

Contents

1.	Introduction	1
2.	Ordering	1
3.	Technical Data.....	2
3.1.	General Data.....	2
3.2.	Electrical Data (9-120°).....	2
3.2.1.	Contacts	2
3.2.2.	Time Data	4
3.2.3.	Coil data	4
3.2.4.	Coil circuit.....	4
4.	Operating, Connection.....	5
5.	Dimensions	5
6.	Conformities, Standards	5
7.	Application	6
8.	Remarks to switching classes	6

1. INTRODUCTION

The RIC-20 is a high value high power relay / contactor for Installation mounting according DIN43880 on DIN rail TS35 with 2 power contacts nc/no for up no 20 A, 400 V. The RIC installation contactor has a AC/DC coil (UC). This means: no humming, no addition coil freewheeling circuit requested.

An additional auxiliary contact block with two 6 A contacts can be added (click on). A mechanical flag indicates the mechanical switching status.

The contactor is applicable for Installation - as well as for industrial applications.

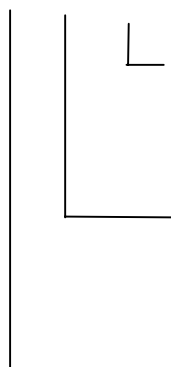
The contactor meets all relevant standards.

subject to be changed without notice

2. ORDERING

Relecomat
Installation contactor

RIC20-xxx- / V



Only for Ac version
Without other values 50/60 Hz
AC230V Other values on request
UC230V (UC = AC/DC = 50/60Hz/=)
UC24V
Contact version
200 2 x no (normally open)
110 1 x no, 1 x nc
020 2 x nc (normally closed)
Series "20", I_{th} 20 A, other series up to 63 A

Fo-61.01-D-401

Datei: RIC20 DB-E

Gez.	Entw.	Gepr.	Reg.	Datum	Ae M	Ausg.	Blatt: 1
	Pd			26.2.07		A	von: 6
	Pd			1.6.07		C	M:

Datasheet

RIC20 ...

This is an intellectual property. It can not be copied, nor given to third parties without Releco's written approval. We reserve all the rights for this document.

RELECO S.A.
Alcorcón (Madrid)



66909 - 03 - 57 - 40C

Accessories:

Aux contact block

RIC-AUX20 (2 x NO)
RIC-AUX11 (1 x NO + 1 x NO)
RIC-AUX02 (2 x NC)

Remark: the AUX contact block can be clicked on the right side.

Sealing cover

RIC20-SEAL20 1 pair each contactor (packing unit 5 pairs)

Label

RIC-LAB-G plastic plate green
RIC-LAB-W plastic plate white
 Only for replacement (packing unit 10 pieces 10)

3. TECHNICAL DATA

3.1. General Data

Mechanical dimensions	H 85 x B 17,5 x T 60+5 mm (see drawing)
Protection class	Terminals IP20, VBG4; class 3 / IEC 947-4-1
Housing material	PA6 Technyl;
Weight (masse)	135grs.
Temperature range storage application	-40°C ÷ +80°C / -25°C ÷ +55°C (60°C).
Vibration	IEC 571, 10 ÷ 55 Hz: 20 ms ⁻²
Shock Application destroy	≤5g / >20g
Terminal Power	wire room 4,4 x 5,2 mm Screws with wire protection plate,
M 3,5; 1,2Nm; Screwdriver Pz 1; screw	driver standard slot: 3
Coil	1 x 4 mm ² 2 x 2,5 mm ² with wire end ferrule Wire room 3,5 x 4,2 mm screws with wire protection plate. M3,5; 1,2 Nm, Screwdriver Pz 1; screw driver standard slot: 3 Material St, Zn plated,
Mounting	No restriction; However some increase of the min inrush voltage of <5% may occur. See application.

3.2. Electrical Data

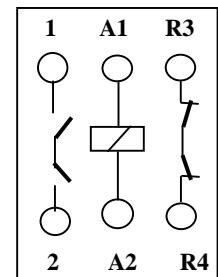
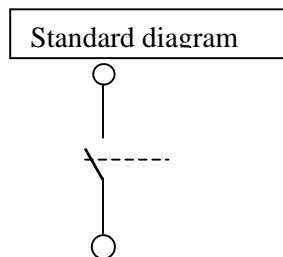
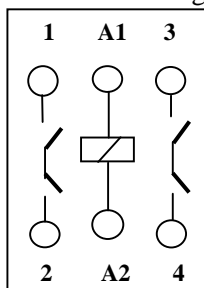
(9_T20°)

3.2.1. Contacts

Principle: all contacts are double make or double break.

Internal circuit diagram Example: 2 x NO

Configuration no/no version ...110/ ...



Fo-61.01-D-401

Datei: RIC20 DB-E

Gez.	Entw.	Gepr.	Reg.	Datum	Ae M	Ausg.	Blatt: 2
	Pd			26.2.07		A	von: 6
	Pd			1.6.07		C	M:

Datasheet

RIC20 ...

This is an intellectual property. It can not be copied, nor given to third parties without Releco's written approval. We reserve all the rights for this document.

RELECO S.A.
Alcorcón (Madrid)



66909 - 03 - 57 - 40C

Contact versions

The following versions are available:

RIC20-200/...	2 x no
RIC20-110/...	1 x no + 1 x nc
RIC20-020/...	2 x nc

Power contacts

Standard material	AgNi
Possible options	On request
Circuit	2 x single contacts in series

Contact rivet	φ 2,9 mm
Contact pressure	-
Contact gap	>2 x 2,2 mm
Contact resistance typ.	3 mΩ // 10 A

	Power contact	Aux contact
Switching power		
Switching voltage	[24 V] ÷ 400 V	-
Switching current	I _{th} 20 A (50mA ... 20A) [10 mA, 24 V] ÷ 20 A, 400 V; AC1 [10 mA] ÷ 0,5 A, 220 V; DC1	-
Switching load (examples)		
AC3, AC4	220 ÷ 240 V: 1,5 A 380 ÷ 400 V: 1,5 A	-
AC5A	400 V 12 A	-
AC5B	400 V 3,0 A	-
AC7	-	-
AC15 (11)	-	-
DC1	24 V 10 A 220 V 0,5 A	-
DC3-5	24 V 5,0 A 220 V -	-
Inrush current	50 A / 0,1 s	-
Switching power	9 kW/230 V A AC1 // ...300 W DC	-
Lifetime electrical	>2 x 10 ⁵ / 20 A; AC1	-
Lifetime mechanical	>2 x 10 ⁶	-

[] rec. min. load

Load diagram

-

Fo-61.01-D-401

Datei: RIC20 DB-E

Gez.	Entw.	Gepr.	Reg.	Datum	Ae M	Ausg.	Blatt: 3
	Pd			26.2.07		A	von: 6
	Pd			1.6.07		C	M:

Datasheet

RIC20 ...

This is an intellectual property. It can not be copied, nor given to third parties without Releco's written approval. We reserve all the rights for this document.

RELECO S.A.
Alcorcón (Madrid)



66909 - 03 - 57 - 40C

Auxiliary contacts

Add on RIC-AUX** with two contacts -Click on. See separate data sheet

3.2.2. Time Data

Type	DC		AC	
Pull in delay typ.	20 ms	<25 ms	18 ms	≤25 ms*
Release delay (without parallel circuit) typ.	20 ms	<25 ms	10 ms	≤22 ms*
Bouncing time no side typ.			0,5 ms	<3 ms
Bouncing time nc side typ.			0,5 ms	<3 ms
Difference time no/nc				
Max. cycles (s ⁻¹)	600/hr (nom. load)			
Isolation contact / contact / coil	>4500 Vrms, 1min // 6 kV IEC 947-4-1			

3.2.3. Coil data

Type	DC	AC
Coil power	3 W	30 VA*/6 VA
Pull in voltage typ.	DC: 0,70U _N	AC: 0,68U _N
Hold voltage typ.	0,55U _N	0,65U _N
Release voltage typ.	0,3U _N	0,32U _N

* only AC versions

Coil parameter

Type	DC			AC		
	R (Ω) **	L	I (mA)	R (Ω)	L (H)	I (mA)
12 V	-	-	-	-	-	-
UC 24 V	315 ±10%	-	76	-	-	67
AC 24 V	-	-	-	41	0,4	185
48 V	-	-	-	-	-	-
110 V	-	-	-	-	-	-
115 V	-	-	-	-	-	-
220 V	-	-	-	-	-	-
UC 230 V	29 330 ±10%	-	8*	-	-	7,5
AC 230 V	-	-	-	4000 ±10%	36,5	20

* The DC value is given for U_{nom} = 220 V dc

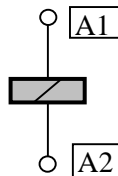
** Measured by U/I because of the bridge rectifier you may get wrong values with a normal Ω-meter

3.2.4. Coil circuit

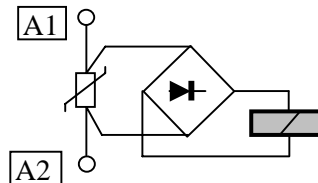
The UC (AC/DC) Versions have an internal bridge rectifier circuit (freewheeling). The resulting voltage peak while switching off (self induction) is less than 2 V. The ac versions have no internal circuit therefore an external freewheeling circuit may be recommended (RC).

Circuit

AC Versions



UC Versions



Fo-61.01-D-401

Datei: RIC20 DB-E

Gez.	Entw.	Gepr.	Reg.	Datum	Ae M	Ausg.	Blatt: 4
	Pd			26.2.07		A	von: 6
	Pd			1.6.07		C	M:

This is an intellectual property. It can not be copied, nor given to third parties without Releco's written approval. We reserve all the rights for this document.

RELECO S.A.
Alcorcón (Madrid)

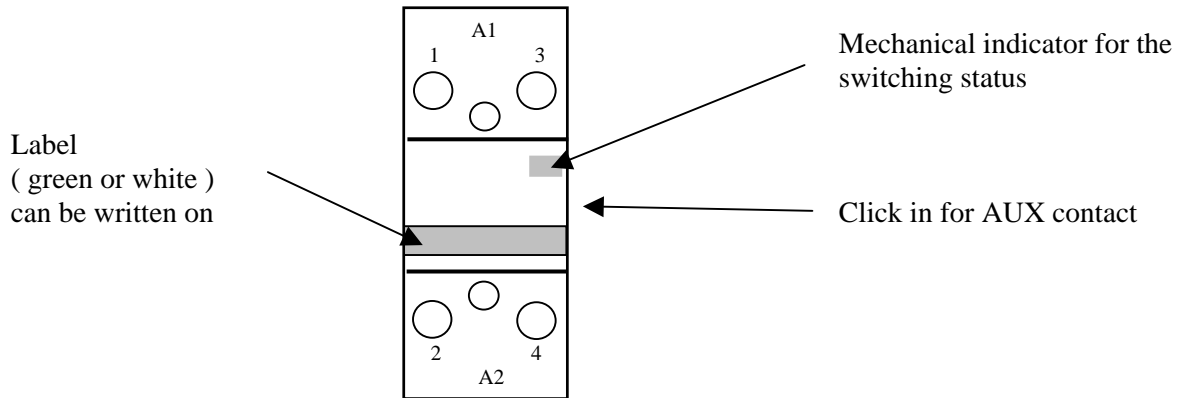


Datasheet

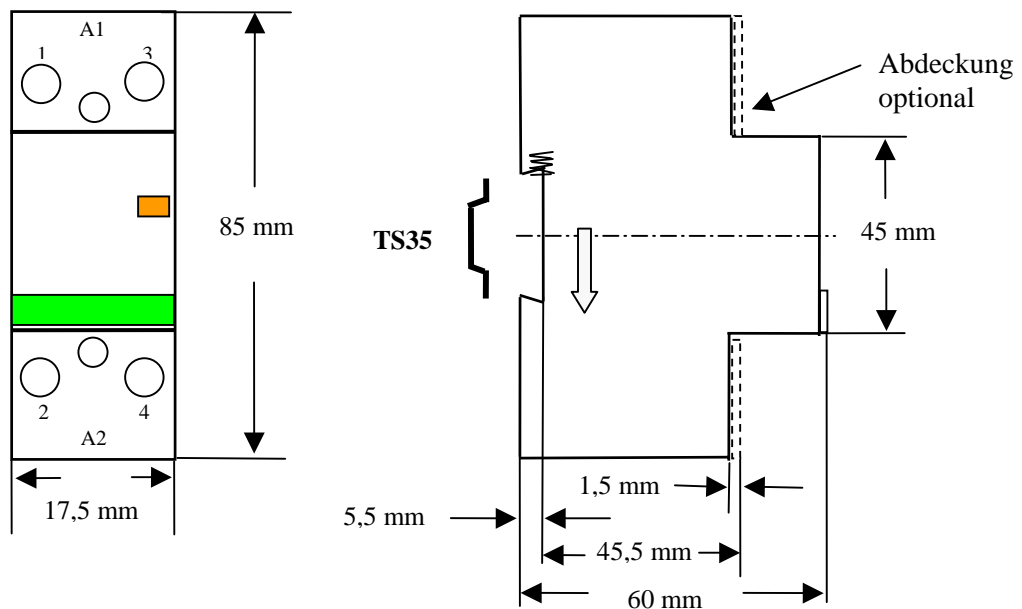
RIC20 ...

66909 - 03 - 57 - 40C

4. **OPERATING CONNECTION**



5. **DIMENSIONS**



6. **CONFORMITIES, STANDARDS**

CE; Semko; CB
RoHS

- IEC/EN 60947-4-1 Low voltage switching devices; general rules
- EN 50001 Low voltage switching devices; Dimensions general rules
- EN 50005 Low voltage switching devices; Terminal marking
- EN 50011 Industrial low voltage switching devices marking for spec. aux contactors
- EN 50012 Industrial low voltage switching devices marking for spec. contactors
- EN 50022 DIN TS35
- DIN43880 Installation mounting

Fo-61.01-D-401 Datei: RIC20 DB-E

Gez.	Entw.	Gepr.	Reg.	Datum	Ae M	Ausg.	Blatt: 5
	Pd			26.2.07		A	von: 6
	Pd			1.6.07		C	M:

Datasheet

RIC20 ...

This is an intellectual property. It can not be copied, nor given to third parties without Releco's written approval. We reserve all the rights for this document.

RELECO S.A.
Alcorcón (Madrid)



66909 - 03 - 57 - 40C

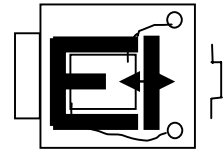
7. APPLICATION

Mounting

Turning the mounting by 90° clockwise its may increase the pull in voltage by approx.. 5%. The release voltage may decrease by approx. 5 %. Mounting front down (90°) may give opposite results. In general it is recommended to use the "NORMAL" mounting. For further specification in a specified application the following questions should be answered:

- What about the load, which kind of load?
- How many switching cycles are requested , Lifetime?
- How often have to be switched (cycles/hr)?
- Ambient conditions (temperature)?
- Others

Mounting "Normal"



Typical load

The given examples will give a reasonable long life time The load is declared for each contact.

Main contacts

Load	Quantity
Incandescent lamps 230 V, 60 W	21 pieces
100 W	13
500 W	3
1000 W	1
Fluorescent lamps 230 V, 16/18 W with ECD	22
32/36 W with ECD	12
50/58 W with ECD	8
Fluorescent lamps 230V, 40W standard with 4,5µF	20
High pressure Hg vapour lamps 230 V, 125 W with comp 10 µF	6
High pressure sodium vapour lamps 230 V, 50 W with comp	3
Low pressure sodium vapour lamps 230 V, 55 W with comp.	1

8. REMARKS TO SWITCHING CLASSES

The switching classes are specified e.g. in the standard IEC/ 60947-1.

AC1	Test according IEC /EN 60947-4	AC Load resistive, $\cos \varphi > 0,95$
AC3	Test according IEC /EN 60947-4	Switching of asynchronous motors ON/OFF while running
AC	Test according IEC /EN 60947-4	Switching of asynchronous motors ON/OFF breaking with current, reversing, touch control
AC11		see AC15
AC12		Control of resistive load and solid state load with isolation
AC15	Test according IEC /EN 60947-5	Control of electromagnetic load with AC
DC1	Test according IEC /EN 60947-4	DC Load resistive or inductive but with free wheeling circuit
DC12	Test according IEC /EN 60947-5	Control of resistive load and solid state load with isolation

Fo-61.01-D-401

Datei: RIC20 DB-E

Gez.	Entw.	Gepr.	Reg.	Datum	Ae M	Ausg.	Blatt: 6
	Pd			26.2.07		A	von: 6
	Pd			1.6.07		C	M:

Datasheet

RIC20 ...

This is an intellectual property. It can not be copied, nor given to third parties without Releco's written approval. We reserve all the rights for this document.

RELECO S.A.
Alcorcón (Madrid)



66909 - 03 - 57 - 40C