RT376 Rotary Temperature Transmitter (853-001)

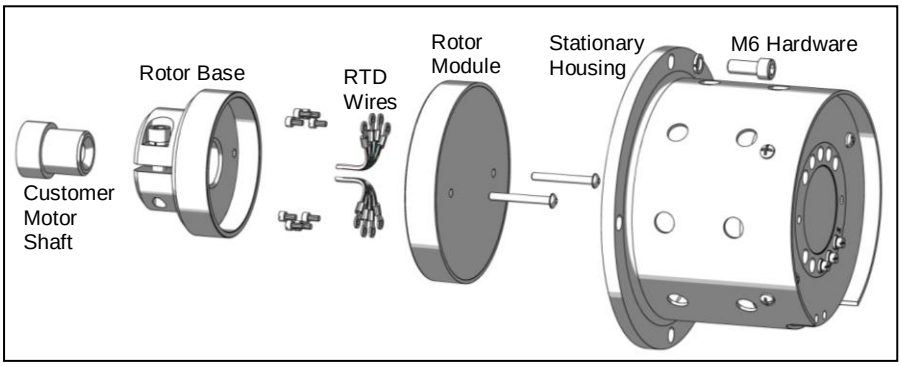
The RT376 is a six-channel temperature measurement system designed to monitor temperature on heated godet roll shells. The system features a linear 4-20 mA output from the controller interface for use with standard process controllers. Error detection modes protect the heater from damage and expedite troubleshooting in the event of a sensor or other failure. Digital circuitry from sensor input to signal output and generous clearance between the rotating and stationary components make the RT376 a robust and reliable element in the temperature feedback loop.

Installation

1. Remove RT376 rotor module ("RT406") from the rotor base.

2. Slide the RT376 rotor base onto the shaft until it stops. Secure with provided M6 socket head cap screws & hi-collar lock washers.

3. Attach ring lugs from the RTD sensor to RT376 rotor module ("RT406") terminals and tighten securely. (See diagram below.)



Installation Diagram

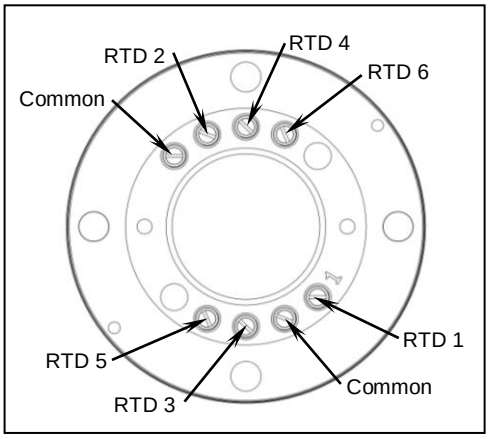
4. Attach RT376 rotor module ("RT406") onto the rotor base. Use Loctite Threadlocker 222MS or equivalent.

5. Mount stationary housing assembly to motor with M6 hardware provided.

6. Connect the stator to the RT376C interface using the cable provided.

7. Secure the interface cable to the stator using the cable tie provided.

8. Refer to the Wiring Code and diagrams below for connecting the heater control system to the RT376C signal output terminals.



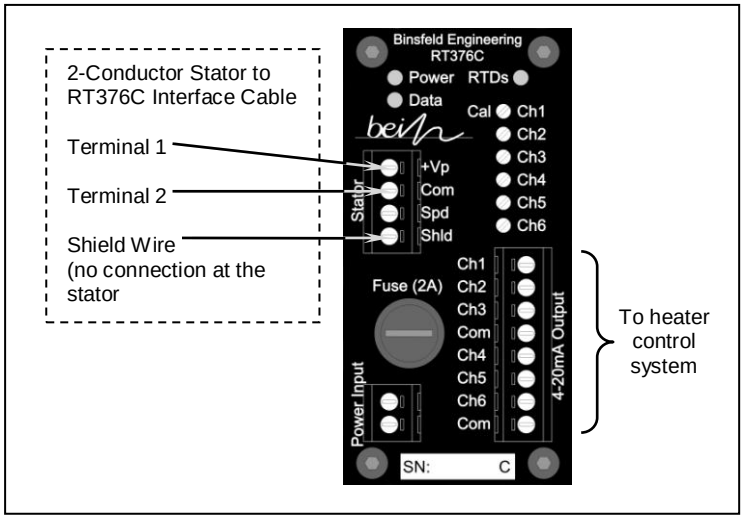
Rotor/RTD Wiring Diagram

Stator Wiring Code

Terminal 1: Supply voltage
(+Vp) (+12 VDC nominal) (red)
Terminal 2: Supply Voltage low (Common) (black)
Terminal 3: Speed output (not used)

Stator to RT376C Controller Interface Connections

+Vp to Stator Terminal 1 (red)
Com to Stator Terminal 2 (black)
Spd Not used
Shld (this is the shield wire of the stator to controller interface cable. The shield only connects at the controller interface end. i.e. no connection at the stator.)



Stator/Controller Interface Wiring Diagram

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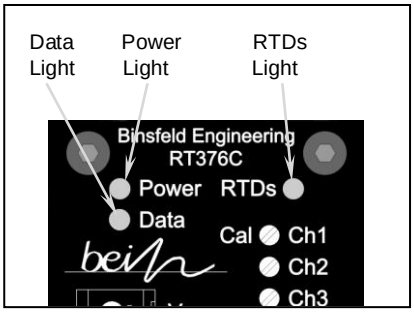
Troubleshooting

There are 3 Lights on the RT376C Controller Interface front panel. They are labeled “Power”, “Data” and “RTDs”. When the Lights are on solid, there is no error indicated. When they are flashing an error has been detected as described below:

Flashing Indicator	Error Indicated	4-20mA current out error condition	Troubleshooting (in order listed)
Power	Power supply error detected.	All outputs to 24mA	Check power input connections, wiring, swap controller interface
Data	Data from Rotor/Stator in error.	All outputs to 23mA	Check rotor/stator connections, wiring, swap stator and/or rotor
RTDs	RTD(s) measure out of Range	Affected output(s) to 22mA	Check RTD connections, wiring, swap rotor.



Indicator Lights Diagram

If the status lights do not agree with conditions listed above, remove power to the RT302C for 5 seconds, and then restore power (to reset the digital circuitry).

Specifications

Rotor:	Number of sensors:	6
	Sensor connection:	M3-0.5 screw terminals
	Input sensor type:	PT100 RTD (100 ohm at 0°C, alpha = .00385)
	Sensor range:	0 – 300°C
	Speed:	10,000 RPM
Stator:	Connector:	M3-0.5 screw terminals
	Power input:	(+V): 11 – 15 VDC
Controller Interface:	Output connection:	Quick connect screw terminal block, 8-conductor
	Output signal:	4-20mA
	Power input:	20-36 VDC or 15-25 VAC, 2A max, 0.5A nominal
General:	Accuracy (typical error):	±0.15% span over 25 – 100°C ambient temperature range ±0.30% span over operating temperature range
	Operating temperature:	0 – 100°C
	Humidity:	0 – 90% RH, non-condensing

This document is subject to change without prior notification.

Warranty

Binsfeld Engineering Inc. warrants that its RT370 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.