

RT406-2C Rotary Temperature Transmitter (852-400)

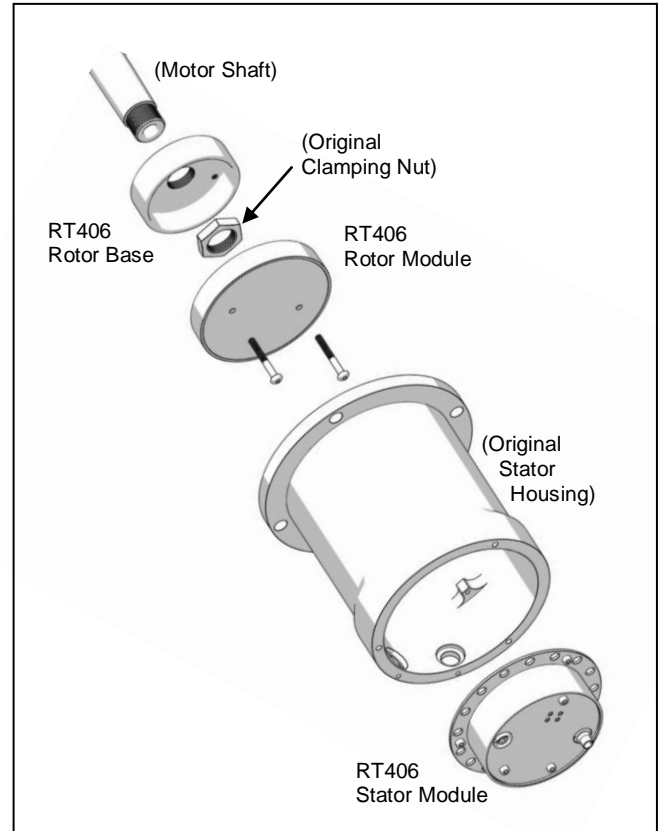
The RT406-2C is a multi-channel temperature measurement system designed to monitor and control temperature on heated godet roll shells. The system features Dual CAN bus digital communication and is a drop-in replacement for the 6-channel Neumag Multichannel Godet Controller used on Neumag S5 and NPT machines.



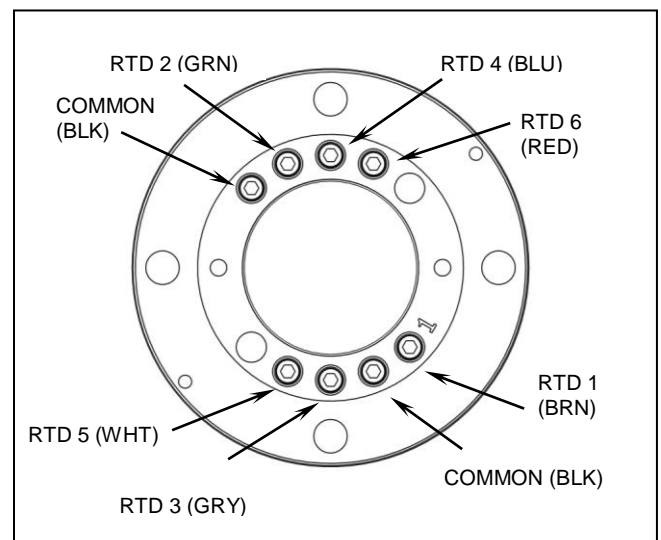
Installation

(Refer to diagram)

1. Disconnect cables and remove existing transmitter system from motor, including stator, rotor, and rotor base.
2. Remove cover, circuit board assembly, and connectors from original Stator Housing.
3. Set DIP switches 1 thru 5 on the RT406 stator to match the switch settings on the original stator circuit board.
4. Set DIP-switch 6 to the OFF position.
5. Install Binsfeld RT406 Stator Module in housing and secure with three screws.
6. Remove RT406 Rotor Module from metal Rotor Base by removing 2 screws.
7. Screw RT406 Rotor Base on motor shaft and secure with original clamping nut.
8. Insert RTD leads in terminals on Rotor Module per diagram below and secure firmly with setscrews.
9. Reinstall Rotor Module on Rotor Base (2 screws) with RTD lead wires contained in base. (Binsfeld recommends using removable Loctite 222MS or equivalent to secure Rotor screws.)
10. Mount Stator Housing to motor. (Do not reinstall Stator Housing cover.)
11. Connect CAN bus interface cables to Stator Module.
12. Strain relief cables with tie wraps.
13. Discard original cover, stator circuit board, rotor module, and base.



Installation Diagram



Rotor-RTD Wiring Diagram (Note color code)

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Troubleshooting

Four green LEDs are used to indicate the operational status of the RT406 system. If all LEDs are on solid, the system is operating properly. If there are any flashing, flickering or LEDs off, there is a problem or error in operation.

Stator LED

On solid: The Stator is functioning properly.
Flash: Power supply error, power supply out of range.
Off: No/Low power or fatal stator circuit error.

Rotor LED

On solid: Data is being received from the Rotor and all RTDs are in range.
Flash slow: Intermittent data from the Rotor.
Flash fast: One or more of the RTDs measured out of range (possibly open or shorted).
Off: No data from the Rotor.

CAN 1 LED

On solid: Messages are being properly sent and received on CAN bus 1.
Flash/flicker: Intermittent errors on CAN bus 1.
Off: No communication on CAN bus 1.

CAN 2 LED

On solid: Messages are being properly sent and received on CAN bus 2.
Flash/flicker: Intermittent errors on CAN bus 2.
Off: No communication on CAN bus 2.

Fault Condition Display Codes

When a fault condition exists the following temperature will be displayed:

Fault Condition	Display Value
System Resetting	252
RTD sensor out of range low (including short)	253
RTD sensor out of range high (including open)	254
Rotor data error	255

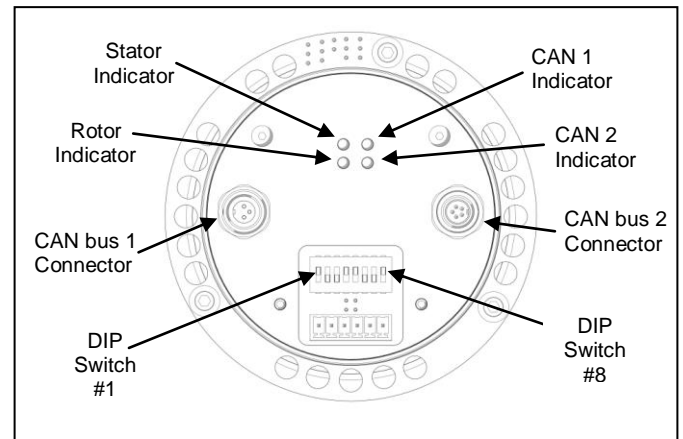
Specifications

Rotor:	Number of sensors:	6
	Sensor connection:	M3 set screw terminals with 2.38mm hole for ferrule access
	Input sensor type:	PT1000 RTD (1000 ohm at 0°C, alpha = .00385)
	Sensor range:	0 – 300°C
	Speed:	10,000 RPM
Stator:	I/O Connectors:	CAN 1: 3-socket (Tyco Electronics PN: 6-1437719-6) CAN 2: 5-pin (Tyco Electronics PN: 6-1437719-5)
	I/O signals:	CAN bus 1: 125k baud for communication with operator interface CAN bus 2: 100k baud for communication with heater power controller
	Power Input:	17 – 30 VDC, 500mA (max)
General:	Accuracy (max error)	±0.5°C (max over ambient operating temperature range for 0-300°C RTD range)
	Operating Temperature	0 – 85°C

This document is subject to change without prior notification.

Warranty

Binsfeld Engineering Inc. warrants that its RT406 Series Transmitters will be free from defective materials and workmanship for a period of two years from the date of delivery to the original purchaser and that its products will conform to specifications and standards published by Binsfeld Engineering Inc. Upon evaluation by Binsfeld Engineering Inc., any product found to be defective will be replaced or repaired at the sole discretion of Binsfeld Engineering Inc. Our warranty is limited to the foregoing. Binsfeld Engineering Inc. disclaims any warranty of merchantability or fitness for intended purpose.



Status Indicators

DIP Switch

The 8 position DIP switch is used to set the node address on CAN bus 1. It also is used to select termination resistors on CAN bus 1 and 2 if needed. (The DIP switch is located under the Switch cover.)

Switches 1 – 5

These 5 switches set the CAN bus 1 node address. Set them the same as the unit that is being replaced.

Switch 6

Must be **OFF** for normal operation.

Switch 7

When on, this switch connects a 120 Ω termination resistor across the CAN bus 1 lines. Leave **OFF** for normal operation.

Switch 8

When on, this switch connects a 120 Ω termination resistor across the CAN bus 2 lines. Leave **ON** for normal operation.

Revision History

<u>Rev</u>	<u>Date</u>	<u>Initials</u>	<u>Changes</u>	<u>Reason</u>
A	01/09	SBT	Original Draft based on 852-013 Rev A	
B	04/09	SBT	Added note to remove stator cover and do not reinstall. Deleted instruction to mount stator with empty holes downward. Added Loctite recommendation for Rotor. Added "-2C" to model number.	
C	09/09	SBT	Misc minor edits to text throughout. Added Step 12 – Discard.... Changed component labels (e.g. added "RT406") to clarify what BEI provides. Added note that DIP switch is under Stator cover. Deleted erroneous reference to 'wiring diagram on next page'.	
D	10/09	SBT	Dip Switch 6,7,8 "off for normal operation."	
E	02/10	SBT	Added Step instruction to turn DIP switch 6 OFF.	
F	01/11	KBH	Updated with New Stator and Switch setting drawings Changed Switch 8 to be ON for normal operation.	
G	03/11	KBH	Changed Accuracy Specification to "±1.0°C (over ambient operating temperature range for 0-300°C RTD range)"	
H	08/11	SBT	Changed Accuracy Specification to "±0.5°C (maximum over ambient operating temperature range for 0-300°C RTD range)"	
I	6/16/15	CB	Modified to the New Style 2-Page User's Guide.	
J	7/25/16	CB	Added color-coding to all posts on the rotor for colored washers.	

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