inputs. These inputs are wired to the TBTC or DTTC terminal boards. Cables with molded plugs connect the terminal board to the VME rack where the VTCC thermocouple processor board is located. The TBTC can provide both simplex (TBTCH1C) or triple module redundant (TMR) control (TBTCHIB). Two groups of the VTCC provide different temperature ranges optimized for gas turbine control applications (VTCCH1) and general-purpose applications (VTCCH2). The same terminal boards are used with both groups of the VTCC.

VTCCH1 supports E, J, K, S, and T types of thermocouples and mV inputs. The mV span is -8 mV to +45 mV.

VTCCH2 supports E, J, K, S, and T as well as B, N, and R types of standard thermocouples and mV inputs. The mV span for VTCCH2 is -20 mV to +95 mV.

INSTALLATION:

Power down the VME processor rack

Slide in the VTCC board and push the top and bottom levers in with your hands to seat its edge connectors

Tighten the captive screws at the top and bottom of the front panel

OPERATION:

Type E, J, K, S, and T thermocouples can be used with VTCCH1, and they can be grounded or ungrounded. Type E, J, K, S, T, B, N, and R thermocouples can be used with VTCCH2, and they can be grounded or ungrounded. They can be located up to 300 m (984 ft) from the turbine control cabinet with a maximum two-way cable resistance of 450 Ω. High-frequency noise suppression and two cold junctions (CJ) reference devices are mounted on the terminal board. Linearization for individual thermocouple types is performed in software by VTCC. A thermocouple that is determined to be out of the hardware limits is removed from the scanned inputs to prevent adverse effects on other input channels.

COLD JUNCTIONS:

If both CJ devices are within the configurable limits, then the average of the two is used for CJ compensation. If only one CJ device is within the configurable limits, then that CJ is used for compensation. If neither CJ device is within the configurable limits, then a default value is used. The thermocouple inputs and cold junction inputs are automatically calibrated using the filtered calibration reference and zero voltages.

IS200VTCCH1CBB Technical Specifications

Part Number IS200VTCCH1CBB

Series Mark VI

Manufacturer GE Motors and Industrial Systems

Instruction Manual GEH-6421

Product Type Thermocouple Input Terminal Board

Functional Acronym/Abbreviation VTCC

Thermocouples Supported E, J, K, S, and T types

About the IS200VTCCH1CBB

This IS200VTCCH1CBB printed circuit board product offering from General Electric was originally designed and produced specifically for placement in the Mark VI Turbine Control System Series, as asserted in this IS200VTCCH1CBB Thermocouple Terminal Board product's originally-available instructional manual materials. The Mark VI Turbine Control System Series that this IS200VTCCH1CBB Thermocouple Terminal Board product belongs to, as you were more than likely able to deduce solely based off of its full extended series name, specifically pertains to the control systems and management systems of General Electric-compatible gas, steam, and wind turbine automated drive assemblies. This intended functional application range is actually seen as quite the upgrade upon the Mark V Turbine Control System Series of the same name that came right before it, as the Mark V Series exists with a more restricted set of functional setting applications in steam and gas turbine control systems alone. With this being the case, this IS200VTCCH1CBB Thermocouple Terminal Board's greater Mark VI Series is separately an attractive GE product series on the greater automated industrial marketplace given its status as one of the final-developed GE Mark product series to incorporate the patented Speedtronic control system technology into a range of differing products.

Hardware Tips and Specifications

Model number IS200VTCCH1CBB is one of the Mark VI boards produced by General Electric. This model is designated as a thermocouple input and can accept up to twenty-four

thermocouple inputs. The inputs on this model can be wired to either the DTTC or TBTC terminal boards. The TBTC terminal board is the associated terminal board, while the DTTC board is the DIN Euro-size terminal board. Depending on the TBTC model used with the VTCC model, it can be used in two different groups. The TBTCH1C model allows for simplex control, while the TBTCH1B model allows for triple modular redundant (TMR) control. There are also two groups of the VTCC models; the IS200VTCCH1CBB model is part of the first group, which indicates that the model can be used with gas turbine control applications. No matter which group the VTCC model is used in, the same terminal boards will be used.
Given this IS200VTCCH1CBB Thermocouple Terminal Board product's attribution to the Mark VI Series, it is not surrounded by many instructional manual materials online. With this being the case, the IS200VTCCH1CBB Thermocouple Terminal Board's IS200VTCCH1CBB functional product number itself can be leveraged as a decently-strong source of IS200VTCCH1CBB Board hardware component and component specification information, as it codes for numerous relevant IS200VTCCH1CBB Board details through its characteristic selection of functional naming elements. For instance, the IS200VTCCH1CBB functional product number begins with an iteration of the dual-functional IS200 series tag delegating this IS200VTCCH1CBB product's normal Mark VI Series assembly on top of its domestic original manufacture location. Some of the other relevant hardware specifications revealed in this manner include this IS200VTCCH1CBB product's:

VTCC functional product acronym

Group one Mark VI Series product grouping

Conformal PCB coating style

Three-fold revision history

When the IS200VTCCH1CBB model is accepting thermocouple inputs, the types of inputs supported on the VTCCH1 model are E, J, K, S, and T thermocouples and mV inputs. The span of mV allowed on the VTCC model is -8 mV to +45 mV. The thermocouple inputs used with this model can be grounded or ungrounded and can be located up to nine-hundred and eighty-four feet from the associated turbine control cabinet. There are two cold junctions and high-frequency noise suppression devices mounted on the terminal board. When the IS200VTCCH1CBB model is operated in a TMR system, if one of the signals on the device varies from the median/voted value by more than the predetermined limit, then the signal will be identified and cause a fault. For more information on fault indication and available diagnostic checks on the VTCC model, refer to GE Manual GEH-6421.