NovaTech 8000 Series EBIM NT-8521-EB-NT

The NovaTech 8000 Series EBIM, NT-8521-EB-NT, is a rugged, field-mountable, D/3® 8000 I/O communications controller. Designed for process applications, redundant EBIMs provide dual redundant communications between the PCM and 8000 I/O modules for high system availability. Combined with field mounted 8000 Series I/O system components, it offers cost savings over control room mounted systems as well as flexible system design.

Key Features
- Redundancy with bumpless transfer
- Dual-redundant high-speed Ethernet connections
- Field mountable in harsh process environments
- On-line configuration and reconfiguration
- HART® pass-through of process and status variables
- Integrated general-purpose and IS signals

On-line Changes
EBIMs allow on-line configuration changes. You can add or remove EBIMs, add or remove modules, activate or deactivate points, activate or deactivate HART, and change module and point parameters all online.

Built-in Diagnostics
Extended diagnostics are available to provide module and channel status information, including high and low alarm, open circuit detection, and line fault detection at the device level and "fail-safe" perform level.

Reduced Cable Costs
Instrumentation cable pairs terminate locally instead of being run across the plant to the control room. Heavy, expensive sensor cables are replaced by the LAN cable.

High System Availability - Easy Maintenance
Maximize up-time through use of redundant EBIM controllers, power supplies, and network connections. "Hot swap" modules without affecting system operation or re-configuring even in hazardous areas.

EBIM Redundancy
Redundant EBIMs can be used for critical control applications. The redundant EBIM pair operates in parallel, checking status multiple times through the processing loop enabling the backup EBIM to continuously monitor the health of the master EBIM, assuring a rapid and bumpless transfer to the standby EBIM.

Network Redundancy
In addition to EBIM redundancy, the EBIM has two high-speed Ethernet ports to provide security of communication. Each port can be connected to an independent LAN which is continuously monitored for its integrity. The fault tolerant network protocol provides network diagnostics and manages network connnectivity. If the primary port detects a network failure, traffic is immediately switched to the other LAN to maintain full communication.

Failsafe and Automatic Cold Start
In the event of complete loss of communication the EBIM will adopt a user-defined failsafe mode and similarly instruct the I/O to take up user-defined failsafe values. In the event of power loss the EBIM will perform a cold restart.

I/O Module Configuration
The EBIM receives full details of all the I/O modules under its control and stores the information in non-volatile memory. At start-up the controller downloads to the modules their configuration details, which also include the failsafe states they should adopt in the event of communication failure.

Firmware Updates
In keeping with its ability to maintain operations on a continuous basis, redundant EBIMs are also capable of receiving a firmware upgrade. An EBIM can receive an update to its firmware while still in the field. When the upgrade has been confirmed as successful, the EBIM can be returned to full operation as a master or as a protective standby and the redundant EBIM's firmware can then be upgraded.

◆◆ NovaTech®

HART Pass-through

The EBIM has the ability to pass smart HART® information from field devices to the D/3 PCM and to a separate PC workstation. The D/3 PCM can read the additional four HART process variables associated with each 4-20 mA signal and also the instrument alarm and warning statuses. Connecting the I/O switch to a PC workstation allows you to readily interface to asset management software applications, to remotely manage the HART information contained in your HART-based field instruments. The EBIM works with a variety of asset management packages, including Endress+Hauser's FieldCare.

Hazardous Area Operation

The EBIM is designed also to operate in Class 1, Division 2, and Zone 2 hazardous areas and can control I/O modules that have field wiring extending into the more hazardous Division 1, Zone 1, and Zone 0 areas.

Grows As Your Needs Grow

The system is scalable to your needs. You can add modular I/O to your system as your needs increase. Redundant EBIMs can be added without the need to power off your system - the backup EBIM powers up automatically and is seamlessly brought online.

Environmental Stability

Like all of the 8000 Series equipment, the EBIM is designed for use in harsh environments. It operates over a temperature range of -40°C to +70°C and is resistant to shock, vibration, and corrosive environments.

Power Supplies

Each EBIM can be powered individually. NovaTech's recommends using redundant or load sharing supplies to provide power the EBIMs. The EBIM carrier can also accommodate a Power Supply Monitor module (NT-8410-NS-PS), which monitors the health signals available from up to seven power supplies and reports problems to the D/3.

8000 with Intrinsic Safety Field Wiring

The 8000 Series I/O System is also capable of supporting I/O modules with intrinsic safety (IS) field wiring, for connection to certified or 'simple apparatus' field devices in Division 1 or Zone 0 hazardous areas. A range of I/O module types with IS field circuits for industry-standard DI, DO, AI, AO, and pulse applications is supported.

Integrated IS Power Supplies

Power for IS I/O modules is derived from integrated, modular power supply units. Each power unit is capable of supplying between eight and twenty I/O modules, depending on the I/O type and mix. Optional power supply redundancy is supported by means of an additional, redundant supply unit connected in an 'n+1' arrangement. In applications with mixed IS and non-IS field wiring, the full facilities of the 'Bussed Field Power' regime are retained for the non-IS part of the system. In nodes populated only with IS I/O modules, a separate system power supply module provides power for the Bus Interface Module and 'node services'. Redundancy of this supply is also supported.

Power Supplies

Voltage...10.9 – 12.6 V dc
Current .... 0.4 A (typ.)
....0.5 A (max.)

LAN Interface

Transmission medium.....................100BaseTX or 10BaseT Ethernet
Transmission protocol................Modbus over High Speed Ethernet
Transmission rates.. 10 - 100 Mbits/s
LAN connector type (x2) RJ45 (8-pin)
LAN Insulation (Dielectric withstand)..1500 V
Action on software malfunction........................ Halt CPU / Reset CPU
Max. nodes per EMPC2...50

Serial Interfaces (COM 1 & COM 2)

Transmission rates.................................... 1.2 – 115.2 kbits/s (async.)
Transmission standard.. RS485 half-duplex
COM 1 connector (on carrier)....................9-pin D-type connector (F)
COM 2 connector (on controller) ....9-pin D-type connector (M)

Hazardous Area Approvals

Location of controller............ Zone 2, IIC T5 hazardous area ....or
Class 1, Div 2, Groups A, B, C, D T5 hazardous location
Applicable standards:

- Factory Mutual Research Co., Class No. 3611 for Class I, Division 2, Groups A, B, C, D hazardous locations
- CSA Std C22.2 No. 213 for Class 1, Division 2, Groups A, B, C, D hazardous locations
- ATEX Category 3 (for Zone 2 installation) to EN50021:1999 protection type 'n'
- UL 61010-1 "Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use; Part 1: General Requirements, 2nd Edition

Mechanical

Module dimensions ....69 (w) x 232 (d) x 138 (h) mm
Weight (approx.)... 1.35 kg

◄◆ **NovaTech**®

novatechweb.com