SMART BEARINGS

DODGE®

BEARINGS

DODGE SMART BEARINGS OFFER EARLY WARNINGS WHEN CONDITIONS CHANGE TO SUPPORT PREDICTIVE MAINTENANCE PROGRAMS.

The housings are pre-drilled for a variety of sensor kits that measure temperature, speed, and vibration. They are easy to specify, assemble and connect.

Available from stock in TAF, USAF, and ISAF, all popular bore sizes 2-7/16" through 6-15/16". Housings and associated sensor kits are stocked and ordered separately. Sensor kits are assembled on smart housings by users at the time connection wiring is done.



HOW TO ORDER ISAF SMART STOCK SELECTIONS

STEP 1: The Housing Choices

- ISAF housings with embedded thermocouple probe and adapter plate.

Shaft Size	Series	Part Numbers Drilled Housing For Temperature or Vibration
207	515	063765
215	517	063766
307	520	063767
315	522	063768
407	526	063769
415	528	063770

STEP 2: Bearing Insert

- Select insert based on shaft size and seal choice. Locknut contains holes for prox target attachment.

Shaft Size	Contact Seal	Labyrinth Seals
207	070895	070927
215	070899	070931
307	070903	070935
315	070906	070938
407	048385	048389
415	048386	048390

STEP 3: The Sensor Choices

- For speed monitoring, select Prox Cover and AC Prox kit.
- For temperature monitoring, select Thermocouple Transmitter kit.
- For temperature and vibration monitoring, select 4-20 mA Accelerometer and Thermocouple kit.

Prox Covers		
Shaft Size	**Housing Series**	**Part Number**
207	515	063771
215	517	063772
307	520	063773
315	522	063774
407	526	063775
415	528	063776

ISAF Sensor Kits	Part Number
AC Prox	055940
Thermocouple Transmitter	055931
4-20 mA Accelerometer and Thermocouple	067576

BALDOR®

HOW TO ORDER TAF SMART STOCK SELECTIONS

STEP 1: The Housing Choices – Standard or Drilled

- When speed only will be monitored, select the standard housing.
- When vibration, and/or temperature will be monitored, select the drilled housing.
- All housing part numbers shown are 4-bolt base, non-expansion.

STEP 2: Pick an S-1 Unit

Smart S-1 units feature:

- Embedded thermocouple
- Drilled and tapped holes for prox covers
- Special locking collar with prox targets

STEP 3: The Sensor Choices

- For speed monitoring, select Prox Cover and AC Prox kit.
- For temperature monitoring, select Thermocouple Transmitter kit.
- For temperature and vibration monitoring, select 4-20 mA Accelerometer and Thermocouple kit.

Shaft Size	Series	Part Numbers For Standard Housing Monitoring Speed Only	Drilled Housing Part Numbers For Temp. and/or Vibration
207	515	037548	053067
215	517	037550	053628
307	520	037551	067350
315	522	037552	054960
407	526	037553	067352
415	528	037554	067353
507	532	042628	067354
515	534	042630	067357
615	538	042634	067234



Shaft Size	S1 Unit
207	055805
215	055806
307	055807
315	049235
407	055915
415	055840
507	067355
515	067356
615	067323



Prox Covers		
Shaft Size	Housing Series	Part Number
207	515	067340
215	517	067342
307	520	067343
315	522	067344
407	526	067345
415	528	067346
507	532	067343
515	534	067347
615	538	067348

TAF Sensor Kits	Part Number
AC Prox	055943
Thermocouple Transmitter	055931
4-20 mA Accelerometer and Thermocouple	067576



HOW TO ORDER USAF SMART STOCK SELECTIONS

STEP 1: The Housing Choices

- All smart housings feature an embedded thermocouple.
- When speed is monitored, select cast-closed end.
- For temperature and/or vibration monitoring without speed, both sides open may be selected.
- For speed, as well as temperature and vibration monitoring, select cast closed end.
- Stab rings are included with all housings.

STEP 2: The Sensor Choices

- For speed monitoring, select Prox Cover and AC Prox kit.
- For temperature monitoring, select Thermocouple Transmitter kit.
- For temperature and vibration monitoring, select 4-20 mA Accelerometer and Thermocouple kit.

STEP 3: Other parts you will need to order

- If monitoring speed, you will need a special SNW.
- If you are not monitoring speed, you can use a standard SNW. Special SNW's feature a modified nut with prox targets.

Size	Housing Series	4B Both Sides Open Part Number	4B Cast Closed End Part Number
207	515	067501	067503
215	517	067509	067511
307	520	067517	067519
315	522	067520	067521
407	526	055572	055654
415	528	055734	055906
515	534	057958	055881
615	538	055876	057966

USAF Sensor Kits	Part Number
AC Prox	055940
Thermocouple Transmitter	055931
4-20 mA Accelerometer and Thermocouple	067576



Bearings

Size	Bearing Series	Part Number
207	22251K	422001
215	22217K	422005
307	22220K	42009
315	22222K	422011
407	22226K	422015
415	22228K	422017
515	22234K	422023
615	22238K	422027

Adapters

Size	Special SNW Part Number	Standard SNW Part Number
207	055740	046354
215	055710	046358
307	0557140	046361
315	055712	046363
407	055716	046431
415	055907	046433
515	055898	043620
615	067326	043624

Seals

Size	TRIPLE-TECT Part Number	DROP-IN TRIPLE-TECT Part Number	LER Part Number	Taconite Part Number
207	043542	039538	042514	042380
215	043546	039530	042518	042382
307	043549	039859	042521	042383
315	043551	039861	042523	042384
407	043554	039864	042526	042385
415	043556	039866	042528	042387
515	043560	NA	0425533	042389
615	043564	NA	042537	042392

THERMOCOUPLE TRANSMITTER KIT 055931

Product Description

The Thermocouple Sensor is a factory-installed sensor that monitors the temperature of a DODGE Sensorized bearing. The Thermocouple Sensor is epoxied into a hole in the bearing housing which is positioned to measure the temperature of the outer race of the bearing. The cast iron housing assures good thermal conductivity over this distance to provide an accurate representation of the bearing temperature. A thermocouple transmitter conditions the microvolt output of the thermocouple into a 4-20 mA current proportional to the temperature of the bearing. The thermocouple transmitter output is adjusted to a temperature range of 0° to 250°F and can be read by PLC Analog Input cards with an internal loop power supply.

Specifications

Thermocouple	Type J
Temperature Range	0° - 250° F
Accuracy	+/- 0.5°F
Output Current	4 - 20 mA
Supply Voltage	8.5 - 35 V
Enclosure	Exceeds NEMA 4 Rating NEMA 4X Option Available
Max. Loop Resistance	$\frac{\text{V supply -8.5V}}{\text{0.02 A}}$

ACCELEROMETER & THERMOCOUPLE ADAPTABLE KIT-067576

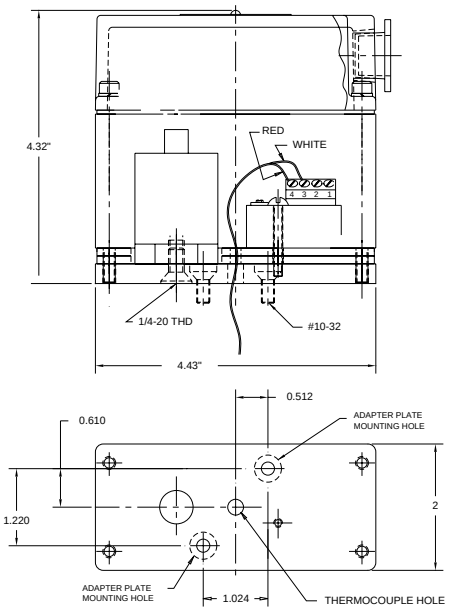
Product Description

The Accelerometer and Thermocouple Adaptable Kit can monitor vibration and temperature on a variety of equipment. The output of the accelerometer is 4-20 mA, 4 mA represents zero in/sec and 20 mA represents 2 in/sec. The thermocouple transmitter is the same as in the Thermocouple Transmitter Kit 055931.

Installation

1. Use the mounting plate as a template to make the two mounting holes and the thermocouple hole.
2. Drill and tap two holes for 10-32 screws. The depth of the holes is 0.53 inch.
3. Epoxy the thermocouple in its hole using high temperature epoxy and let the epoxy dry.
4. Mount the plate using the two 10-32 screws provided.
5. Mount the rest of components as shown in figure.
6. Use the enclosure to make the field connections using electrical nuts.
7. A half-inch flexible conduit can be attached to the enclosure to protect the field wiring.

* Steps 1–3 only required if not using pre-drilled housings



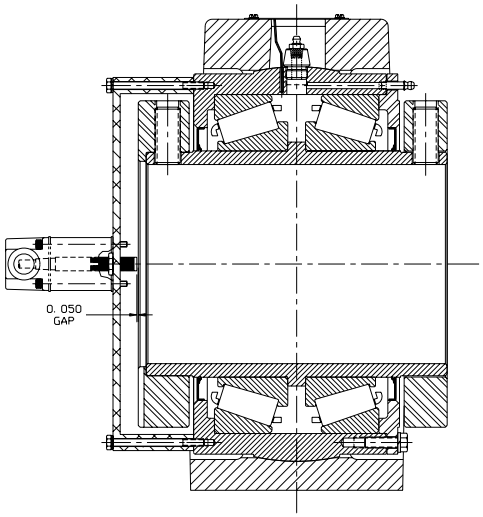
SPEED PICKUP PROXIMITY SWITCH

Product Description

The Speed Pickup Proximity Switch is a sensor kit that monitors the shaft rotational speed of DODGE bearings. The Speed Pickup Proximity Switch senses the presence of two targets on a special collar or locknut inside the sensorized bearing housing. When a target comes into range, the proximity switch closes, allowing the supplied voltage to pass through. The time between the two pulses per revolution may be measured to determine the shaft speed.

Specifications

AC Proximity Switch Specifications Maximum Switching Frequency	
TAF Bearings	35 Hz (700 RPM)
USAF, ISAF Bearings	20 Hz (400 RPM)
Current	
Load Current	5 - 250 mA
Maximum Leakage Current	1.7 mA
Maximum Inrush Current (1 cycle)	2A
Minimum Supply Current	5 mA
Operating Voltage	40-250V AC
Volt. Drop	6.5VAC @ 500mA,10VAC @ 20mA
Repeatability	less than 1%
Hysteresis (Typ.)	less than 7%
Operating Temperature	-25° C to 70° C



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