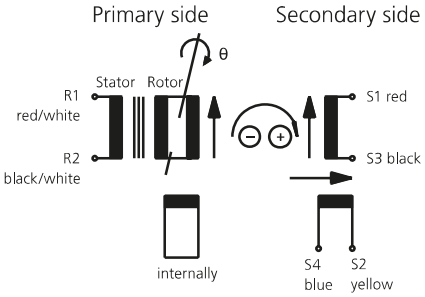
FRAMELESS RESOLVER

RE15

FACTS

- Hollow shaft Ø: max. 12 mm
- Outer Ø: 36 mm
- Length: 16 mm

OPERATING PRINCIPLE



Input: $E(R1\text{-}R2) = E \cdot \sin(\omega \cdot t)$

Output: $E(S1\text{-}S3) = TR \cdot E(R1\text{-}R2) \cdot \cos\theta$

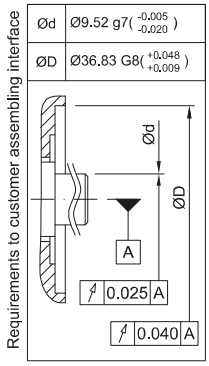
$E(S2\text{-}S4) = TR \cdot E(R1\text{-}R2) \cdot \sin\theta$

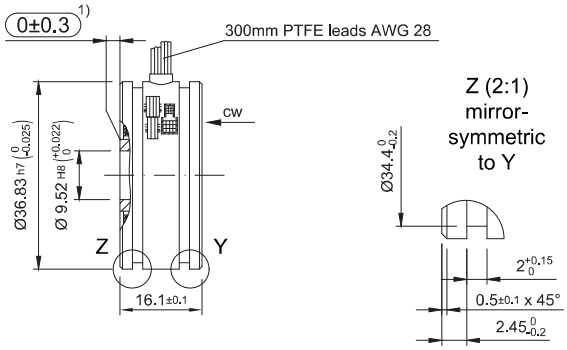
TR = Transformation ratio

Inner diam. stator = 22.820 min.
Outer diam. rotor = 22.350 max.

Positive counting direction :
Rotor cw as viewed (cw →)

1) axial offset
operational tolerance





Inner diam. stator = 22.820 min.
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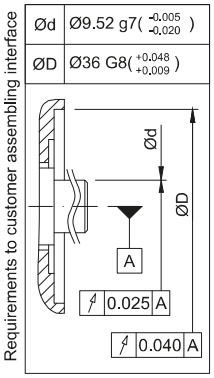
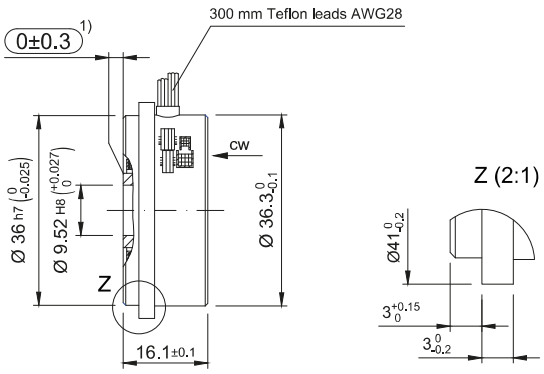
Positive counting direction :
Rotor cw as viewed (cw →)

1) axial offset
operational tolerance





Stated values are standard. Other configurations are available on request.

ELECTRICAL DATA

Type	RE-15-1-XXX	RE-15-3-XXX	RE-15-4-XXX
Pole Pairs	1	3	4
Transformation Ratio	0,5 ±10%	0,5 ±10%	0,5 ±10%
Input Voltage	7 V	7 V	7 V
Input Current	65 mA 7 V & 5 kHz	50 mA 7 V & 4 kHz ± 10%	53 mA 7 V & 5 kHz
Phase Shift	13° ±3° 7 V & 5 kHz	15° ±3° 7 V & 4 kHz	18° ±3° 7 V & 5 kHz
Acuracy	± 10'/20' spread ± 4/6' on request	± 5'/9' spread	± 6'/12' spread
Null Voltage	≤ 30 mV	≤ 30 mV	≤ 30 mV
Operating Temperature	-55 °C ... +155 °C	-55 °C ... +155 °C	-55 °C ... +155 °C
R1-R2 DC Resistance at room temperature	37 Ohm ± 10%	34 Ohm ± 10%	25 Ohm ± 10%
S1-S3/S2-S4 DC Resistance at room temperature	102 Ohm ± 10%	380 Ohm ± 10%	231 Ohm ± 10%
Max. Permissible Speed	≤ 20.000 rpm	≤ 20.000 rpm	≤ 20.000 rpm
Shock	≤ 1.000 m/s2 (11 ms)	≤ 1.000 m/s2 (11 ms)	≤ 1.000 m/s2 (11 ms)
Vibration	≤ 500 m/s2 10...500 Hz	≤ 500 m/s2 10...500 Hz	≤ 500 m/s2 10...500 Hz
High Pot Test Voltage Housing/Winding	≤ 500 VAc 50 Hz & 3 s	≤ 500 VAc 50 Hz & 3 s	≤ 500 VAc 50 Hz & 3 s
High Pot Test Voltage Winding/Winding	≤ 250 VAC 50 Hz & 3 s	≤ 250 VAC 50 Hz & 3 s	≤ 250 VAC 50 Hz & 3 s
Rotor / Stator	completely impregnated	completely impregnated	completely impregnated
Lead Length	AWG 28 min. 300 mm	AWG 28 min. 300 mm	AWG 28 min. 300 mm

Stated values are standard. Other configurations are available on request.

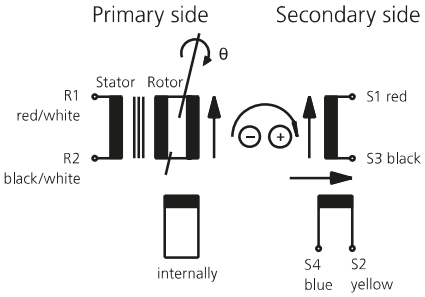
FRAMELESS RESOLVER

RE21

FACTS

- Hollow shaft Ø: max. 17 mm
- Outer Ø: 52 mm
- Length: 26 mm

OPERATING PRINCIPLE



Input: $E(R1\text{-}R2) = E \cdot \sin(\omega \cdot t)$

Output: $E(S1\text{-}S3) = TR \cdot E(R1\text{-}R2) \cdot \cos\theta$

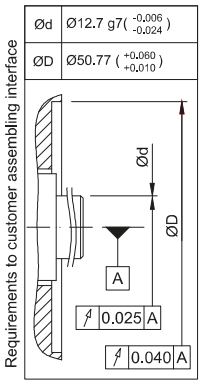
$E(S2\text{-}S4) = TR \cdot E(R1\text{-}R2) \cdot \sin\theta$

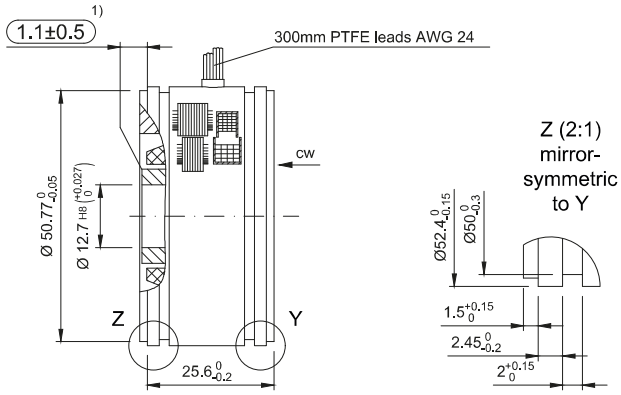
TR = Transformation ratio

Inner diam. stator = 33.500 min.
Outer diam. rotor = 32.725 max.

Positive counting direction :
Rotor cw as viewed (cw →)

1) axial offset
operational tolerance

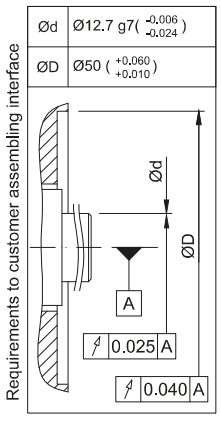


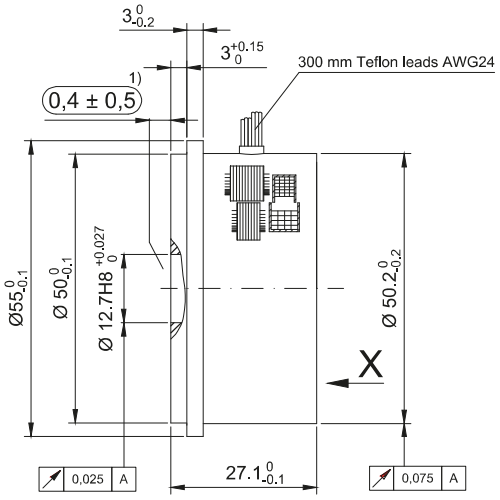


Inner diam. stator = 33.500 min.
Outer diam. rotor = 32.725 max.

Positive counting direction :
Rotor cw as viewed (cw →)

1) axial offset
operational tolerance





Stated values are standard. Other configurations are available on request.

ELECTRICAL DATA

Type	RE-21-1-A04	RE-21-1-A05	RE-21-1-A06
Pole Pairs	1	1	1
Transformation Ratio	0,5 ±10%	0,5 ±10%	0,5 ±10%
Input Voltage	7 V	7 V	7 V
Input Current	40 mA 7 V & 5 kHz	70 mA 7 V & 4 kHz ± 10%	45 mA 7 V & 4 kHz ± 10%
Phase Shift	10° ±3° 7 V & 5 kHz	8° ±3° 7 V & 4 kHz	8° ±3° 7 V & 4 kHz
Acuracy	± 6'/10' spread	± 5'/9' spread	± 6'/12'' spread
Null Voltage	≤ 30 mV	≤ 30 mV	≤ 30 mV
Operating Temperature	-55 °C ... +155 °C	-55 °C ... +155 °C	-55 °C ... +155 °C
R1-R2 DC Resistance at room temperature	90 Ohm ± 10%	48 Ohm ± 10%	61 Ohm ± 10%
S1-S3/S2-S4 DC Resistance at room temperature	72 Ohm ± 10%	31 Ohm ± 10%	53 Ohm ± 10%
Max. Permissible Speed	≤ 20.000 rpm	≤ 20.000 rpm	≤ 20.000 rpm
Shock	≤ 1.000 m/s2 (11 ms)	≤ 1.000 m/s2 (11 ms)	≤ 1.000 m/s2 (11 ms)
Vibration	≤ 500 m/s2 10...500 Hz	≤ 500 m/s2 10...500 Hz	≤ 500 m/s2 10...500 Hz
High Pot Test Voltage Housing/Winding	≤ 500 VAc 50 Hz & 3 s	≤ 500 VAc 50 Hz & 3 s	≤ 500 VAc 50 Hz & 3 s
High Pot Test Voltage Winding/Winding	≤ 250 VAC 50 Hz & 3 s	≤ 250 VAC 50 Hz & 3 s	≤ 250 VAC 50 Hz & 3 s
Rotor / Stator	completely impregnated	completely impregnated	completely impregnated
Lead Length	AWG 24 min. 300 mm	AWG 24 min. 300 mm	AWG 24 min. 300 mm

Type	RE-21-1-A07	RE-21-3-XXX	RE-21-5-XXX
Pole Pairs	1	3	5
Transformation Ratio	1 ±10%	0,5 ±10%	0,5 ±10%
Input Voltage	7 V	7 V	7 V
Input Current	40 mA 7 V & 4 kHz ± 10%	40 mA 7 V & 4 kHz ± 10%	34 mA 7 V & 5 kHz
Phase Shift	14° ±3° 7 V & 4 kHz	14° ±3° 7 V & 4 kHz	16° ±3° 7 V & 5 kHz
Acuracy	± 6'/12'' spread	± 6'/10' spread	± 5'/7' spread
Null Voltage	≤ 30 mV	≤ 30 mV	≤ 30 mV
Operating Temperature	-55 °C ... +155 °C	-55 °C ... +155 °C	-55 °C ... +155 °C
R1-R2 DC Resistance at room temperature	90 Ohm ± 10%	90 Ohm ± 10%	49 Ohm ± 10%
S1-S3/S2-S4 DC Resistance at room temperature	260 Ohm ± 10%	72 Ohm ± 10%	820 Ohm ± 10%
Max. Permissible Speed	≤ 20.000 rpm	≤ 20.000 rpm	≤ 20.000 rpm
Shock	≤ 1.000 m/s2 (11 ms)	≤ 1.000 m/s2 (11 ms)	≤ 1.000 m/s2 (11 ms)
Vibration	≤ 500 m/s2 10...500 Hz	≤ 500 m/s2 10...500 Hz	≤ 500 m/s2 10...500 Hz
High Pot Test Voltage Housing/Winding	≤ 500 VAc 50 Hz & 3 s	≤ 500 VAc 50 Hz & 3 s	≤ 500 VAc 50 Hz & 3 s
High Pot Test Voltage Winding/Winding	≤ 250 VAC 50 Hz & 3 s	≤ 250 VAC 50 Hz & 3 s	≤ 250 VAC 50 Hz & 3 s
Rotor / Stator	completely impregnated	completely impregnated	completely impregnated
Lead Length	AWG 24 min. 300 mm	AWG 24 min. 300 mm	AWG 24 min. 300 mm

Stated values are standard. Other configurations are available on request.