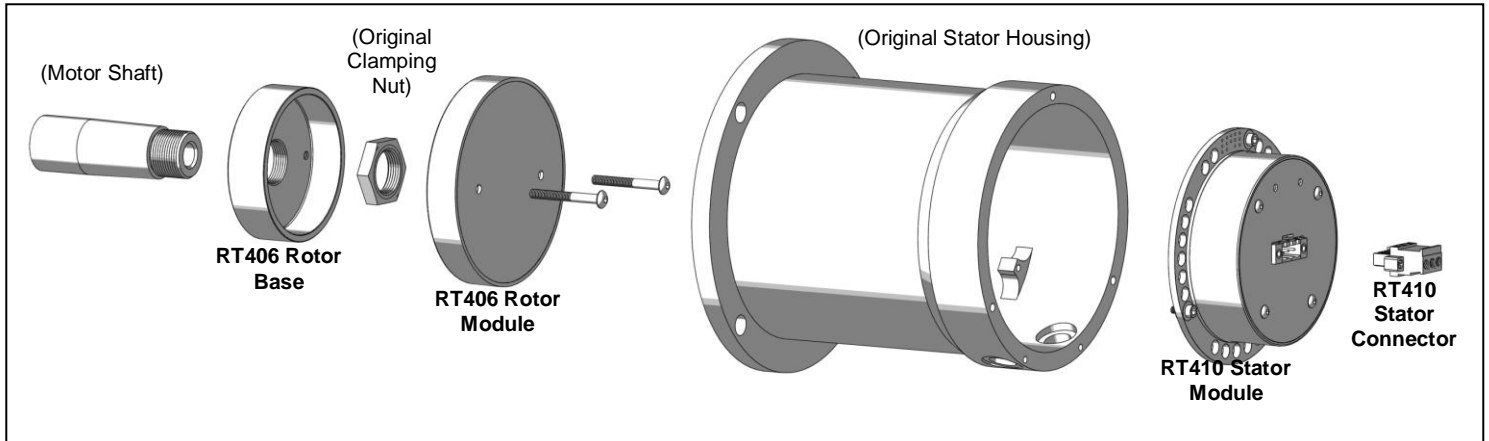


# RT416-PB Rotary Temperature Transmitter (852-500)

The RT416-PB is a multi-channel temperature measurement system designed as an upgrade for CAN bus systems to monitor and control temperature on heated godet roll shells on filament spinning machines. The system features built-in PID loop control, generous rotor/stator clearance (5 - 25mm) and Profibus DP digital communication. It consists of three main components: Controller, Rotating Module (with mounting base), and Stationary Module.

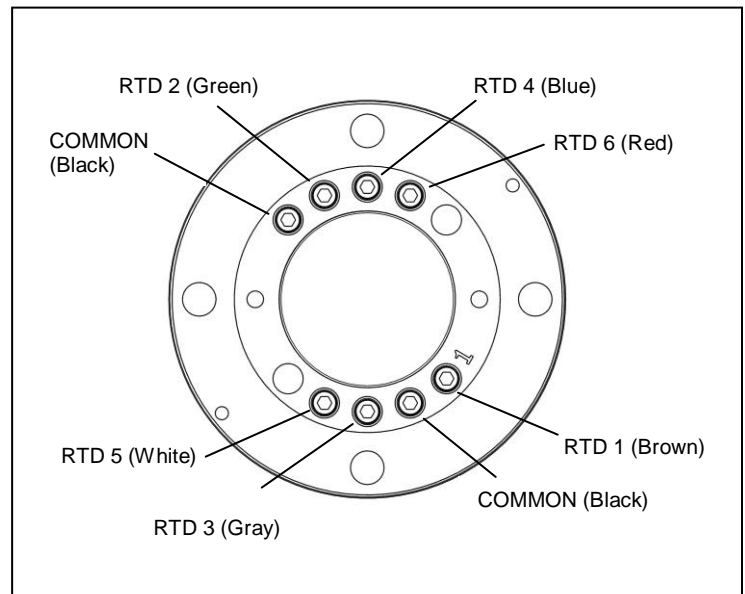


Installation Diagram

## Installation

(Refer to Installation Diagram)

1. Completely remove existing temperature transmitter from motor. Retain Clamping Nut and Stator Housing.
2. Install Binsfeld RT410 Stator Module in housing and secure with three screws.
3. Remove RT406 Rotor Module from metal Rotor Base by removing 2 screws.
4. Screw RT406 Rotor Base on motor shaft and secure with original clamping nut.
5. Insert RTD leads in terminals on Rotor Module per diagram below and secure firmly with setscrews.
6. 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.)
7. Mount Stator Housing to motor.
8. Mount Controller on DIN rail in instrumentation cabinet or similar location, ideally away from spin finish and other contaminants. Leave 1" inch clearance above and below enclosure to allow airflow for cooling.
9. Connect Stator Module (+Vstat, -Vstat and Shield) to Controller with user-supplied interface cable per "RT410 Stator-Controller Cable" drawing below.
10. Consider providing strain relief for cables using tie wraps or similar.



Rotor-RTD Wiring Diagram (Note color code)

# RT416-PB Rotary Temperature Transmitter (852-500)

## Stator Indicators

There are 2 status indicator lights on the RT410 Stator:

### Power Status

On: Power supply voltage level is within range

Dim or Off: Power level is too low to operate

### Data Status

On: The Stator is transmitting data to the Controller

Dim or Off: The Stator is not successfully transmitting data to the Controller

## Controller Indicators

There are 4 indicator lights on the RT410 Controller front panel. When the Controller is powered up, all indicators turn on solid for 1 second. They then indicate the operational status of the RT410 system as described below:

### Power

On: Power supply voltage level is within range

Flash: Power supply level is out of operating range

Off: No power or power level is too low to operate

### Bus

On: Field bus communications are operating normally

Flash: Communication errors detected

Off: No field bus communication or communication time-out.

### Stator

On: Rotor and Stator are operating properly

Flash: Communication or power errors detected

Off: No communication from Rotor/Stator

### RTD

On: All RTDs measure within range

Flash: One or more RTDs measure out of range (open, short, unstable)

Off: No communication from Rotor/Stator

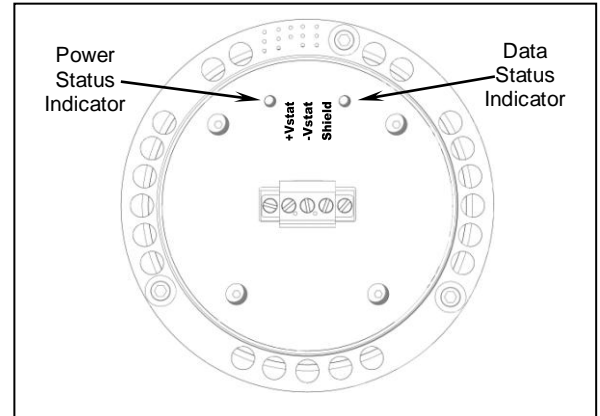
## Specifications

<b>Rotor:</b>	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 (max)
	Operating temperature:	0 – 85°C
<b>Stator:</b>	I/O connector:	3-conductor pluggable screw terminal
	Operating temperature:	0 – 85°C
<b>Controller:</b>	Supply voltage:	24VDC (±5VDC)
	Supply current:	500mA (max), 250mA (nom), 1000mA fuse protected
	Supply connector:	2-conductor pluggable screw terminal
	Communication connection:	DB-9F (with standard Profibus pin-out) for operation as Profibus-DP slave; DIP switch for node address setting)
	Operating temperature:	0 – 70°C
	System accuracy	±0.5°C (maximum over ambient operating temperature range for 0-300°C RTD
	(maximum error):	range)

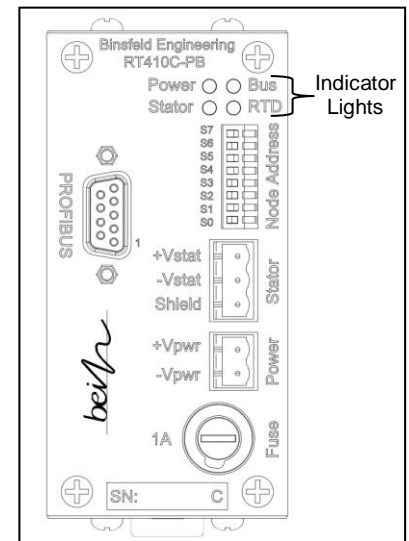
This document is subject to change without prior notification.

## Warranty

Binsfeld Engineering Inc. warrants this product to be free from defective materials and workmanship for a period of two years from the date of delivery to the original purchaser and that this product 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.



Stator Indicator Lights



Controller Indicator Lights

# RT416-PB Rotary Temperature Transmitter (852-500)

## System Communications

The Profibus communications is described in the “RT416-PB PROFIBUS Communications Specification” manual, part number 852500-C\_B. This manual will give complete details on Parameterization Message, Data Exchange Message, Special Temperature Codes, etc.

Details for connecting the RT410S stator to the RT410C controller are shown in the print below.

