

MRC series

R3-N3xD

11-pin, special relay, 3-pole, according to IEC 67-I-18a

Relay approval: EN 60077-1-2/99 - EN 61373/99 for Railway application

Type	R3-NxD/ ... V Relays for Railway application 3 change-over contacts special wide range voltage			
Maximum contact load	6 A 250 V AC1	6 A 30 V DC1		
Recommended minimum contact load	1 mA/10 V (with 10 μ Au) 10 mA/10 V (standard contact)			

Contacts

Material	Standard	Code 0	AgNi
	Optional	Code 4	AgNi + 0,2μ Au
	Optional	Code 8	AgNi + 10μ Au
Rated current	6 A		
Switch-on current max. (20 ms)	15 A		
Switching voltage max.	250 V		
Max. AC load	see Fig. 1		
DC load	see Fig. 2		

Coil

Contact open	see table; tolerance ± 10 %
Operation range	0,7 U _N ... 1,25 U _N
Nominal power	1,07 W

Coil table

VDC	Ω	mA
24	525	46
48	2150	22
72	4930	15
110	12900	9

Insulation

Pollution grade	PD3
With pulse (1,2 / 50 μs)/Dielectric strength (1Minute/V rms)	
Contact/coil	4 kV / 2220 V
Contact/contact	4 kV / 2220 V
Between contact and the same pole	1550 kV / 850 V

Specifications

Ambient temperature operation/storage	-25 (no ice)...70 °C / -40 ... 80 °C
Number of mechanical operations	> 10 millions
Thermic class	B (130 °C)
Vibration : category / class	1 / B Body mounted
	5 - 150 Hz (3 axes)
Shock	5 g (3 axes)
Pick-up time/bounce time	18 ms/≤ 3 ms
Release time/bounce time	35 ms/≤ 1 ms
Weight	95 g
Weight avg. Relay + Socket (S3-B)	150 g
Protection class	IP 40

Standard types

DC 24, 48, 72, 110

Free wheeling diode

LED

LED + free wheeling diode

R3-N30/DC ... V	R3-N34/DC ... V	R3-N38/DC ... V
R3-N30D/DC ... V	R3-N34D/DC ... V	R3-N38D/DC ... V
R3-N30X/DC ... V	R3-N34X/DC ... V	R3-N38X/DC ... V
R3-N30DX/DC ... V	R3-N34DX/DC ... V	R3-N38DX/DC ... V*

"..." Enter the voltage for full type designation

Accessories

Socket:	S3-B, S3-S, S3-L, S2-P, S3-P0
Operational accessories (blanking plug):	SO-NP, SO-OP



Connection diagram

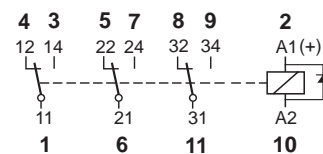


Fig. 1 AC voltage endurance

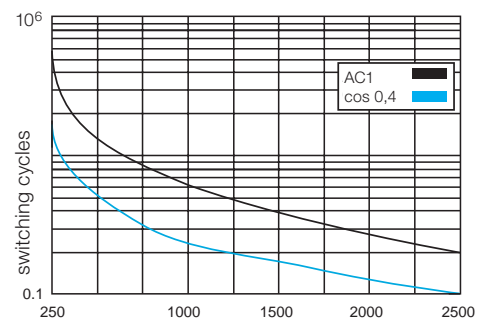
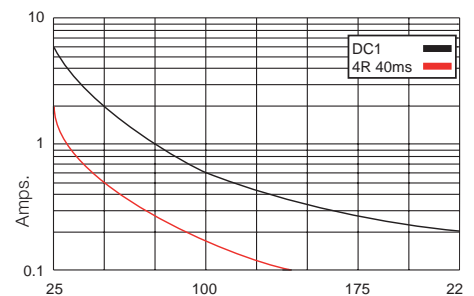
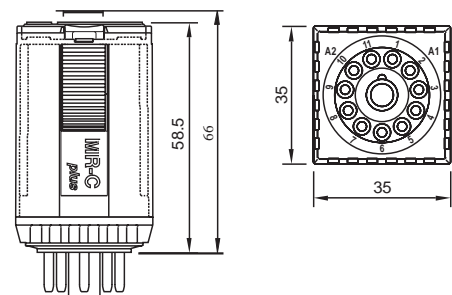


Fig. 2 DC load limit curve



Dimensions [mm]



Technical approvals, conformities



IEC 60077/EN60077-1-2/99; EN6/373/99

QRC series

R7-A2x

8-pin, miniature standard relay, 2-pole, plug-in

Relay approval: EN 60077-1-2/99 - EN 61373/99 for Railway application

Type	R7-A2x/DC ... V Railway application Sensitive, 2 change-over contacts
Maximum contact load:	10 A/250 V AC1 6 A/250 V AC5a/b
Recommended minimum contact load	1 mA/10 V (with 10 μ Au) 10 mA/10 V (standard contact)

Contacts			
Material	Standard	Code 0	AgNi
	Optional	Code 4	AgNi + 0,2μ Au
	Optional	Code 8	AgNi + 10μ Au
Rated current	10 A		
Switch-on current max. (20 ms)	30 A		
Switching voltage max.	250 V		
AC load	see fig. 1		
DC load	see fig. 2		

Coil	
Coil resistance	see table; tolerance ± 10 %
Contact open	0,7 U _N bei 1,25 U _N
Release voltage	≥ 0,1 x U _N
Nominal power	1,07 W

Coil table	Voltage	Ω ± 10%	mA
	24	535	45
	48	2004	24
	72	4750	15
	110	11337	10

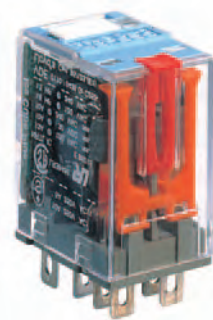
Insulation	Volt rms, 1 min
Pollution grade	PD3
Pulse (1,2 / 50_s)	Dielectric strenght (1Minute/V rms)
Contact/coil	4KV / 2200V
Between different poles	4KV / 2200V
Between contact and the same pole	1550 / 850V

Specifications	
Ambient temperature operation/storage	-25 (no ice)...70 °C / -40 ... 80 °C
Number of mechanical operations	>20millions
Thermic class	B (130° C)
Vibration : category / class	1 / B Body mounted
Vibration	5-150Hz (3 axes)
Shock	5g (3 axes)
Operation (UN) / release time	10 ms/ 15 ms
Weight	35 g
Weight avg. Relay + Socket (S3-B)	75g
Protection class	IP40

Standard types			
DC 24, 48, 72, 110	R7-A20/DC ... V	R7-A24/DC ... V	R7-A28/DC ... V
LED	R7-A20X/DC ... V	R7-A24X/DC ... V	R7-A28X/DC ... V
Free wheeling diode	R7-A20D/DC ... V	R7-A24D/DC ... V	R7-A28D/DC ... V
LED + free wheeling diode	R7-A20DX/DC ... V	R7-A24DX/DC ... V	R7-A28DX/DC ... V

"..." Enter the voltage for full type designation

Accessories	
Socket:	S7-M, S7-I/O, S7-L, S7-P, S7-P0



Connection diagram

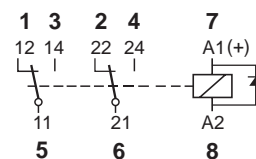


Fig. 1 AC voltage endurance

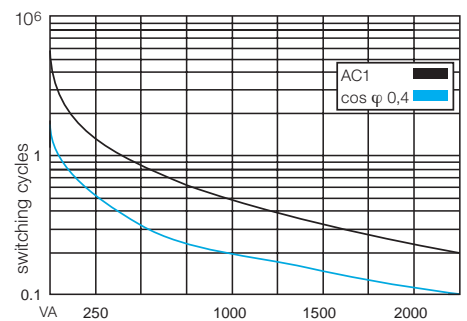
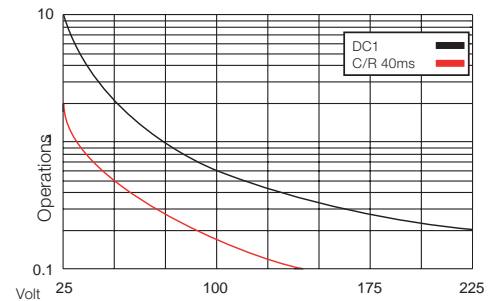
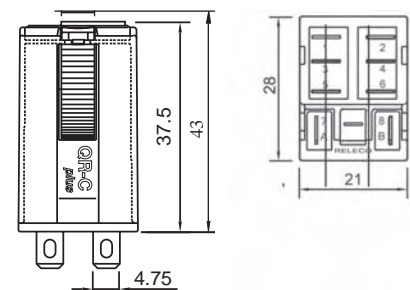


Fig. 2 DC load limit curve



Dimensions [mm]



Technical approvals, conformities



EN 60077-1-2; EN 61373/99

QRC series

R7-T2x

8-pin, miniature industrial relay, 2-pole, change-over contact, faston Relay approval: EN 60077-1-2/99 - EN 61373/99 for Railway application

Type	R7-T2x/DC ... V Railway application Sensitive, 2 change-over contact
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Maximum contact load	6 A 250 V AC1	6 A 30 V DC1
Recommended minimum contact load	1 mA/10 V (with 10 μ Au)	5 mA/5 V (standard contact)

Contacts

Material	Standard	Code 1	AgNi + 0,2 μ Au
	Optional	Code 2	AgNi + 10 μ Au
Rated current	6 A		
Switch-on current max. (20 ms)	15 A		
Switching voltage max.	250 V		
Max. AC load	see fig. 1		
DC load	100.000 switching cycles		

Coil

Coil resistance	see table; tolerance ± 10 %
Contact open	0,7 U_N bei 1,25 U_N
Operation range	$\geq 0,1 \times U_N$
Nominal power	1,07 W

Coil table

Voltage	$\Omega \pm 10\%$	mA
24	535	45
48	2004	24
72	4750	15
110	11337	10

Insulation

	Volt rms, 1 min
Pollution grade	PD3
Pulse (1,2 /50_s)	
Dielectric strenght (1Minute/V rms)	
Contact/coil	4KV / 2200V
Between different poles	4KV / 2200V
Between contact and the same pole	1550 / 850V

Specifications

Ambient temperature operation/storage	-25 (no ice)...70 °C / -40 ... 80 °C
Number of mechanical operations	>20 millions
Thermic class	B (130° C)
Vibration : category / class	1 / B Body mounted
Vibration	5-150Hz (3 axes)
Shock	5g (3 axes)
Operation (UN) / release time	10 ms/ 15 ms
Weight	35 g
Weight avg. Relay + Socket (S3-B)	75g
Protection class	IP40

Standard types

DC 24, 48, 72, 110

LED

Free wheeling diode

LED + free wheeling diode

R7-T21/DC ... V

R7-T22/DC ... V

R7-T21X/DC ... V

R7-T22X/DC ... V

R7-T21D/DC ... V

R7-T22D/DC ... V

R7-T21DX/DC ... V

R7-T22DX/DC ... V

"..." Enter the voltage for full type designation

Accessories

Socket:

S7-M, S7-I/O, S7-L, S7-P, S7-PO



Connection diagram

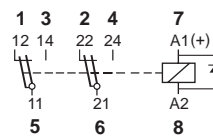


Fig. 1 AC voltage endurance

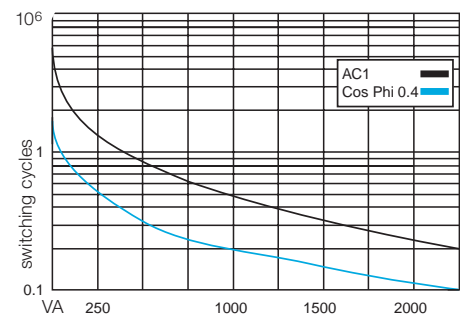
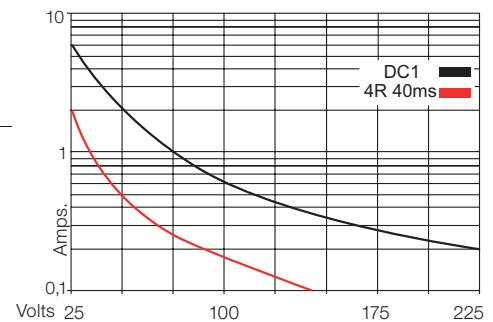
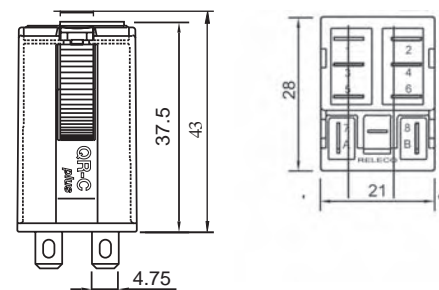


Fig. 2 DC load limit curve



Dimensions [mm]



Technical approvals, conformities



IEC 60077; EN 60077-1-2; EN 61373/99



Kühn Controls AG

Notes:

You want more information about this product, please call us: tel: +49 (0)7082-940000 or send us a fax: +49 (0)7082-940001, or email: sales@kuehn-controls.de or visit our Website: www.kuehn-controls.de