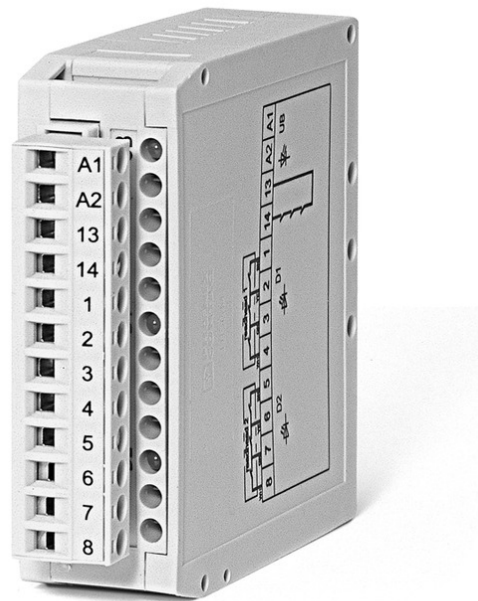


## ITEM 085536 CMS-E-AR

Description	Technical data	Accessories	Downloads
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### Features

- › Up to 30 read heads can be connected
- › 1 safety contact

### Functional description

The evaluation unit CMS-E-AR is suitable for the direct connection of up to 30 read heads.

### Category/PL according to EN ISO 13849-1

- › Category 1/PL c with 3 ... 30 read heads connected (NO contacts wired in series)
- › Category 3/PL d with 1 ... 2 read heads connected (NO contacts wired in parallel)

### Approvals

## Mechanical values and environment

Housing material	Polycarbonate (PC)
Weight	
	Net 0,13 kg
Ambient temperature	0 ... 50 °C
Degree of protection	Terminals IP20 / housing IP40
Mechanical life	10 x 10 <sup>6</sup>
Mounting method	Mounting rail 35mm according to DIN EN 60715 TH35
Connection	Connection terminals, plug-in
	<b>Safety contacts 13/14</b>
Number of safety contacts	1

## Electrical connection ratings

Operating voltage	DC 24 V -10% ... +10% <sup>[1]</sup>
Fusing	
Protection internal (operating voltage UB)	0,75 A Automatically resetting fuse PTC
Rated insulation voltage U <sub>i</sub>	AC 250 V
Degree of contamination (external, according to EN 60947-1)	2
Connection cross-section	0,14 ... 2,5 mm <sup>2</sup>
LED indicator	1 indicator LED Power (UB) and 2 status indicators for the read heads (D1/D2)
	<b>Safety contacts 13/14</b>
Type of output	Relay contacts, floating <sup>[2]</sup>
Current consumption	70 mA
Switching voltage	AC max.250 V
Switching current	at DC 24V 2 ... 3000 mA
Fusing	
External contact fuse (safety circuit) acc. to EN IEC 60269-1	3A gG
Utilization category according to EN 60947-4-1	AC-1 3A , 250V <sup>[3]</sup>
Utilization category according to EN 60947-5-1	

	AC-15	0.9A , 250V [4]
	DC-13	1.8A , 24V [5]
Switching load	According to UL class 2	
	Input: 24V DC ; output: 24V DC	
Breaking capacity (VA)	max.750 VA	
Risk time according to EN 60947-5-3	10 ms	

## Miscellaneous

in compliance with	EN ISO 13849-1: 2015 ; EN 50178: 1997 ; EN 60204-1: 2006/A1: 2009 ; EN ISO 14119: 2013; EN 6100-6-2: 2005; EN 6100-6-3: 2007/A1:2011; EN 60947-5-3: 2013
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## Reliability values acc. to EN ISO 13849-1

	Monitoring of the safety guard position
Category	
With up to 2 read heads with parallel wiring	3 [6]
More than 2 read heads with serial wiring	1 [7]
Performance Level	
With up to 2 read heads with parallel wiring	PL d [8]
With more than 2 read heads with serial wiring	PL c [9]
PFH <sub>D</sub>	
With up to 2 read heads with parallel wiring	$4.3 \times 10^{-8}$ [10]
With more than 2 read heads with serial wiring	$1.1 \times 10^{-6}$ [11]

Number of switching cycles	
≤ 0.1A at 24V DC	max.96000 1/Jahr
≤ 1A at 24V DC	max.75000 1/Jahr
≤ 3A at 24V DC	max.18000 1/Jahr
Mission time	20 y [12]

**in combination with Read head CMS-R-AXD-03V, CMS-R-AXF-03V, CMS-R-AXD-05V, CMS-R-AXD-SC, CMS-R-AXD-05P, CMS-R-AXF-05P, CMS-R-AXF-SC, CMS-R-AXF-05V and Actuator CMS-M-AB**

## Operating distance

Center offset	
At s=3 mm read distance	2,5 mm [13]
Assured switch-off distance S <sub>ar</sub>	max.18 mm [14]

Assured operating distance $S_{a0}$ With center offset $m=0$	min.6 mm [15]
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**in combination with Read head CMS-R-AXE-03V, CMS-R-AXG-03V, CMS-R-AXE-05V, CMS-R-AXG-05V, CMS-R-AXE-SC, CMS-R-AXG-SC, CMS-R-AXE-01V, CMS-R-AXE-05P, CMS-R-AXG-05P and Actuator CMS-M-AG**

### Operating distance

Center offset At $s=3$ mm read distance	2,5 mm [16]
Assured switch-off distance $S_{ar}$	max.34 mm [17]
Assured operating distance $S_{a0}$ With center offset $m=0$	min.18 mm [18]

**in combination with Read head CMS-R-BXO-05V, CMS-R-BXP-05V, CMS-R-BXO-SC, CMS-R-BXP-SC, CMS-R-BXO-05P, CMS-R-BXP-05P and Actuator CMS-M-BH**

### Operating distance

Center offset At $s=3$ mm read distance	2,5 mm [19]
Assured switch-off distance $S_{ar}$	max.17 mm [20]
Assured operating distance $S_{a0}$ With center offset $m=0$	min.6 mm [21]

**in combination with Read head CMS-R-CXA-03V, CMS-R-CXB-03V, CMS-R-CXA-05V, CMS-R-CXB-05V, CMS-R-CXA-SC, CMS-R-CXB-SC, CMS-R-CXA-05P, CMS-R-CXB-05P and Actuator CMS-M-CA**

### Operating distance

Center offset At $s=3$ mm read distance	2,5 mm [22]
Assured switch-off distance $S_{ar}$	max.16 mm [23]
Assured operating distance $S_{a0}$ With center offset $m=0$	min.7 mm [24]

**in combination with Read head CMS-R-EXL-03V, CMS-R-EXM-03V, CMS-R-EXN-03V, CMS-R-EXL-05V, CMS-R-EXN-05V, CMS-R-EXL-05P, CMS-R-EXN-05P, CMS-R-EXL-SC, CMS-R-EXN-SC and Actuator CMS-M-EF**

### Operating distance

Center offset At $s=3$ mm read distance	2,5 mm [25]
Assured switch-off distance $S_{ar}$	max.16 mm [26]
Assured operating distance $S_{a0}$ With center offset $m=0$	min.7 mm [27]

**Operating distance**

Center offset	
At s=3 mm read distance	2,5 mm [28]
Assured switch-off distance $S_{ar}$	
	max.23 mm [29]
Contact status indication with LED	max.15 mm [30]
Assured operating distance $S_{a0}$	
With center offset m=0	min.9 mm [31]
Contact status indication with LED	min.7 mm [32]

[1] All the electrical connections must either be isolated from the mains supply by a safety transformer according to EN 61558-2-6 with limited output voltage in the event of a fault, or by other equivalent isolation measures.

[2] NO

[3, 4, 5] Max. switching current per contact

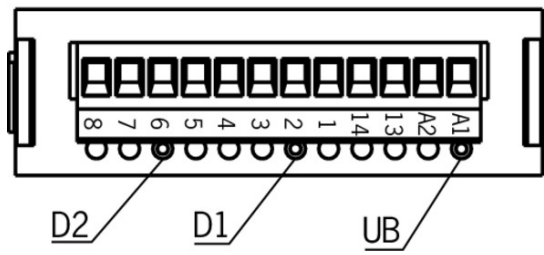
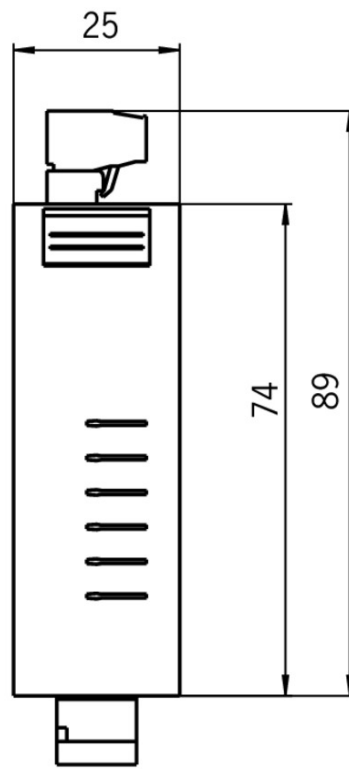
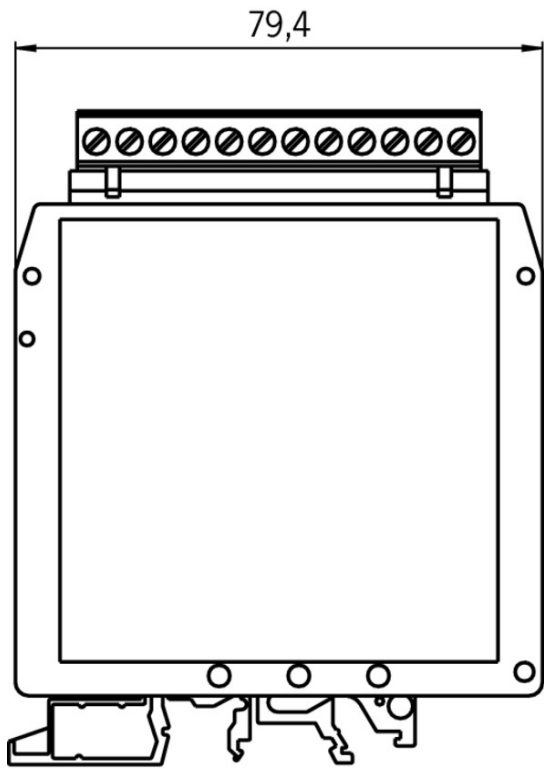
[6, 7, 8, 9, 10, 11, 12] This value is dependent on the number of switching cycles and the switching current.

[13, 15, 16, 18, 19, 21, 22, 24, 25, 27, 28, 31] Figure only applies if there is no ferromagnetic material in the vicinity of the read head and the actuator.

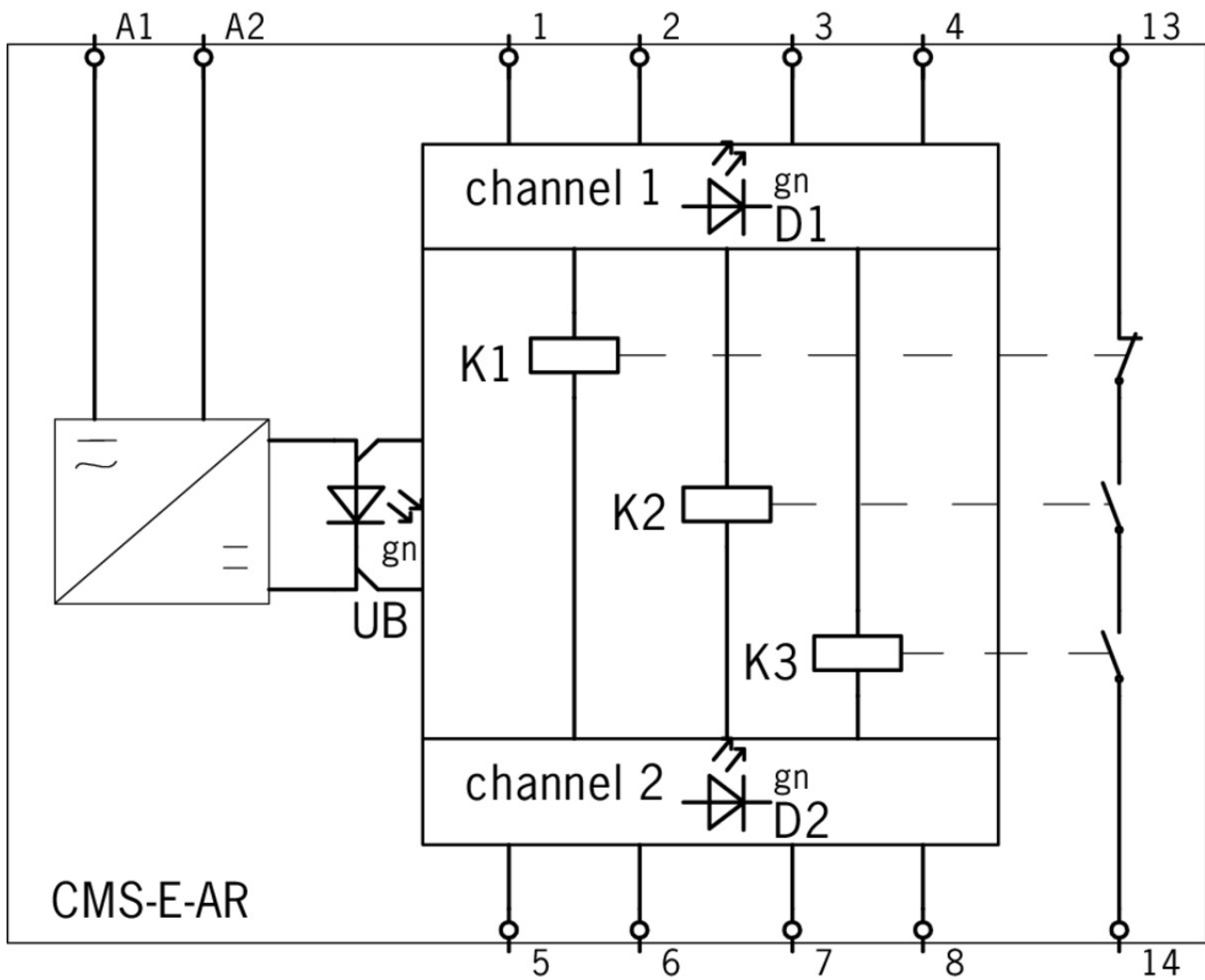
[14, 17, 20, 23, 26, 29] The assured switch-off distance  $s_{ar}$  corresponds to the reset distance.

[30, 32] For approach direction X Y of the actuator in the operating distance, the switching sequence is as follows: as per the safety contacts (color code BN,BK,BU,WH) and the contact status indication (color code PK,GY). The approach direction Z is not included in this switching sequence. The distance apply only in approach direction X, center offset m = 0.

**Dimension drawing**



## Block diagram



## Additional system components

- ✓ Read heads CMS design A - with NO contact combinations, PVC



### 084583 CMS-R-AXD-03V

#### ✓ Features

- › In combination with evaluation unit CMS-E-AR
- › Cube-shaped version 88 x 25 mm
- › Connection cable
- › Cable type: PVC



### 102385 CMS-R-AXE-01V

#### ✓ Features

- › In combination with evaluation unit CMS-E-AR
- › Cube-shaped version 88 x 25 mm
- › Connection cable
- › Cable type: PVC



### 084584 CMS-R-AXE-03V

#### ✓ Features

- › In combination with evaluation unit CMS-E-AR

- › Cube-shaped version 88 x 25 mm
- › Connection cable
- › Cable type: PVC



**085733** CMS-R-AXE-05V

✓ Features

- › In combination with evaluation unit CMS-E-AR
- › Cube-shaped version 88 x 25 mm
- › Connection cable
- › Cable type: PVC



**085735** CMS-R-AXG-05V

✓ Features

- › In combination with evaluation unit CMS-E-AR
- › Cube-shaped version 88 x 25 mm
- › Connection cable
- › Cable type: PVC



**085732** CMS-R-AXD-05V

✓ Features

- › In combination with evaluation unit CMS-E-AR
- › Cube-shaped version 88 x 25 mm
- › Connection cable
- › Cable type: PVC



**084585** CMS-R-AXF-03V

✓ Features

- › In combination with evaluation unit CMS-E-AR
- › Cube-shaped version 88 x 25 mm
- › Connection cable
- › Cable type: PVC



**085734** CMS-R-AXF-05V

✓ Features

- › In combination with evaluation unit CMS-E-AR
- › Cube-shaped version 88 x 25 mm
- › Connection cable
- › Cable type: PVC



**084586** CMS-R-AXG-03V

✓ Features

- › In combination with evaluation unit CMS-E-AR
- › Cube-shaped version 88 x 25 mm
- › Connection cable
- › Cable type: PVC



**093975** CMS-R-AXR-05VL

✓ Features

- › In combination with evaluation unit CMS-E-AR
- › Cube-shaped version 88 x 25 mm
- › Connection cable



- › Cable type: PVC
- 

✓ Read heads CMS design A - with NO contact combinations, PUR



**103859** CMS-R-AXE-05P

✓ Features

- › In combination with evaluation unit CMS-E-AR
  - › Cube-shaped version 88 x 25 mm
  - › Connection cable
  - › Cable type: PUR
- 



**103860** CMS-R-AXF-05P

✓ Features

- › In combination with evaluation unit CMS-E-AR
  - › Cube-shaped version 88 x 25 mm
  - › Connection cable
  - › Cable type: PUR
- 

✓ Read heads CMS design A - with NO contact combinations, M8



**100741** CMS-R-AXD-SC

✓ Features

- › In combination with evaluation unit CMS-E-AR
  - › Cube-shaped version 88 x 25 mm
  - › With plug connector M8
- 



**100742** CMS-R-AXE-SC

✓ Features

- › In combination with evaluation unit CMS-E-AR
  - › Cube-shaped version 88 x 25 mm
  - › With plug connector M8
- 



**100743** CMS-R-AXF-SC

✓ Features

- › In combination with evaluation unit CMS-E-AR
  - › Cube-shaped version 88 x 25 mm
  - › With plug connector M8
- 



**100744** CMS-R-AXG-SC

✓ Features

- › In combination with evaluation unit CMS-E-AR
  - › Cube-shaped version 88 x 25 mm
  - › With plug connector M8
- 

✓ Read heads CMS design B - with NO contact combinations, PVC



**092023** CMS-R-BXO-05V

✓ Features

- › In combination with evaluation unit CMS-E-AR
- › Cube-shaped version 36 x 26 mm

- › Connection cable
- › Cable type: PVC



#### **092024** CMS-R-BXP-05V

##### ✓ Features

- › In combination with evaluation unit CMS-E-AR
- › Cube-shaped version 36 x 26 mm
- › Connection cable
- › Cable type: PVC

#### ✓ Read heads CMS design B - with NO contact combinations, PUR



#### **103867** CMS-R-BXO-05P

##### ✓ Features

- › In combination with evaluation unit CMS-E-AR
- › Cube-shaped version 36 x 26 mm
- › Connection cable
- › Cable type: PUR

#### ✓ Read heads CMS design B - with NO contact combinations, M8



#### **100755** CMS-R-BXO-SC

##### ✓ Features

- › In combination with evaluation unit CMS-E-AR
- › Cube-shaped version 36 x 26 mm
- › Plug connector M8



#### **100756** CMS-R-BXP-SC

##### ✓ Features

- › In combination with evaluation unit CMS-E-AR
- › Cube-shaped version 36 x 26 mm
- › Plug connector M8

#### ✓ Read heads CMS design C - with NO contact combinations, PVC



#### **084574** CMS-R-CXA-03V

##### ✓ Features

- › In combination with evaluation units CMS-E-AR
- › Cylindrical version M25
- › Connection cable
- › Cable type: PVC



#### **085739** CMS-R-CXA-05V

##### ✓ Features

- › In combination with evaluation units CMS-E-AR
- › Cylindrical version M25
- › Connection cable
- › Cable type: PVC

#### **084576** CMS-R-CXB-03V

##### ✓ Features



- › In combination with evaluation units CMS-E-AR
  - › Cylindrical version M25
  - › Connection cable
  - › Cable type: PVC
- 



**085740** CMS-R-CXB-05V

✓ Features

- › In combination with evaluation units CMS-E-AR
  - › Cylindrical version M25
  - › Connection cable
  - › Cable type: PVC
- 

✓ Read heads CMS design C - with NO contact combinations, PUR



**103870** CMS-R-CXA-05P

✓ Features

- › In combination with evaluation units CMS-E-AR
  - › Cylindrical version M25
  - › Connection cable
  - › Cable type: PUR
- 

✓ Read heads CMS design C - with NO contact combinations, M8



**103966** CMS-R-CXB-SC

✓ Features

- › In combination with evaluation units CMS-E-AR
  - › Cylindrical version M25
  - › Plug connector M8
- 

✓ Read heads CMS design E - with NO contact combinations, PVC



**085633** CMS-R-EXL-03V

✓ Features

- › In combination with evaluation units CMS-E-AR
  - › Cylindrical version M30
  - › Connection cable
  - › Cable type: PVC
- 



**085742** CMS-R-EXL-05V

✓ Features

- › In combination with evaluation units CMS-E-AR
  - › Cylindrical version M30
  - › Connection cable
  - › Cable type: PVC
- 



**085635** CMS-R-EXN-03V

✓ Features

- › In combination with evaluation units CMS-E-AR
- › Cylindrical version M30
- › Connection cable
- › Cable type: PVC



## 085744 CMS-R-EXN-05V

### Features

- › In combination with evaluation units CMS-E-AR
- › Cylindrical version M30
- › Connection cable
- › Cable type: PVC

## Instructions

### Betriebsanleitung Auswertegerät CMS-E-AR

	Doc. no.	Version	Language	Download
Betriebsanleitung Auswertegerät CMS-E-AR Operating Instructions Evaluation Unit CMS-E-AR Manual de instrucciones Unidad de evaluación CMS-E-AR Mode d'emploi Analyseur CMS-E-AR	2099179	10-06/18	   	1.0 MB

### Sicherheitsinformation CMS-E-.R

	Doc. no.	Version	Language	Download
Sicherheitsinformation CMS-E-.R Safety Information CMS-E-.R Información de seguridad CMS-E-.R Information de sécurité CMS-E-.R	137276	01-09/16	   	0.4 MB

## Catalogs

### Magnetisch codierte Sicherheitsschalter CMS Magnetically Coded Safety Switches CMS

	Doc. no.	Version	Language	Download
Magnetisch codierte Sicherheitsschalter CMS	086823	09-02/18		2.3 MB
Système de sécurité sans contact CMS	090606	09-02/18		2.3 MB
Magnetically Coded Safety Switches CMS	086824	09-02/18		2.3 MB

## Declaration of conformity

### EU-Konformitätserklärung

	Doc. no.	Version	Language	Download
EU-Konformitätserklärung Declaración UE de conformidad Déclaration UE de conformité Dichiarazione di conformità EU declaration of conformity	2112987	07-05/17	    	0.3 MB

## CAD data

CAD data for this item on TraceParts