

# Bailey network 90®

## Analog Slave Module (RTD) NASM03

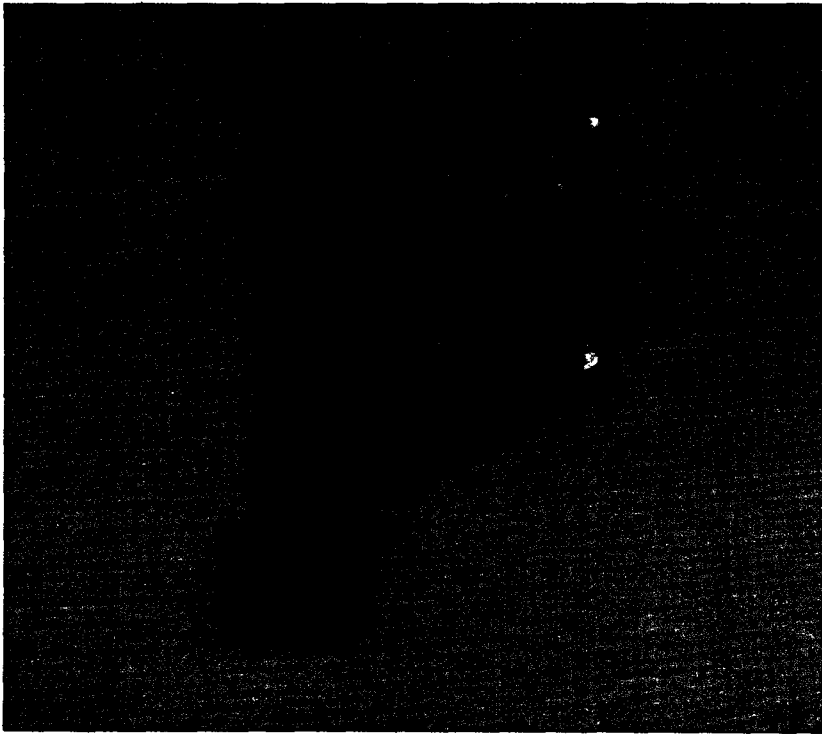


FIGURE 1 — Analog Slave Module (NASM03).

Product Instruction

E93-912-6

**WARNING**

DO NOT INSTALL, MAINTAIN OR OPERATE THIS EQUIPMENT WITHOUT READING, UNDERSTANDING AND FOLLOWING PROPER Babcock & Wilcox Bailey Controls INSTRUCTIONS AND MANUALS, OTHERWISE INJURY OR DAMAGE MAY RESULT

**AVERTISSEMENT**

NE PAS METTRE EN PLACE, REPARER OU FAIRE FONCTIONNER CE MATERIEL SANS AVOIR LU, COMPRIS ET SUIVI LES INSTRUCTIONS REGLEMENTAIRES DE Babcock & Wilcox Bailey Controls TOUTE NEGLIGENCE A CET EGARD POURRAIT ETRE UNE CAUSE D'ACCIDENT OU DE DEFAILLANCE DU MATERIEL

**Description**

The Analog Slave Module (NASM03) of the NETWORK 90® System shown in Figure 1 accepts low level Resistance Temperature Detection (RTD) signals in system applications. It is a standard module (11-1/2" x 5-1/4") which slides into a single slot in the MMU and must be adjacent to the Analog Master Module (AMM) or other Analog Slave Modules. Grouping the modules together dedicates that portion of the Expander Bus for the Analog Master Module and Analog Slave Modules. The board layout and adjustments for the Analog Slave Module are shown in Figure 2.

Functional specifications and connections are given in the specifications table.

The module processes up to eight (8) isolated RTD analog input signals. These signals are conditioned and converted to a high level signal for processing by the Analog Master Module. Communication is maintained over the Expander Bus for groups of eight (8) analog signals. Up to eight (8) Analog Slaves may be used with each Analog Master. The NASM03 is used with the NTA103 Termination Unit.

Operation and application details of the Analog Slave Module are given in Product Instruction E93-912-2 (Analog Master Module, NAMM02). The Calibration Guide is provided in the Instruction Supplement IS-E93-912-2.

**Receiving, Handling and Storage**

In addition to special MOS handling requirements, normal precautions should be taken in routine storage and handling. Upon receipt, the Module should be examined for possible damage in transit. If damage is found or if there is any evidence of rough handling, a damage claim should be filed with

the responsible transportation company and the nearest Bailey Sales Office should be notified.

Store in original packing material and container. The storage environment should be free of all environmental extremes, including temperature, moisture and air quality conditions.

**Installation**

The Analog Slave Module Inserts Into a standard NETWORK 90 Module Mounting Unit (MMU) and occupies one slot. The Module is guided by plastic rails and is fully inserted when the front panel is

flush with the top and bottom of the MMU rack and the latch engages into the MMU frame. To remove the module, release the latch by squeezing the bottom front plastic frame and pulling outward.

**CAUTION**

THIS MODULE CONTAINS MOS DEVICES WHICH CAN BE DAMAGED DURING HANDLING BY STATIC CHARGES THE CARD IS SHIPPED IN A SPECIAL ANTI STATIC BAG THAT SHOULD BE SAVED FOR FUTURE USE ALTHOUGH SURROUNDING CIRCUITRY OF THE CARD AND MODULE IS PLANNED TO PROTECT MOS DEVICES, SPECIAL MOS HANDLING PROCEDURES SHOULD BE OBSERVED A CARD SHOULD NOT BE REMOVED FROM THE ANTI STATIC BAG UNTIL READY TO BE PUT INTO SERVICE DO NOT TOUCH CIRCUITRY WHEN HANDLING CARD

NOTE MOS handling procedures include grounding of the anti-static bag prior to opening as well as the proper grounding of connected devices

**ATTENTION**

CE MODULE EST MUNI DE DISPOSITIFS MOS SUSCEPTIBLES D'ETRE ENDOMMAGES, EN COURS DE MANIPULATION. PAR LES CHARGES STATIQUES POUR LES BESOINS DE L'EXPEDITION LA CARTE EST PLACEE DANS UN SAC SPECIAL ANTI STATIQUE A RESERVER POUR USAGE ULTERIEUR BIEN QUE LES CIRCUITS SUR LA CARTE, ET LE MODULE, AIENT ETE ETUDIES POUR FOURNIR LA PROTECTION VOULUE AUX DISPOSITIFS MOS, IL N'EN DEMEURE PAS MOINS NECESSAIRE DE RESPECTER LES PROCEDURES DE MANIPULATION PRESCRITES POUR CE GENRE DE MATERIEL ON NE DOIT PAS ENLEVER LA CARTE DE SON SAC ANTI STATIQUE AVANT LE MOMENT PRECIS DE LA MISE EN SERVICE DURANT LA MANIPULATION DE LA CARTE. IL NE FAUT PAS TOUCHER AUX CIRCUITS

**WARNING**

INPUT TERMINALS AND CIRCUITS OF NASM03 AND NTA103 MAY BE AT 250 VOLTS.

**AVERTISSEMENT**

LA TENSION AUX BORNES ET CIRCUITS D'ENTREES D'UN NASM03 ET NTA103 PEUT ETRE DE 250 V.

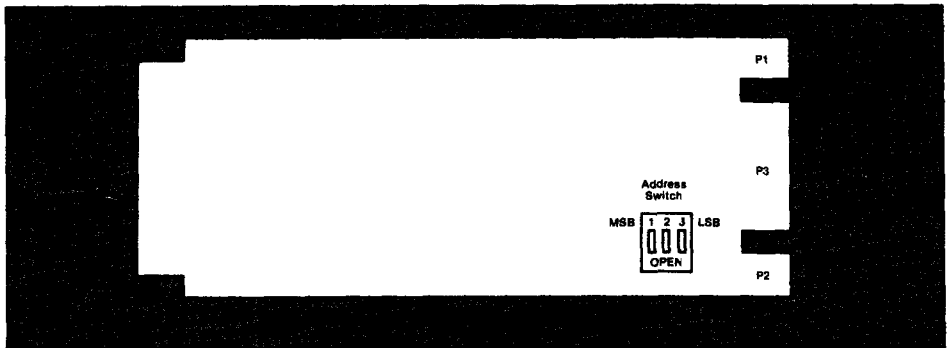


FIGURE 2 — Analog Slave Module (NASM03) Adjustments.

The Module Mounting Unit houses the system modules. It provides power and the communication buses for the modules. The Expander Bus is a series of traces across the lower part of the MMU backplane. Socket connections between module slots allow the user to connect two adjacent modules via the Expander Bus by inserting a dipshunt connector in the socket between those modules.

All twelve strap connectors on the dipshunt should be unbroken when it is inserted into a socket. All of the sockets to be used with one Analog Master

Module and slave must be joined by inserting dipshunts. These module slots must all be adjacent to each other. The sockets on either side of the Analog Master and slave group should not have dipshunts. This will isolate the Expander Bus for this specific module set.

After the dipshunts are correctly inserted, the modules can be inserted into the Module Mounting Unit.

Calibration must be done before use and also when the module is replaced (see Instruction Supplement IS-E93-91 2-2, Calibration Guide).

### Service and Replacement

No periodic maintenance is necessary for the Analog Slave Module. Module replacement and company services are available for special maintenance requirements.

Production testing is used for all NETWORK 90 modules.

**WARNING**

MOST ELECTRONIC EQUIPMENT IS INFLUENCED BY RADIO FREQUENCY INTERFERENCE (RFI) CAUTION SHOULD BE EXERCISED WITH REGARD TO THE USE OF PORTABLE COMMUNICATIONS EQUIPMENT IN THE AREA PRUDENT PRACTICE DICTATES THAT CAUTIONING AGAINST THE USE OF PORTABLE COMMUNICATIONS EQUIPMENT BE TAKEN BY POSTING APPROPRIATE SIGNS IN YOUR PLANT

**AVERTISSEMENT**

LA PLUPART DES EQUIPEMENTS ELECTRONIQUES SONT SENSIBLES AUX PERTURBATIONS DE LA FREQUENCE RADIO DES PRECAUTIONS DEVRONT ETRE PRISES LORS DE L'UTILISATION DE MATERIEL DE COMMUNICATION PORTATIF LA PRUDENCE EXIGE QUE LES PRECAUTIONS A PRENDRE DANS CE CAS SOIENT SIGNALÉES AUX ENDROITS VOULUS DANS VOTRE USINE

## Specifications

<b>Communication Interface</b>	Analog Master Module (AMM) provides serial digital communication thru Module Bus of the Module Mounting Unit (MMU) operating as part of the Process Control Unit (PCU)
<b>Input Capability:</b>	
<b>Analog Master Module (NAMM02)</b>	64 nput signals accepted from up to four (4) ASM01, eight (8) ASM02 or eight (8) ASM03 modules thru Expander Bus for any m x of modules up to 64 total inputs
<b>Analog Slave Module (NASM03)</b>	Eight (8) Isolated RTD 100 ohm Platinum IPTS 65, US Ind. Std., U.S. Lab. Std. and 120 Ohm NI Chem. Pure (Used with Termination Unit TAI03 which accommodates up to two Analog Slave Modules)
	Input Resistance Not applicable
	*Note Correction made for leadwire source resistance effects during operation on Common mode voltage for analog inputs 250 V maximum
<b>Functional Specifications:</b>	
<b>Input Scanning</b>	NAMM02 scans up to 64 analog inputs a maximum of 3 times/second and a minimum of once every two seconds depending upon configuration
<b>Signal Conditioning</b>	Input filtering A/D conversions (64 bit resolution) Linearization Engineering Unit conversion
<b>Security</b>	Failure timer periodically reset thru microprocessor operation front panel LED indicates normal operation of timer with automatic shutdown features
<b>Exception Reporting</b>	Significant input value changes reported over module bus on the basis of predetermined values
<b>Power Requirements</b>	+ 5 V dc at 400 mA (2.0 watts) maximum + 15 V dc at 80 mA (1.2 watts) maximum + 15 V dc at 45 mA (0.7 watts) maximum + 24 V dc at 6 mA (0.15 watts) maximum
<b>Pin (P2) Connections (Expander Bus)</b>	P n 1 Analog Bus + P n 2 Analog Bus P n 3 A3 P n 4 A0 P n 5 A4 P n 6 A1 P n 7 A5 P n 8 A2 P n 9 EN P n 10 ACK P n 11 N/C P n 12 156 KHz

<b>Pin (P1) Connections</b>	Pin 1 +5 V dc Pin 2 +5 V dc Pin 3 Open Pin 4 Open Pin 5 Common Pin 6 Common	Pin 7 +15 V dc Pin 8 -15 V dc Pin 9 PFI Pin 10 PFI Pin 11 Open Pin 12 Open
	PFI Power Fail Interrupt	
<b>Pin (P3) Connections</b>	Pin A A Pin 1 B Pin 2 C	Channel 1 Input
	P n C A P n 3 B Pin 4 C	Channel 2 Input
	P n E A P n 5 B Pin 6 C	Channel 3 Input
	P n H A Pin 7 B P n 8 C	Channel 4 Input
	Pin K A Pin 9 B Pin 10 C	Channel 5 Input
	P n M A Pin 11 B Pin 12 C	Channel 6 Input
	P n P A Pin 13 B P n 14 C	Channel 7 Input
	P n 15 A Pin 15 B P n R C	Channel 8 Input
	Pin L +24 V dc	Present when cable is connected to normal socket on Terminal on Unit NTAI03
	P n N	System Common from Terminal on Unit NTA03
<b>Termination Unit (NTAI03)</b>	Standard Terminal on Unit with lug and screw connection for "edge" Ring Cable NKTU01 used to connect Terminal on Unit with Slave Module NTA03 has precision reference resistors to facilitate calibration of NASM03	
<b>Mounting</b>	Standard single slot mounting in Module Mounting Unit (MMU) adjacent to the Analog Master or Slave Module	
<b>Certification</b>	CSA certified as process control equipment for use in ordinary (non-hazardous locations)	
<b>Environmental Specifications</b>	Standard environmental specifications for the system are applicable (CE93-900)	

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

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