

Evaluation unit CMS-E-AR



- ▶ 2 read heads can be connected (NO contacts wired in parallel, category 3 according to EN 954-1)
- ▶ 30 read heads can be connected (NO contacts wired in series, category 2 according to EN 954-1)



Functional description

The CMS-E-AR evaluation unit is used to monitor category 2 or 3 safety guards in accordance with EN 954-1.

Read heads

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

Category according to EN 954-1

- ▶ Category 2 with 3 ... 30 read heads connected (NO contacts wired in series)
- ▶ Category 3 with 1 ... 2 read heads connected (NO contacts wired in parallel)

LED displays

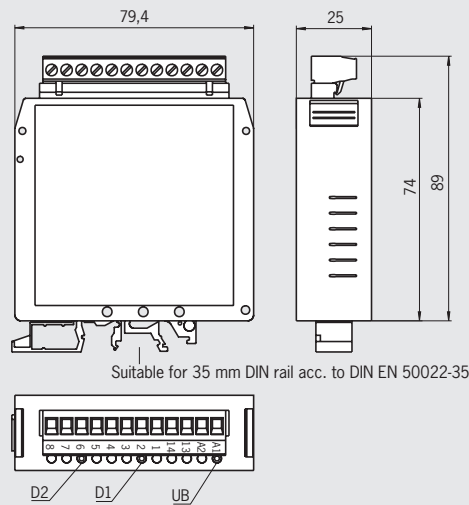
Actuator \ LED	U_B Operating voltage green	D1 green	D2 green
Channel 1 in the operating distance	●	●	
Channel 2 in the operating distance	●		●

Evaluation unit CMS-E-AR

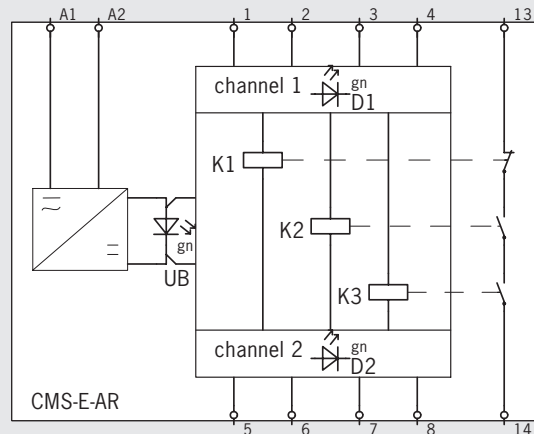
Cat.
2

Cat.
3

Dimension drawing



Block diagram



Ordering table

Evaluation unit	Scope of delivery	Order No. / Item
CMS-E-AR	Evaluation unit One 3-pole jumper One 4-pole jumper	085 536 CMS-E-AR

Technical data evaluation unit CMS-E-AR

Parameter	Value			Unit
	min.	typ.	max.	
Housing material	Polyamide PA6.6			
Dimensions	89 x 79.4 x 25			mm
Weight	0.13			kg
Ambient temperature	0	-	+50	°C
Storage temperature	-25	-	+70	°C
Degree of protection according to EN 60529	Terminals IP 20 / housing IP 40			
Degree of contamination	2			
Installation	DIN rail 35 mm according to EN 50022-35			
Number of read heads	1 ... 30 serial ¹⁾ / 2 parallel			
Connection type	Plug-in connection terminals			
Operating voltage U_b	24 ±10% ²⁾			V AC/DC
Internal fuse (operating voltage) (automatically resetting fuse PTC)	0.75			A
Switching voltage U	-	-	250	V AC
Current consumption	-	70	-	mA
Switching current I at 24 V	-	-	3	A
Switching current I at 24 V	2	-	-	mA
Breaking capacity P	-	-	750	VA
External contact fuse (safety circuit)	3 A gG			
Safety contacts	1			
Utilization category to EN 60947-5-1		I_e ³⁾	U_e ³⁾	
	AC-1	3 A	250 V	
	AC-15	0.9 A	250 V	
	DC-13	1.8 A	24 V	
Switching load acc. to UL Class 2	Input: 24 V AC/DC Output: 30 V AC / 24 V DC			
Category according to EN 954-1	2 ⁴⁾		3 ⁵⁾	
Classification according to EN 60947-5-3	PDF-T		PDF-S	
Rated insulation voltage U_i	250			V
Vibration resistance	According to EN 60947-5-2			
Mechanical operating cycles relays	10 x 10 ⁶			
EMC compliance	According to EN 60947-5-3			

1) For 3 m cable lengths. The number depends on the cable length.

2) 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.

3) I_e = max. switching current max. per contact, U_e = switching voltage

4) Safety category 2 in the case of read heads with reed contacts wired in series. Machine control system is responsible for checking the safety function at suitable intervals.

5) Category 3 in the case of read heads with reed contacts wired in parallel.

Evaluation unit CMS-E-DR



- ▶ 2 read heads can be connected (NO contacts wired in parallel, category 2 according to EN 954-1)
- ▶ 30 read heads can be connected (NO contacts wired in series, category 1 according to EN 954-1)



Functional description

The CMS-E-DR evaluation unit is used to monitor safety category 1 or 2 safety guards in accordance with EN 954-1.

Read heads

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

Category according to EN 954-1

- ▶ Category 1 with 3 ... 30 read heads connected (NO contacts wired in series)
- ▶ Category 2 with 1 ... 2 read heads connected (NO contacts wired in parallel)

LED displays

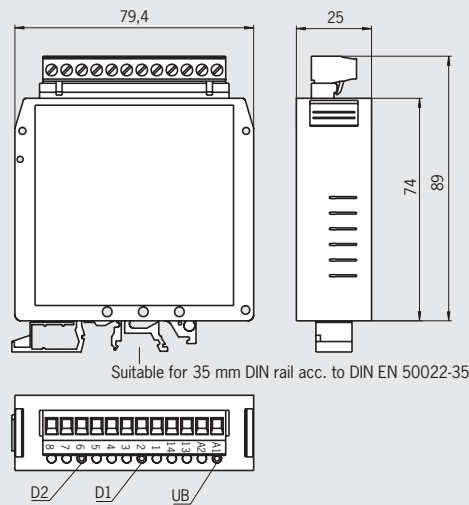
Actuator	LED	U _B Operating voltage green	D1 green	D2 green
Channel 1 in the operating distance		●	●	
Channel 2 in the operating distance		●		●

Evaluation unit CMS-E-DR

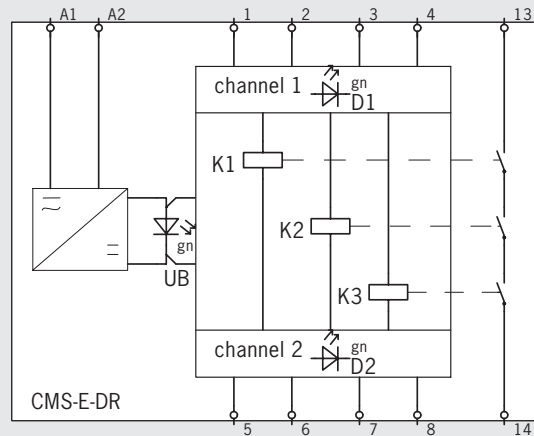
Cat.
1

Cat.
2

Dimension drawing



Block diagram



Ordering table

Evaluation unit	Scope of delivery	Order No. / Item
CMS-E-DR	Evaluation unit One 3-pole jumper One 4-pole jumper	099 163 CMS-E-DR

Technical data evaluation unit CMS-E-DR

Parameter	Value			Unit
	min.	typ.	max.	
Housing material	Polyamide PA6.6			
Dimensions	89 x 79.4 x 25			mm
Weight	0.115			kg
Ambient temperature	0	-	+50	°C
Storage temperature	-25	-	+70	°C
Degree of protection according to EN 60529	Terminals IP 20 / housing IP 40			
Degree of contamination	2			
Installation	DIN rail 35 mm according to EN 50022-35			
Number of read heads	1 ... 30 serial ¹⁾ / 2 parallel			
Connection type	Plug-in connection terminals			
Operating voltage U_b	24 ±10% ²⁾			V AC/DC
Internal fuse (operating voltage) (automatically resetting fuse PTC)	0.75			A
Switching voltage U	-	-	250	V AC
Current consumption	-	45	-	mA
Switching current I at 24 V	-	-	4	A
Switching current I at 24 V	13	-	-	mA
Breaking capacity P	-	-	1.000	VA
External contact fuse (safety circuit)	4 A gG			
Safety contacts	1			
Utilization category to EN 60947-5-1		I_e ³⁾	U_e ³⁾	
	AC-1	4 A	250 V	
	AC-1	4 A	24 V	
	AC-15	1 A	250 V	
	AC-15	1 A	24 V	
	DC-13	4 A	24 V	
Switching load acc. to UL Class 2	Input: 24 V AC/DC Output: 30 V AC / 24 V DC			
Category according to EN 954-1	1 ⁴⁾		2 ⁵⁾	
Classification according to EN 60947-5-3	PDF-D		PDF-T	
Rated insulation voltage U_i	250			V
Vibration resistance	According to EN 60947-5-2			
Mechanical operating cycles relays	10 x 10 ⁶			
EMC compliance	According to EN 60947-5-3			

1) For 3 m cable lengths. The number depends on the cable length.

2) 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.

3) I_e = max. switching current max. per contact, U_e = switching voltage

4) Category 1 in the case of read heads with reed contacts wired in series.

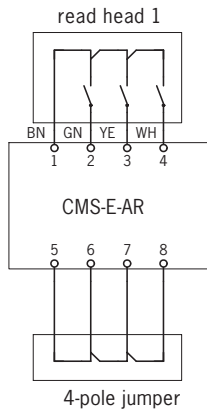
5) Category 2 in the case of read heads with reed contacts wired in parallel. Machine control system is responsible for checking the safety function at suitable intervals.

Connection examples evaluation unit CMS-E-AR

Connection example 1

- ▶ One read head on one evaluation unit CMS-E-AR
- ▶ Read head 1: reed contacts wired in parallel

Cat. 3

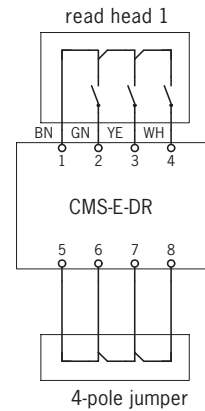


Connection examples evaluation unit CMS-E-DR

Connection example 4

- ▶ One read head on one evaluation unit CMS-E-DR
- ▶ Read head 1: reed contacts wired in parallel

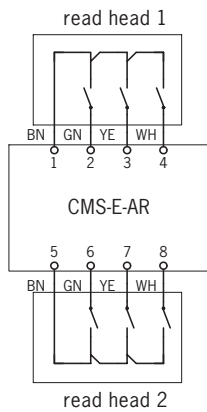
Cat. 2



Connection example 2

- ▶ Two read heads on one evaluation unit CMS-E-AR
- ▶ Read head 1 and 2: reed contacts wired in parallel

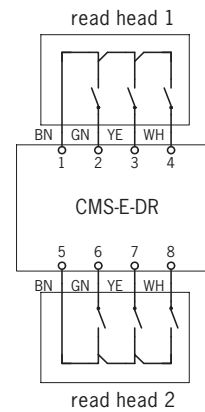
Cat. 3



Connection example 5

- ▶ Two read heads on one evaluation unit CMS-E-DR
- ▶ Read head 1 and 2: reed contacts wired in parallel

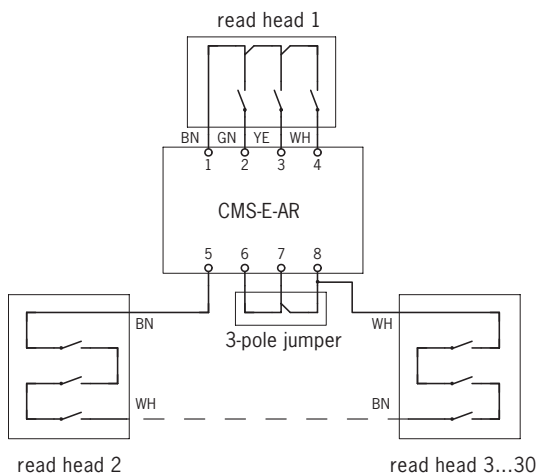
Cat. 2



Connection example 3

- ▶ More than two read heads (max. of 30) on one evaluation unit CMS-E-AR
- ▶ Read head 1: reed contacts wired in parallel; read head 2 ... n: reed contacts wired in series

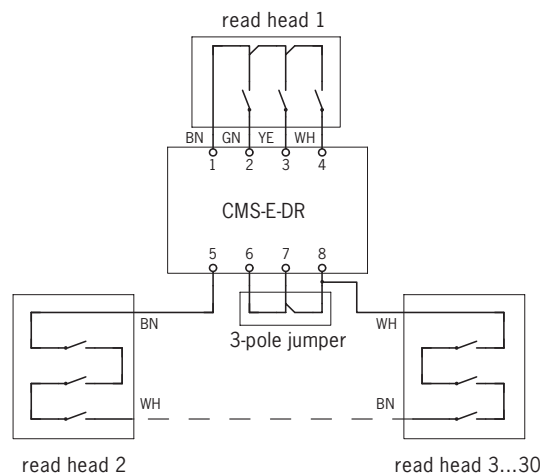
Cat. 2



Connection example 6

- ▶ More than two read heads (max. of 30) on one evaluation unit CMS-E-DR
- ▶ Read head 1: reed contacts wired in parallel; read head 2 ... n: reed contacts wired in series

Cat. 1



Notes

The following applies to all the illustrations:
Evaluation unit electrically isolated, actuator not in the operating distance.