**◯RLS**®

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 mark

Zero pen

Status LED
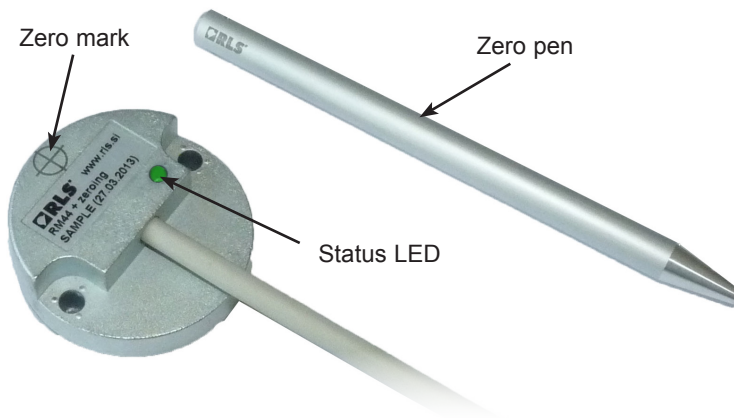
Zero position

- **Incremental:** Position of **Index**
- **Commutation UVW:** First rising edge of U output

- **SSI:** Absolute position **0**
- **Linear voltage:** Lowest voltage level
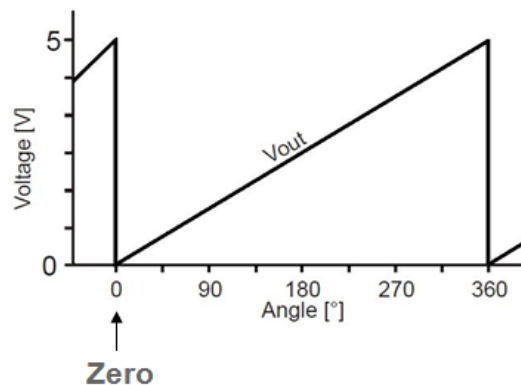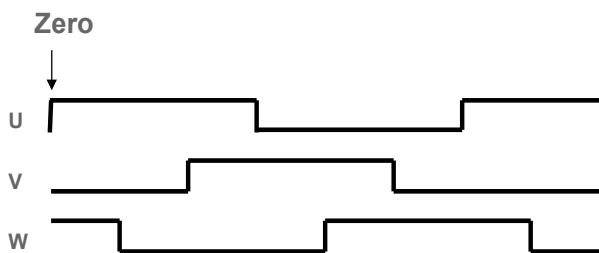
Setting the zero position

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

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Data sheet
RM44D04_01

Ordering code

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

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

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
UA	one (1) period per rev	2 poles
UB	two (2) periods per rev	4 poles
UC	three (3) periods per rev	6 poles
UD	four (4) periods per rev	8 poles
UE	five (5) periods per rev	10 poles
UF	six (6) periods per rev	12 poles
UG	seven (7) periods per rev	14 poles
UH	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	**VA**	**VB**	**VC**	**VD**
CCW	**VE**	**VF**	**VG**	**VH**

Shaft size
00 - n/a

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		
12Z - 4096	**10Z** - 1024	**07Z** - 128
11Z - 2048	**09Z** - 512	**06Z** - 64
	08Z - 256	**05Z** - 32

Accessories

Zeroing pen
Part number: ZEROPEN00

RLS®

Magnetic actuators and magnets

Actuator for integration onto shaft

magnet

Ø10

Ø*H8

Ø15 -0.1

6

7

14

Shaft = Ø*h7
Fixing: Grub screw provided
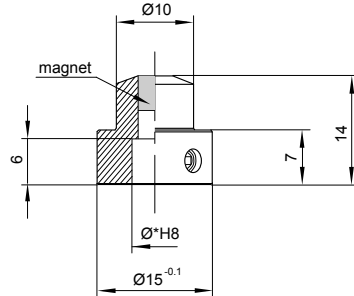
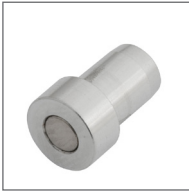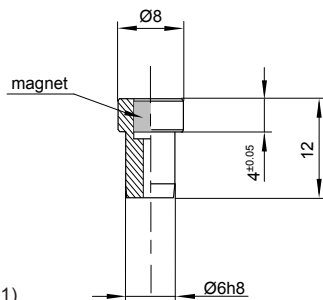**Part numbers:**

For resolutions up to 9 bit absolute (512 cpr incremental)
RMA04A2A00 – Ø4 mm shaft   **RMA10A2A00** – Ø10 mm shaft
RMA05A2A00 – Ø5 mm shaft   **RMA19A2A00** – Ø3/16" shaft
RMA06A2A00 – Ø6 mm shaft   **RMA25A2A00** – Ø1/4" shaft
RMA08A2A00 – Ø8 mm shaft   **RMA37A2A00** – Ø3/8" shaft

For resolutions from 10 bit absolute (800 cpr incremental) and above
RMA04A3A00 – Ø4 mm shaft   **RMA10A3A00** – Ø10 mm shaft
RMA05A3A00 – Ø5 mm shaft   **RMA19A3A00** – Ø3/16" shaft
RMA06A3A00 – Ø6 mm shaft   **RMA25A3A00** – Ø1/4" shaft
RMA08A3A00 – Ø8 mm shaft   **RMA37A3A00** – Ø3/8" shaft

Actuator for integration into shaft

magnet

Ø8

Ø6h8

$4^{\pm0.05}$

12

Hole = Ø6G7
Fixing: Glue (recommended –
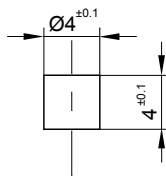LOCTITE 648 or LOCTITE 2701)

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

$Ø4^{\pm0.1}$

$4^{\pm0.1}$

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 - Ø58 mm   10 mm shaft

RE58B06 - Ø58 mm   6 mm shaft

RE58C10 - Ø58 mm   10 mm shaft

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

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3

Document issues

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

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