

# TORQUE LIMITER FOR GEARBOXES

(SAFETY COUPLINGS)

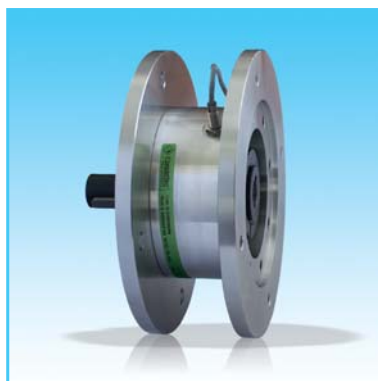
Up to 2.600 Nm of torque and 65 mm bore

.../PR



**ComInTec**<sup>®</sup>  
Technology for Safety

## .../PR - torque limiter for gearboxes: introduction



- ⦿ Safety coupling made in steel fully turned, spacer made in aluminium fully turned.
- ⦿ Standard treatment of phosphating on torque limiter.
- ⦿ Compact solution.
- ⦿ Model available for IEC motors and gearboxes.
- ⦿ Protection in both directions.
- ⦿ Instant disengagement upon overload.
- ⦿ Fast and simple calibration using our "H" dimension procedure.
- ON REQUEST
- ⦿ Device calibrated and ready to use.
- ⦿ Friction rings available in various materials and performance to suit specific needs.
- ⦿ Customized versions possible.
- ⦿ Various anti-corrosive surface treatments available.

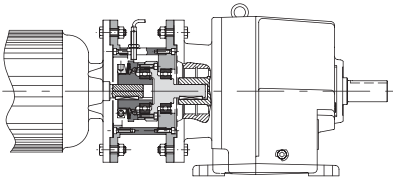
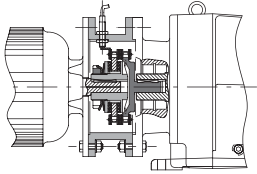
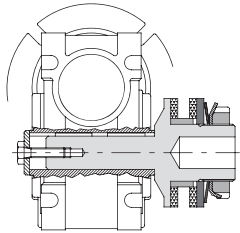
Safety coupling to be mounted between the motor and gearbox with flanged B5 spacer. Available in sliding (DF/TAC/PR-V) and disengage versions (DSS/F/SG/PR-V). The location of the limiter between the motor and gearbox requires a smaller size of device with also reduces costs.

### ■ MAIN APPLICATION

- ⦿ Conveyor.
- ⦿ Packaging machines.
- ⦿ Wrapping machines.
- ⦿ Motorized systems of handling and positioning.

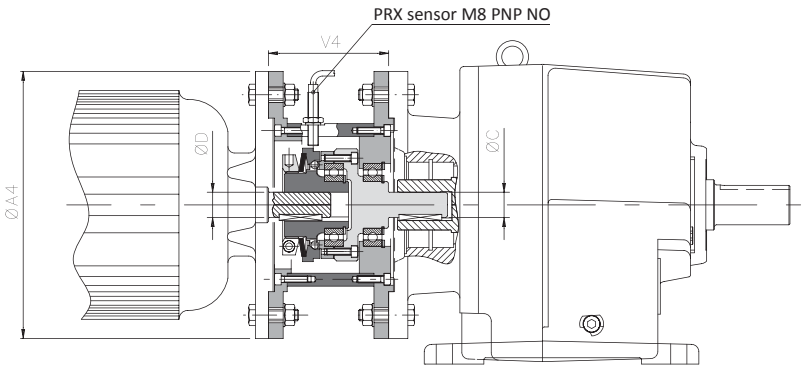
### ■ ADVANTAGES AND BENEFITS

- ⦿ Simplicity and sensitivity compared to gearbox integrated solutions.
- ⦿ Protect the motor-gearbox from accidental collisions or impacts from the products being processed.
- ⦿ Greatly reduces production downtime in case of overload.
- ⦿ Absorb static torques without disengaging (friction model).

|                                                                                     |                                                                                         |                                                                    |         |
|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|--------------------------------------------------------------------|---------|
|  | DSS/F/SG/PR-V: Backlash free balls model to fit between motor and gearbox.              | From 3 to 720 Nm of torque<br>48 mm max. bore / shaft              | Page 57 |
|  | DF/TAC/PR-V: Friction model chain coupling version to fit between motor and gearbox.    | From 1 to 1200 Nm of torque<br>55 mm max. bore / shaft             | Page 58 |
|  | DF/PR: Friction model to assemble directly into the output of the hollow shaft gearbox. | From 1 to 2600 Nm of torque<br>65 mm max. bore<br>55 mm max. shaft | Page 59 |

DSS/F/SG/PR-V - backlash free balls model for gearboxes (input shaft): technical data

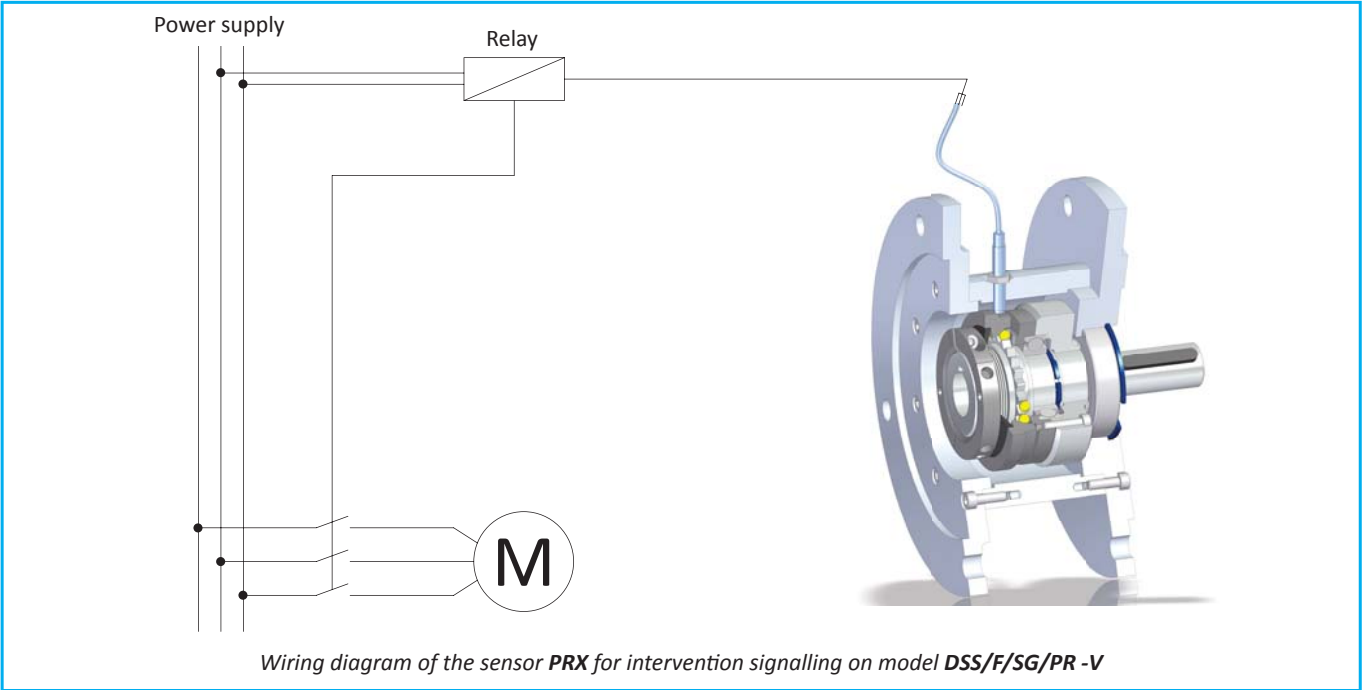
- Balls solution, torsional backlash free in negative version, maintenance free.
- Instant disengagement between driving part and driven part in the event of overload.
- Available with single point (360°) engagement.
- Complete solution with connecting flanges in aluminum for IEC B5 motors.
- Inductive sensor integrated for monitoring the overload.
- Torque range: 2-720 Nm; bore/shaft max ø48 mm.



DIMENSIONS AND TECHNICAL CHARACTERISTICS

| Size    | Torque [Nm] |           |          |            | Motor IEC    | DSS/SG/PR-V | B5 Flange |      | Max speed [Rpm] | Weight [Kg] |
|---------|-------------|-----------|----------|------------|--------------|-------------|-----------|------|-----------------|-------------|
|         | T1          | T2        | T3       | T4         |              | D H7 - C h7 | A4        | V4   |                 |             |
| 00.47   | 3 - 7,5     | 5 - 15    | 8,5 - 23 | -          | ▲ 32         | 11          | 90        | 53   | 4000            | 1,1         |
|         |             |           |          |            | 63a          | 11          | 140       | 52,5 |                 | 1,4         |
|         |             |           |          |            | 71a          | 14          | 160       | 54,5 |                 | 1,6         |
| 0.63    | 5 - 14      | 12 - 28   | 24 - 50  | -          | 80a          | 19          | 200       | 78   | 4000            | 2,8         |
| 1.80    | 9 - 28      | 18 - 60   | 40 - 100 | -          | 90s          | 24          | 200       | 90   | 3000            | 3,9         |
| 2.96    | 20 - 45     | 42 - 95   | -        | 85 - 200   | 100La - 112M | 28          | 250       | 110  | 2500            | 5,2         |
| ▲ 3.116 | 35 - 100    | 75 - 200  | -        | 195 - 415  | 132M         | 38          | 300       | 110  | 2000            | 12,5*       |
| ▲ 4.138 | 75 - 190    | 140 - 345 | -        | 245 - 720* | 160L         | 42          | 350       | 126  | 1850*           | 26*         |
|         |             |           |          |            | 180L         | 48          |           | 126  |                 | 28*         |

FITTING EXAMPLE



Wiring diagram of the sensor PRX for intervention signalling on model DSS/F/SG/PR-V

▲ On request

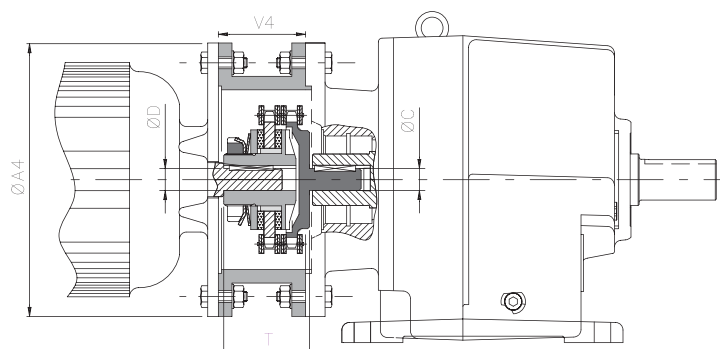
NOTES

- **Max speed\***: for size 4.138 DSS/F/SG/PR-V if used with the springs set T4 the maximum speed is 1500 Rpm.
- **Weight\***: the connection flanges for size 3.116 and 4.138 are in steel.

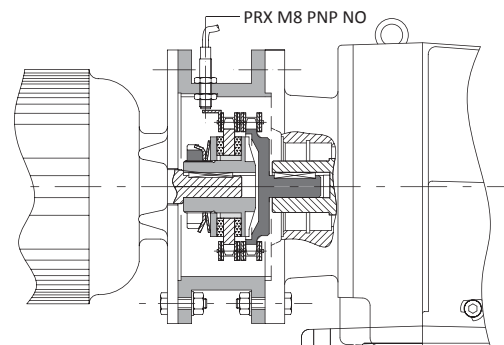
## DF/TAC/PR-V - friction model with chain coupling for gearboxes (input shaft): technical data



- Compact and economic solution.
- Sliding of the driving part to overcome the torque calibration without disconnecting the transmission.
- Silent intervention and vibration-free.
- Complete solution with connecting flanges in aluminum for IEC B5 motors.
- Possibility of integration of an inductive sensor for monitoring the overload (DF/TAC/PR-V/S).
- Torque range: 1-1.200 Nm; bore/shaft max:  $\varnothing 55$  mm.



DF/TAC/PR-V (without sensor) → spacer **type A** (with inspection)  
 spacer **type B** (without inspection) ▲

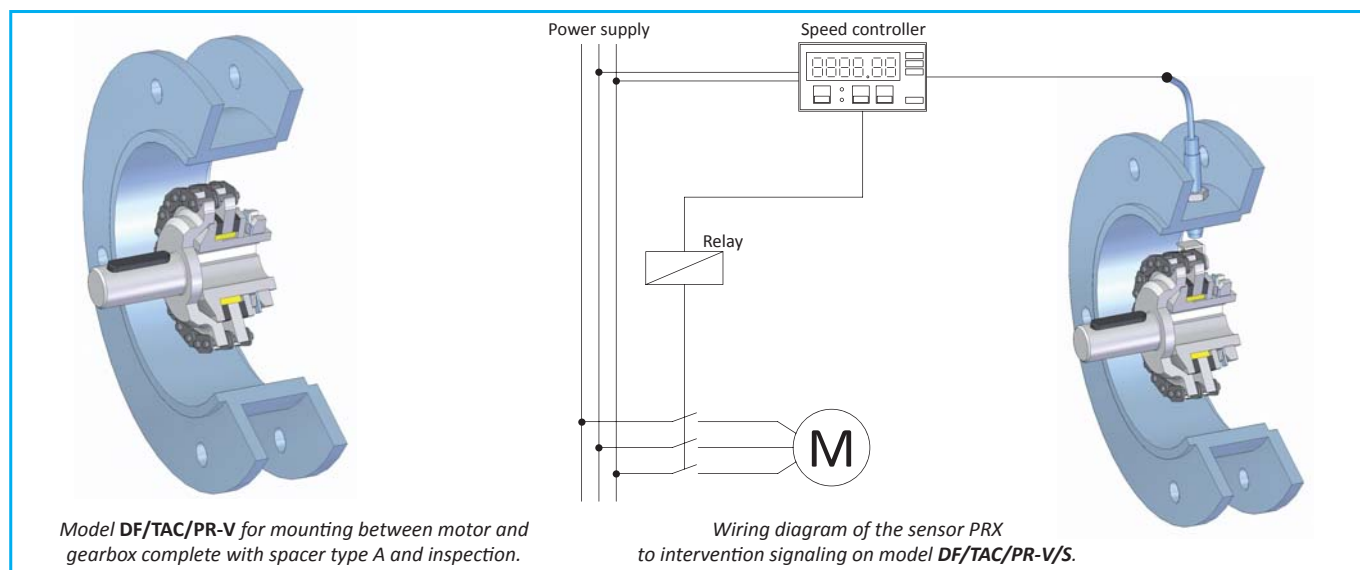


DF/TAC/PR-V/S (with sensor) → spacer **type C** (with inspection)

### DIMENSIONS AND TECHNICAL CHARACTERISTICS

| Size           | Torque [Nm] |           |           |            | Motor IEC    | DF/TAC/PR-V |     | Spacer for B5 flange |      | Max speed [Rpm] | Weight [Kg] |
|----------------|-------------|-----------|-----------|------------|--------------|-------------|-----|----------------------|------|-----------------|-------------|
|                | T0          | T1        | T2        | T3         |              | D H7 - Ch7  | T   | A4                   | V4   |                 |             |
| <b>00.38</b>   | -           | 1 - 14    | 8 - 22    | 15 - 34    | 63a          | 11          | 43  | 140                  | 43   | 5000            | 0,6         |
|                |             |           |           |            | 71a          | 14 *        |     | 160                  |      |                 |             |
| <b>0.50</b>    | 2 - 12      | 4 - 40    | 17 - 70   | 23 - 100   | 80a          | 19          | 45  | 200                  | 45,5 | 3800            | 1           |
|                |             |           |           |            | 90S          | 24 *        |     |                      | 55,5 |                 | 0,9         |
| <b>1.70</b>    | 6 - 18      | 17 - 60   | 34 - 120  | 60 - 210   | 100La - 112M | 28          | 64  | 250                  | 66   | 2800            | 2,6         |
| <b>2.90</b>    | 13 - 105    | 74 - 140  | 90 - 280  | 185 - 450  | 132M         | 38          | 72  | 300                  | 83,5 | 2200            | 5,4         |
| ▲ <b>3.115</b> | 65 - 280    | 120 - 360 | 207 - 700 | 210 - 950  | 160L         | 42          | 104 | 350                  | 121  | 1800            | 10,2        |
|                |             |           |           |            | 180L         | 48          |     |                      |      |                 | 10,4        |
| ▲ <b>4.140</b> | -           | 180 - 550 | 260 - 950 | 390 - 1200 | 200L         | 55          | 104 | 400                  | 122  | 1500            | 18          |

### FITTING EXAMPLES



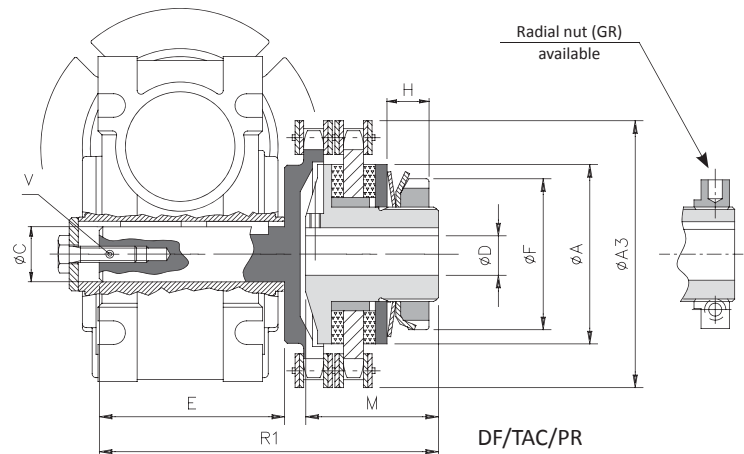
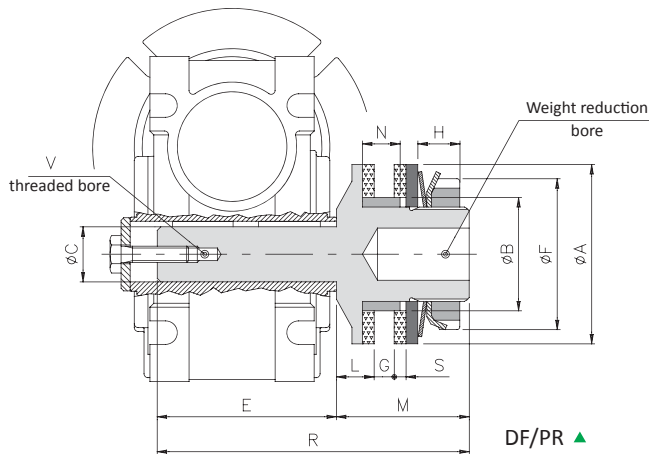
### NOTES

- D H7 \*: reduced keyway on torque limiter.
- Weight refer to the torque limiter pilot bore.

▲ On request

## DF/PR and DF/TAC/PR - friction model for gearboxes (output shaft): technical data

- Possibility of friction rings with different performance for specific needs.
- Specifically designed for installation on hollow output shaft gearboxes.
- Available complete with transmission component fully turned and fitted.
- Available with radial nut (.../GR) statically balanced.
- Model for gearboxes with a chain coupling, suitable for connections of coaxial shafts (DF/TAC/PR).
- Torque range: 1-2.600 Nm; max shaft:  $\varnothing 55$  mm; max bore:  $\varnothing 65$  mm.



### DIMENSIONS

| Size  | A3  | A   | B<br>h7 | C<br>h7 | D H7<br>max | E   | F   | G   |     | L    | M  | N  | R   | R1  | S   | V      |
|-------|-----|-----|---------|---------|-------------|-----|-----|-----|-----|------|----|----|-----|-----|-----|--------|
|       |     |     |         |         |             |     |     | min | max |      |    |    |     |     |     |        |
| 00.38 | 57  | 38  | 24      | 11      | 12          | 48  | 32  | 2,5 | 5   | 8    | 33 | 8  | 81  | 91  | 2,5 | M4x10  |
| 0.50  | 75  | 50  | 36      | 14      | 20          | 53  | 44  | 3,5 | 6   | 10   | 35 | 10 | 88  | 98  | 3   | M5x13  |
| 1.70  | 101 | 70  | 45      | 18      | 25          | 62  | 63  | 5   | 10  | 15   | 55 | 15 | 117 | 126 | 4   | M6x16  |
|       |     |     |         | 19      |             | 78  |     |     |     |      |    |    | 133 | 142 |     |        |
|       |     |     |         | 24      |             | 90  |     |     |     |      |    |    | 145 | 154 |     |        |
|       |     |     |         | 25      |             | 80  |     |     |     |      |    |    | 135 | 144 |     |        |
| 2.90  | 126 | 90  | 60      | 25      | 38          | 90  | 82  | 7   | 12  | 16   | 60 | 17 | 150 | 164 | 4   | M8x20  |
|       |     |     |         | 28      |             | 110 |     |     |     |      |    |    | 170 | 184 |     |        |
| 3.115 | 159 | 115 | 72      | 32      | 45          | 120 | 104 | 9   | 16  | 18   | 70 | 21 | 190 | 212 | 4   | M10x25 |
|       |     |     |         | 35      |             | 118 |     |     |     |      |    |    | 188 | 210 |     |        |
|       |     |     |         | 38      |             | 138 |     |     |     |      |    |    | 208 | 230 |     |        |
| 4.140 | 184 | 140 | 85      | 42      | 55          | 152 | 130 | 13  | 19  | 20   | 80 | 25 | 232 | 258 | 5   | M12x32 |
|       |     |     |         | 45      |             | 163 |     |     |     |      |    |    | 243 | 269 |     |        |
|       |     |     |         | 48      |             | 178 |     |     |     |      |    |    | 258 | 284 |     |        |
| 5.170 | 215 | 170 | 98      | 50      | 65          | 167 | 158 | 15  | 22  | 22,5 | 95 | 28 | 262 | 286 | 5   | M16x40 |
|       |     |     |         | 55      |             | 208 |     |     |     |      |    |    | 303 | 327 |     |        |

### TECHNICAL CHARACTERISTICS

| Size  | Torque [Nm] |           |            |             | Max speed [Rpm] |           | Weight [kg] |           |
|-------|-------------|-----------|------------|-------------|-----------------|-----------|-------------|-----------|
|       | T0          | T1        | T2         | T3          | DF/PR           | DF/TAC/PR | DF/PR       | DF/TAC/PR |
| 00.38 | -           | 1 - 14    | 8 - 22     | 15 - 34     | 10000           | 5000      | 0,2         | 0,6       |
| 0.50  | 2 - 12      | 4 - 40    | 17 - 70    | 23 - 100    | 7600            | 3800      | 0,4         | 1,0       |
| 1.70  | 6 - 18      | 17 - 60   | 34 - 120   | 60 - 210    | 5450            | 2800      | 1,2         | 2,8       |
| 2.90  | 13 - 105    | 74 - 140  | 90 - 280   | 185 - 450   | 4250            | 2200      | 2,2         | 5,7       |
| 3.115 | 65 - 280    | 120 - 360 | 207 - 700  | 210 - 950   | 3350            | 1800      | 3,9         | 10,7      |
| 4.140 | -           | 180 - 550 | 260 - 950  | 390 - 1200  | 2750            | 1500      | 7,3         | 19,3      |
| 5.170 | -           | 160 - 700 | 300 - 1450 | 1000 - 2600 | 2250            | 1300      | 12,1        | 29,8      |

▲ On request

### NOTES

- Weight refer to the torque limiter pilot bore.

.../PR - torque limiter for gearboxes: additional information

ORDER EXAMPLE

| TORQUE LIMITER FOR GEARBOXES |             |                    |              |                | + | DRIVE ELEMENT (ref. to DF/PR)        |  |
|------------------------------|-------------|--------------------|--------------|----------------|---|--------------------------------------|--|
| Size                         | Model       | Spacer             | Shaft / Bore | Torque/Springs |   | Description                          |  |
| 0.50                         | DF/TAC/PR-V | with type A spacer | ø28 h7/H7    | T1             |   | Simple plate wheel 3/8" x 7/32" Z=22 |  |

Size

00.38 to 5.170

00.47 to 4.138

Model

DSS/F/SG/PR-V

DF/TAC/PR-V

DF/TAC/PR-V/S

DF/PR

Spacer

(ref. to TAC/PR-V)

Type A

Type B

Springs

T0

T1

T2

T3

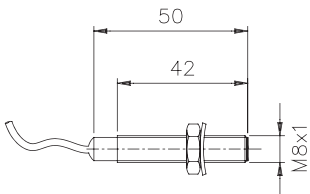
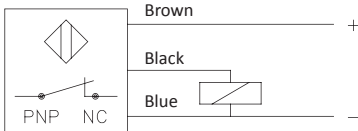
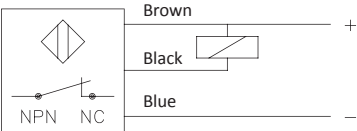
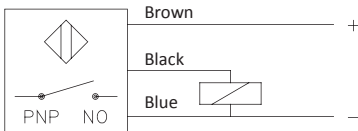
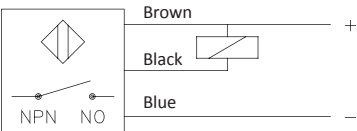
T4

- DF/TAC/PR-V model is supply combined with the corresponding spacer (type A or type B)
- DF/TAC/PR-V/S model is supply combined with the corresponding spacer (type C), complete with inductive proximity sensor (PRX).

PRX - inductive proximity sensor: technical data



- Standard version with brass cover with protection IP67 DIN 40050.
- Electric contact 5 ÷ 24 VCC and working frequency 2000 Hz.
- Operating temperature from -20°C to +70°C.
- Output: NPN (N.O. - N.C.); PNP (N.O. - N.C.).
- Intervention distance: max 1 mm.
- Cable length: 2 meter (3x0,2).



Weight: 50g

