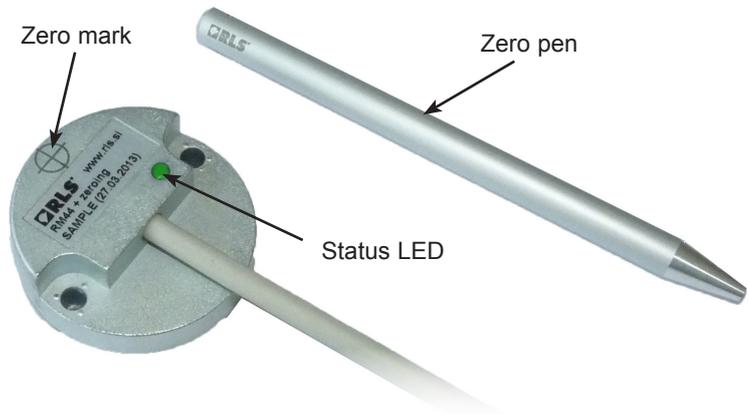


# RM44 rotary encoder with external zeroing

The RM44 encoder-sensor base unit is designed for integration onto electric motors or other devices for shaft position and velocity measurement.

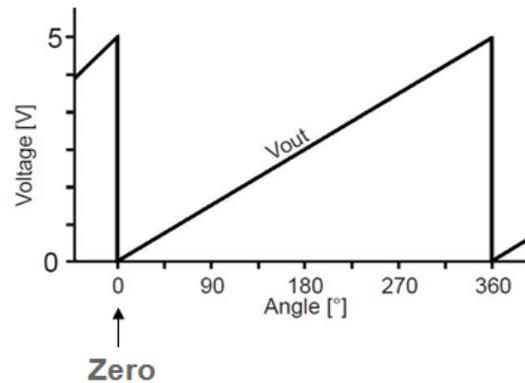
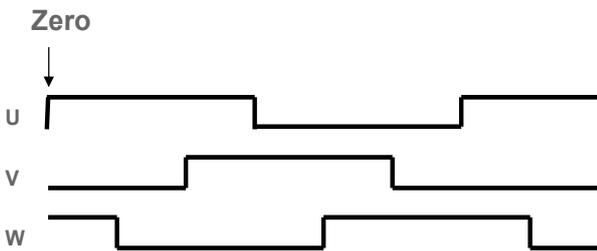
The RM44 with external zeroing is designed for setting the encoder zero position by using zero pen. It is designed for power supply voltage of 5 V only.

For electrical characteristics and dimensional drawings please refer to RM44 data sheet (RM44D01).



## Zero position

- **Incremental:** Position of Index
- **Commutation UVW:** First rising edge of U output
- **SSI:** Absolute position 0
- **Linear voltage:** Lowest voltage level



## Setting the zero position

1. **Install the magnetic actuator and RM44 encoder.**  
Please refer to RM44 data sheet (RM44D01) for more information.
2. **Set the mechanical zero position.**
3. **Use the zero pen to set the encoder zero position (see image):**
  - 3.1 Touch the Zero mark with the apex of the Zero pen - the status LED goes off.
  - 3.2 Hold the Zero pen for 3 seconds.
  - 3.3 The new Zero position is set when status LED goes RED.



## Status indicator LED

LED	Status
Green	Normal operation
Red	Zero position
No light	Presence of Zero pen

**Ordering code**

**RM44 IC 00 12Z 10 F 2 E 10**

**Output type**

**IC** - Incremental, RS422, 5 V

**SC** - Absolute binary synchro-serial (SSI), RS422, 5 V

**Ux** - Commutation single ended + incremental with line driver:

Code	Description	Nr. of poles
<b>UA</b>	one (1) period per rev	2 poles
<b>UB</b>	two (2) periods per rev	4 poles
<b>UC</b>	three (3) periods per rev	6 poles
<b>UD</b>	four (4) periods per rev	8 poles
<b>UE</b>	five (5) periods per rev	10 poles
<b>UF</b>	six (6) periods per rev	12 poles
<b>UG</b>	seven (7) periods per rev	14 poles
<b>UH</b>	eight (8) periods per rev	16 poles

**Vx** - Linear voltage:

Linear voltage output 0 - 5 V, supply 5 V DC				
	360°	180°	90°	45°
CW	<b>VA</b>	<b>VB</b>	<b>VC</b>	<b>VD</b>
CCW	<b>VE</b>	<b>VF</b>	<b>VG</b>	<b>VH</b>

**Shaft size**

**00** - n/a

**Special requirements**

**10** - No special requirements (standard)  
**1M** - Cable length in meters

**Environment and material**

**E** - IP64, die-cast body (Zinc alloy), standard EMC grade (standard)  
**F** - IP68, die-cast body (Zinc alloy), standard EMC grade

**Body style and cable exit**

**2** - Cylindrical body, radial cable exit

**Connector options**

**F** - Flying lead (no connector)

**Cable length**

**10** - 1.0 meter (or 10 meters if **1M** special requirement is chosen)

**Resolution**

**For Vx:**

**10Z** - 1024 counts or positions per revolution

**For IC, SC and Ux:**

Binary		
<b>12Z</b> - 4096	<b>10Z</b> - 1024	<b>07Z</b> - 128
<b>11Z</b> - 2048	<b>09Z</b> - 512	<b>06Z</b> - 64
	<b>08Z</b> - 256	<b>05Z</b> - 32

**Accessories**



Zeroing pen

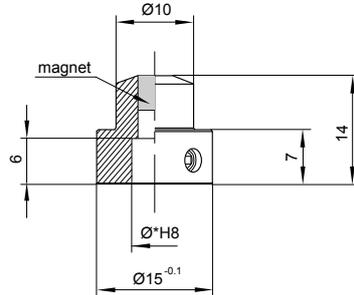
**Part number: ZEROPEN00**

## Magnetic actuators and magnets

### Actuator for integration onto shaft



Shaft =  $\varnothing^*h7$   
Fixing: Grub screw provided



#### Part numbers:

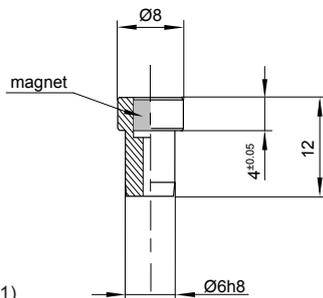
For resolutions up to 9 bit absolute (512 cpr incremental)  
**RMA04A2A00** –  $\varnothing 4$  mm shaft      **RMA10A2A00** –  $\varnothing 10$  mm shaft  
**RMA05A2A00** –  $\varnothing 5$  mm shaft      **RMA19A2A00** –  $\varnothing 3/16$ " shaft  
**RMA06A2A00** –  $\varnothing 6$  mm shaft      **RMA25A2A00** –  $\varnothing 1/4$ " shaft  
**RMA08A2A00** –  $\varnothing 8$  mm shaft      **RMA37A2A00** –  $\varnothing 3/8$ " shaft

For resolutions from 10 bit absolute (800 cpr incremental) and above  
**RMA04A3A00** –  $\varnothing 4$  mm shaft      **RMA10A3A00** –  $\varnothing 10$  mm shaft  
**RMA05A3A00** –  $\varnothing 5$  mm shaft      **RMA19A3A00** –  $\varnothing 3/16$ " shaft  
**RMA06A3A00** –  $\varnothing 6$  mm shaft      **RMA25A3A00** –  $\varnothing 1/4$ " shaft  
**RMA08A3A00** –  $\varnothing 8$  mm shaft      **RMA37A3A00** –  $\varnothing 3/8$ " shaft

### Actuator for integration into shaft



Hole =  $\varnothing 6G7$   
Fixing: Glue (recommended – LOCTITE 648 or LOCTITE 2701)

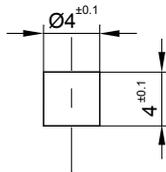


#### Part numbers:

For resolutions up to 9 bit absolute (512 cpr incremental)  
**RMH06A2A00**

For resolutions from 10 bit absolute (800 cpr incremental) and above  
**RMH06A3A00**

### Magnet for direct recessing in non-ferrous shafts



Fixing: Glue (recommended – LOCTITE 648 or LOCTITE 2701)

#### Part numbers:

For resolutions up to 9 bit absolute (512 cpr incremental)  
**RMM44A2A00** (individually packed) – for sample quantities only  
**RMM44A2C00** (packed in tubes)

For resolutions from 10 bit absolute (800 cpr incremental) and above  
**RMM44A3A00** (individually packed) – for sample quantities only  
**RMM44A3C00** (packed in tubes)

## RE58 flange part numbering

Refer to RE58 datasheet for further details.



#### Part numbers:

**RE58A10** -  $\varnothing 58$  mm    10 mm shaft

**RE58B06** -  $\varnothing 58$  mm    6 mm shaft

**RE58C10** -  $\varnothing 58$  mm    10 mm shaft

All RE58 flanges are supplied with required washer and M4 fasteners for RM44 encoder attachment.

## Head office

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## Document issues

Issue	Date	Page	Amendments done
1	23. 2. 2016	General	New document

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