

Contactors RAST 5



D778E072



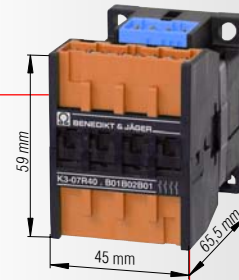
BENEDIKT & JÄGER
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RAST 5 - exclusive for OEM-Partners

5 mm pitch connector system

Advantages RAST 5 - Technology

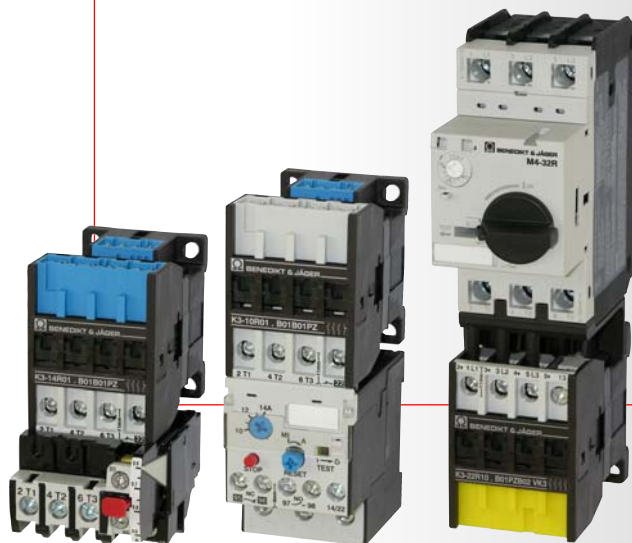
- Time saving installation
- Easy assembly without tools
- Tailor-made sockets, custom - designed codes
- Ambient temperatures up to +90°C/194°F
- Smallest sizes
- Plug technology up to 32 A / 415 V
- color coding for power ratings
- color coding for coil voltages



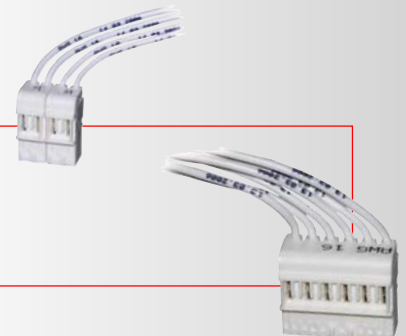
RAST 5 - Accessories



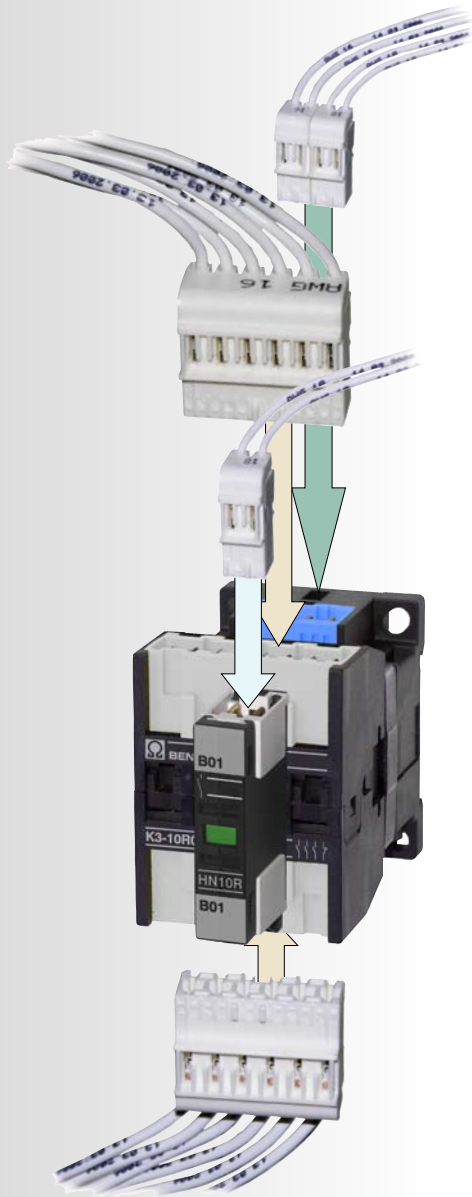
Combining switchgears with plug-in connections and screw connections



Contactors are available for plugs of many different producers



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Contactors, RAST 5

AC operated

	Ratings AC2, AC3			Rated- Current	Auxiliary Contacts built in		Auxiliary Contacts snap on	Type	Coil Voltage	Code Housing Coil	Code Housing IN (L)	Code Housing OUT (T)	Pack pcs.	Weight kg/pc.
	380V	220V	240V		AC1 415V	NO	NC							
	kW	kW	kW		A			HN10R..						
● Contactor Relays														
	-	-	-	20	4	-	2	K3-07R40					1	0,23
	-	-	-	20	2	2	2	K3-07R22					1	0,23
● Contactors														
	4	3	3	25	1	-	2	K3-10R10					1	0,23
	4	3	3	25	-	1	2	K3-10R01					1	0,23
	5,5	4	4	25	1	-	2	K3-14R10					1	0,23
	5,5	4	4	25	-	1	2	K3-14R01					1	0,23
	7,5	5	5	32	1	-	2	K3-18R10					1	0,23
	7,5	5	5	32	-	1	2	K3-18R01					1	0,23
	11	6	7	32	1	-	2	K3-22R10					1	0,23
	11	6	7	32	-	1	2	K3-22R01					1	0,23

Standard Coils

Voltage	Color of housing
24V 50Hz	white
110V 50Hz	bright grey
180V 50Hz	yellow
230V 50Hz	blue
special voltages	pink

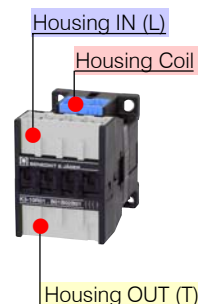
Auxiliary

● Auxiliary Contact Blocks

	for Contactors	AC15 230V A	I _{th} A	Contacts		Type	Pack pcs.	Weight kg/pc.
				NO	NC			
	K3-..R..	3	10	1	-	HN10R	10	0,02
	K3-..R..	3	10	-	1	HN01R	10	0,02

Order Example for Contactors:

Contactor	Coil Voltage	Code Housing Coil	Code Housing IN (L)	Code Housing OUT (T)
K3-14R10	230	B01	B02	B01



Technical data are subject to change without notice

Contactors, RAST 5 Combinations

AC operated

	Motor			Type	Coil Voltage	Code Housing Coil	Screw Connection IN (L)	Code Housing OUT (T)	Pack pcs.	Weight kg/pc.
	AC2, AC3	AC3	for							
	380V	400V	Circuit Breakers							
	400V	415V	M4...							
	kW	A								
● Contactors for Fuseless Load Feeders										
	4	10	M4-32T(R)-0,16.... M4-32T(R)-10	K3-10R10	...	PZ	...	VK3	1	0,23
	4	10	M4-32T(R)-0,16.... M4-32T(R)-10	K3-10R01	...	PZ	...	VK3	1	0,23
	5,5	14	M4-32T(R)-13	K3-14R10	...	PZ	...	VK3	1	0,23
	5,5	14	M4-32T(R)-13	K3-14R01	...	PZ	...	VK3	1	0,23
	7,5	18	M4-32T(R)-17	K3-18R10	...	PZ	...	VK3	1	0,23
	7,5	18	M4-32T(R)-17	K3-18R01	...	PZ	...	VK3	1	0,23
	11	22	M4-32T(R)-22.... M4-32T(R)-32	K3-22R10	...	PZ	...	VK3	1	0,23
	11	22	M4-32T(R)-22.... M4-32T(R)-32	K3-22R01	...	PZ	...	VK3	1	0,23
								Pozidriv ...PZ		
								TorxTX		

	Motor			Type	Coil Voltage	Code Housing Coil	Code Housing IN (L)	Screw Connection OUT (T)	Pack pcs.	Weight kg/pc.
	AC2, AC3	AC3	for							
	380V	400V	Overload Relays							
	400V	415V	U12/16E.. and U3/32...							
	kW	A								
● Contactors for Overload Relays										
	4	10	U12/16E 0,18-...23 and U3/32 0,18-...32	K3-10R10	...	PZ	...		1	0,23
	4	10	U12/16E 0,18-...23 and U3/32 0,18-...32	K3-10R01	...	PZ	...		1	0,23
	5,5	14	U12/16E 0,18-...23 and U3/32 0,18-...32	K3-14R10	...	PZ	...		1	0,23
	5,5	14	U12/16E 0,18-...23 and U3/32 0,18-...32	K3-14R01	...	PZ	...		1	0,23
	7,5	18	U12/16E 0,18-...23 and U3/32 0,18-...32	K3-18R10	...	PZ	...		1	0,23
	7,5	18	U12/16E 0,18-...23 and U3/32 0,18-...32	K3-18R01	...	PZ	...		1	0,23
	11	22	U12/16E 0,18-...23 and U3/32 0,18-...32	K3-22R10	...	PZ	...		1	0,23
	11	22	U12/16E 0,18-...23 and U3/32 0,18-...32	K3-22R01	...	PZ	...		1	0,23
								Pozidriv ...PZ		
								TorxTX		

Selection of Contactor-Housings for Standard plugs acc. **Industry Standard RAST 5**



IN (L)

13	L3	L2	L1
4.	3.	2.	1.

OUT (T)

T1	T2	T3	T4
1.	2.	3.	4.

Contactor Housings –B01

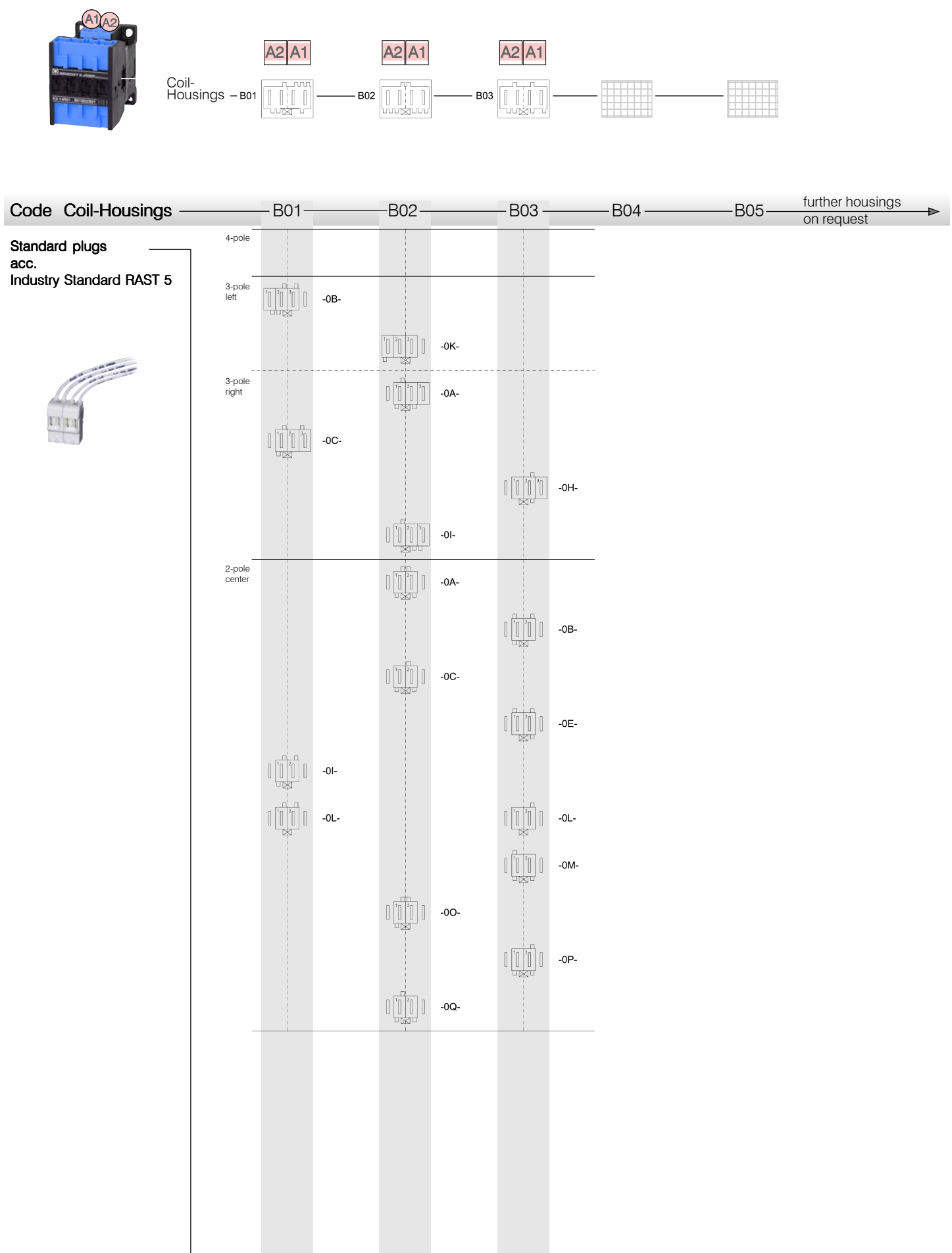
B02

Code Contactor-Housings	B01	B02	B03	B04	further housings on request
8-pole					
6-pole left					
6-pole right					
4-pole left		-0A-			
4-pole right		-0B-		-0B-	
2-pole left		-0A-		-0A-	
		-0C-		-0C-	
		-0I-			
		-0L-			
		-0O-		-0O-	
		-0Q-		-0Q-	
2-pole center left		-0A-			
		-0C-			
		-0K-		-0K-	
		-0O-			
		-0Q-			
2-pole center right		-0B-		-0B-	
		-0F-		-0F-	
		-0K-			
		-0L-		-0L-	
2-pole right		-0B-		-0B-	
		-0F-		-0F-	
		-0I-		-0I-	
		-0L-		-0L-	

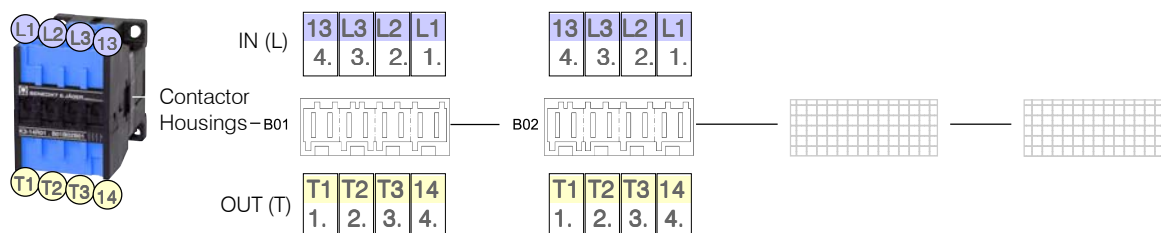
Order Example for Contactors:

Contactor	Coil Voltage	Code Housing Coil ...see page 7, 9, 11, 13	Code Housing IN (L) ... see page 6, 8, 10, 12	Code Housing OUT (T) ...see page 6, 8, 10, 12
K3-14R10...	230...	B01	B02	B01

Selection of Coil-Housings for Standard plugs acc. **Industry Standard RAST 5**

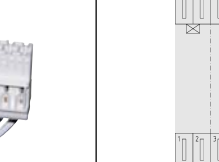


Selection of Contactor-Housings for Standard plugs acc. **System Stocko RAST 5**



Code Contactor-Housings

Standard plugs acc. System Stocko RAST 5



Order Example for Contactors:

Contactor	Coil Voltage	Code Housing Coil ...see page 7, 9, 11, 13	Code Housing IN (L)... see page 6, 8, 10, 12	Code Housing OUT (T)...see page 6, 8, 10, 12
K3-14R10	230	B01	B02	B01

see... Industry Standard RAST 5

B01 **B02** **B03** **B04** further housings on request

8-pole

6-pole left

6-pole right

4-pole left

4-pole right

2-pole

-31-

-34-

-35-

-38-

-50-

-65-

-1F-

-34-

-35-

-38-

-50-

-65-

-1F-

-14-

-16-

-53-

-60-

-73-

-75-

-10-

-60-

Selection of Contactor-Housings for Standard plugs acc. **System Tyco RAST 5**



IN (L)

13	L3	L2	L1
4.	3.	2.	1.

OUT (T)

T1	T2	T3	T14
1.	2.	3.	4.

Contactor Housings – B01

B02

Code Contactor-Housings	B01	B02	B03	B04	further housings on request
4-pole					
6-pole left		928151-6 2-928344-6			
6-pole right					
4-pole left		928344-4			
4-pole right			4-928344-4		
2-pole left				928344-2 3-964951-2	
		2-964951-2 928343-2			
			964951-2 4-928344-2		
2-pole center left		928344-2 3-964951-2 4-928344-2			
2-pole center right				2-928344-2 928343-2	
2-pole right			2-928344-2		
				2-964951-2 928343-2	

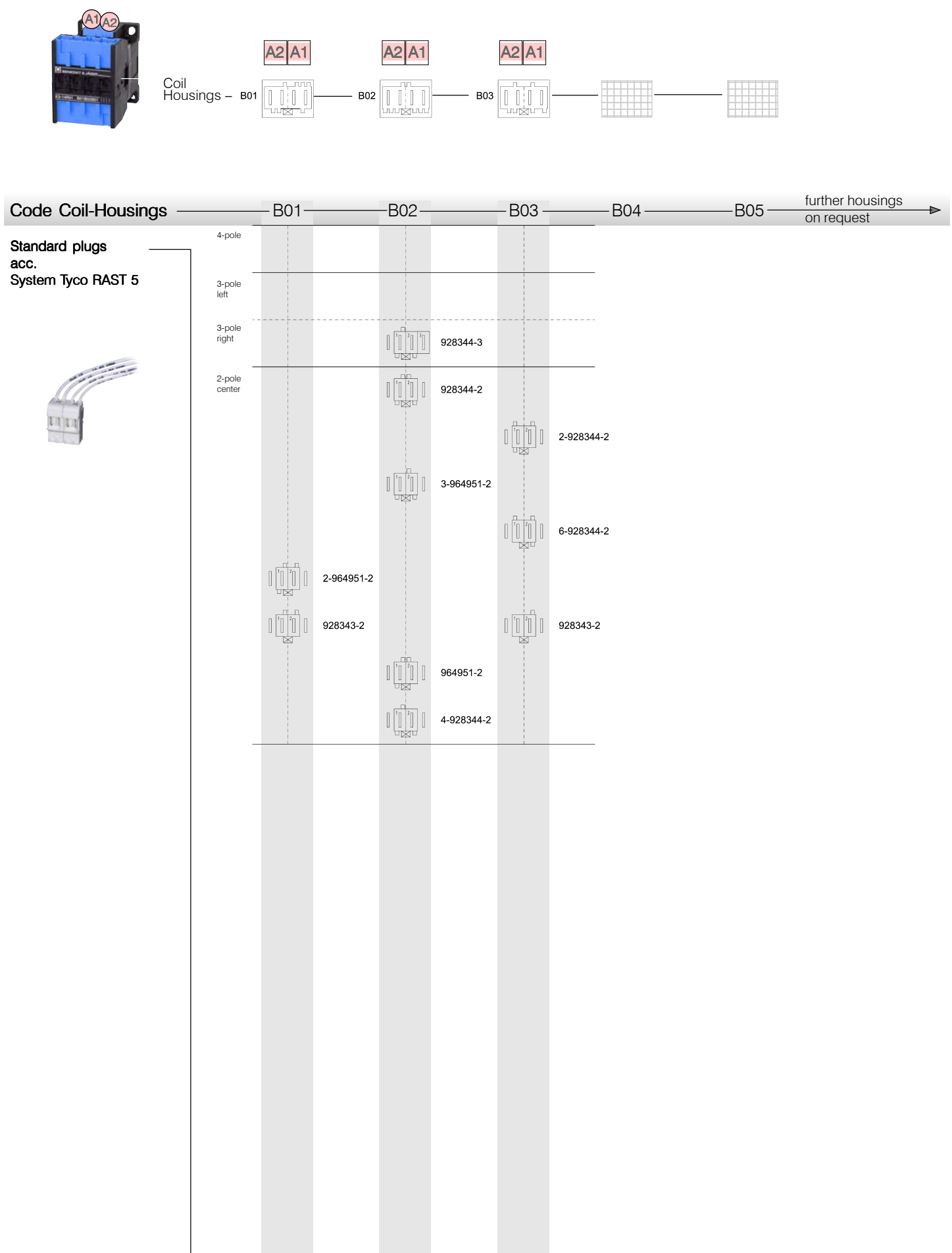
Standard plugs acc. System Tyco RAST 5



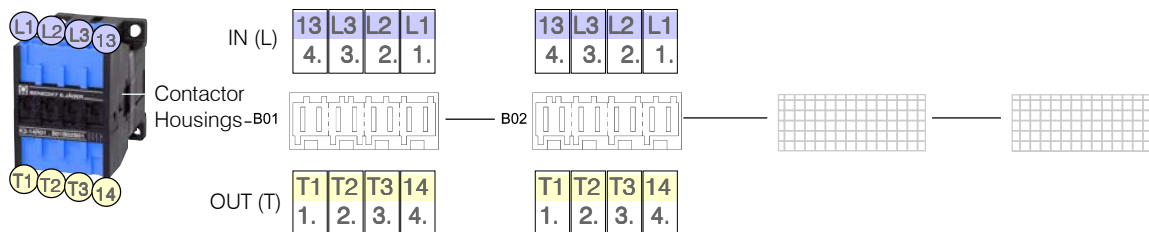
Order Example for Contactors:

Contactor	Coil Voltage	Code Housing Coil ...see page 7, 9, 11, 13	Code Housing IN (L) ... see page 6, 8, 10, 12	Code Housing OUT (T) ...see page 6, 8, 10, 12
K3-14R10...	230...	B01	B02	B01

Selection of Coil-Housings for Standard plugs acc. **System Tyco RAST 5**



Selection of Contactor-Housings for Standard plugs acc. **System Lumberg RAST 5**



Code Contactor-Housings		B01				B02				B03				B04				further housings on request
Standard plugs acc. System Lumberg RAST 5 		8-pole																
		6-pole left								-10-								
		6-pole right																
		4-pole left		-01-														
		4-pole right		-02-						-02-								
		2-pole left								-01-								
										-03-								
				-09-														
		2-pole center left		-01-														
				-03-														
									-10-									
2-pole center right									-02-									
									-06-									
			-10-															
2-pole right		-02-																
		-06-																
									-09-									

Order Example for
Contactors:

- Contactor

- Coil Voltage

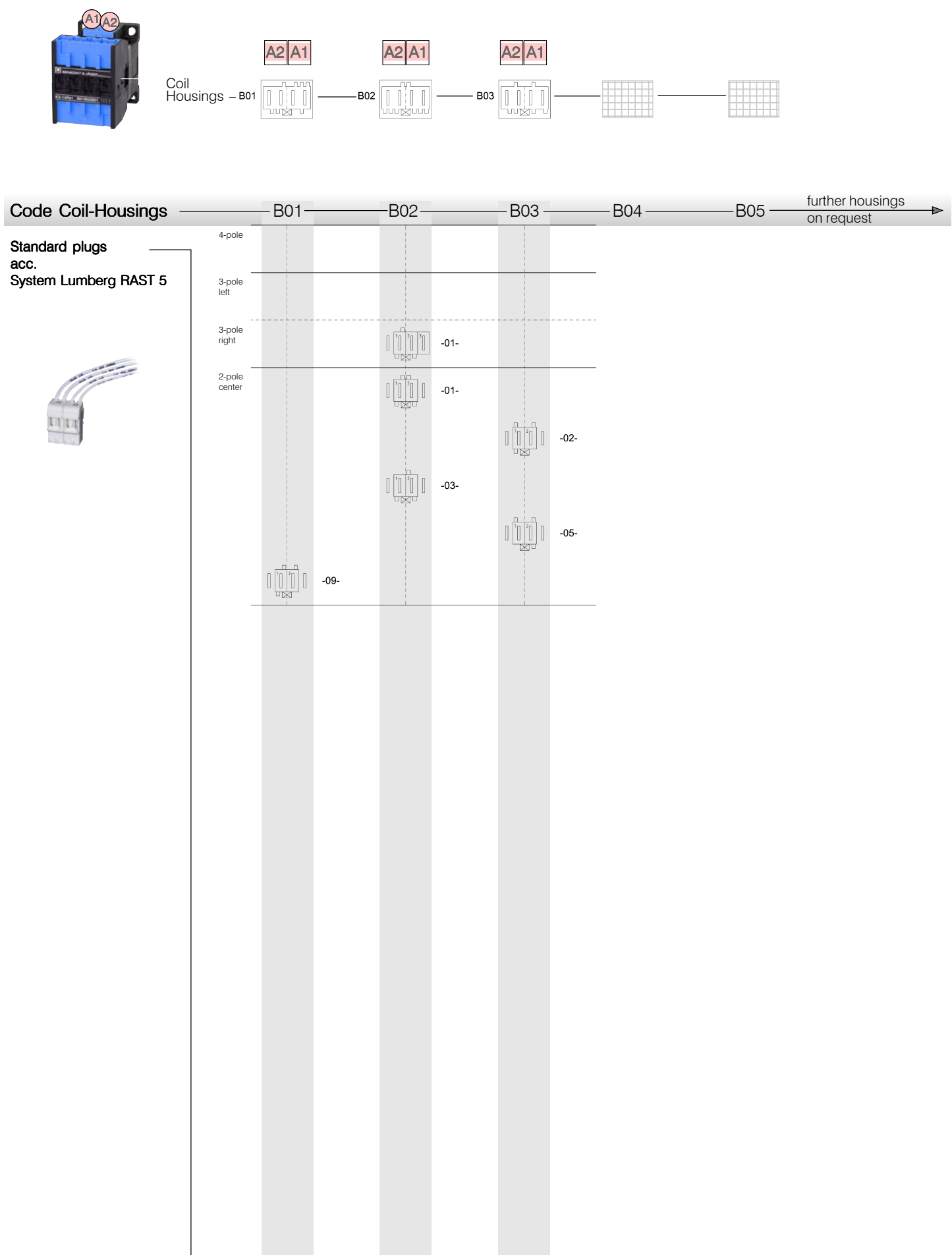
- Code Housing Coil ...see page 7, 9, 11, 13

- Code Housing IN (L) ... see page 6, 8, 10, 12

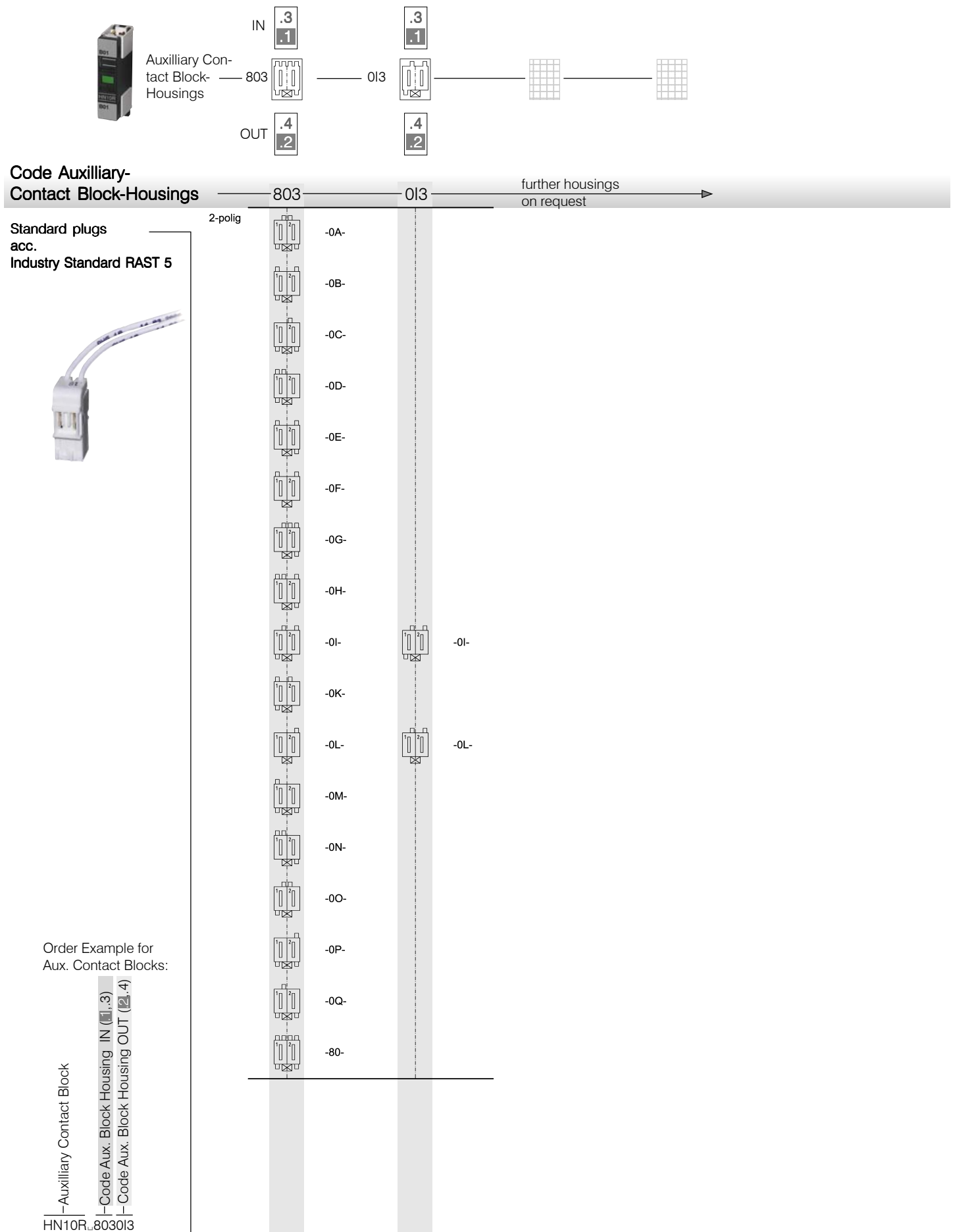
- Code Housing OUT (T) ...see page 6, 8, 10, 12

K3-14R10...230..B01B02B01

Selection of Coil-Housings for Standard plugs acc. **System Lumberg RAST 5**



Selection of Auxiliary Contact Block-Housings for Standard plugs acc. **Industry Standard RAST 5**



Selection of Auxiliary Contact Block-Housings for Standard plugs acc. **System Stocko RAST 5**



Auxiliary Contact Block-Housings

EIN

AUS

803

0I3

further housings on request

Code Auxilliary-Contact Block-Housings

803

0I3

further housings on request

Standard plugs acc. System Stocko RAST 5



2-polig

-0A-

-0B-

-0C-

-0D-

-0E-

-0F-

-0G-

-0H-

-0I-

-0K-

-0L-

-0M-

-0N-

-0O-

-0P-

-0Q-

-80-

-0I-

-0L-

Order Example for Aux. Contact Blocks:

-Auxiliary Contact Block

-Code Aux. Block Housing IN (1.3)

-Code Aux. Block Housing OUT (2.4)

HN10R.8030I3

Selection of Auxiliary Contact Block-Housings for Standard plugs acc. **System Tyco RAST 5**



Auxiliary Contact Block-Housings

EIN

AUS

803

013

further housings on request

Code Auxilliary-Contact Block-Housings

Standard plugs acc. System Tyco RAST 5



2-polig	928344-2	
	2-928344-2	
	3-964951-2	
	6-928344-2	
	5-928344-2	
	3-928344-2	
	2-964951-2	2-964951-2
	928343-2	928343-2
	964951-2	
	4-928344-2	

Order Example for Aux. Contact Blocks:

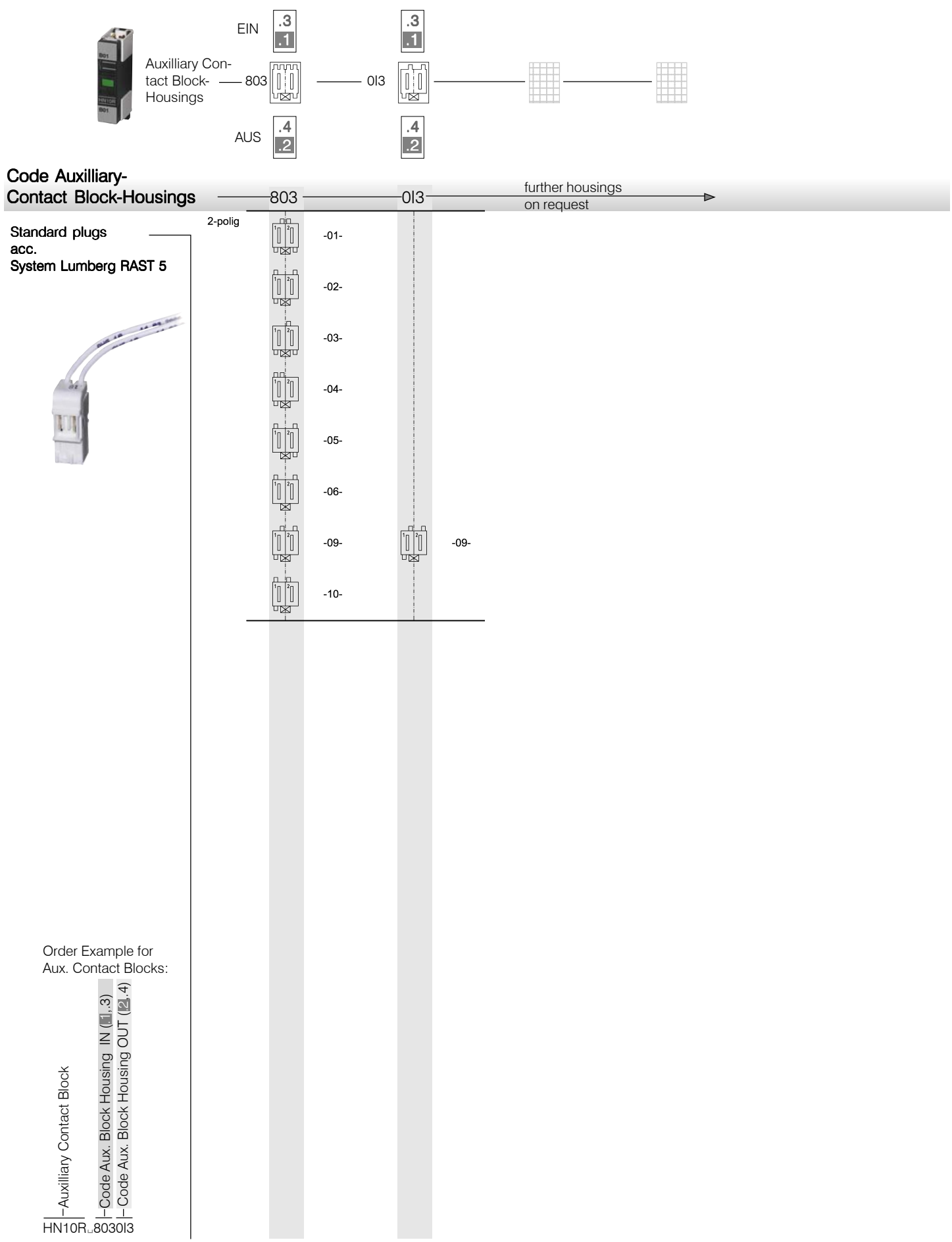
Auxiliary Contact Block

Code Aux. Block Housing IN (1.3)

Code Aux. Block Housing OUT (2.4)

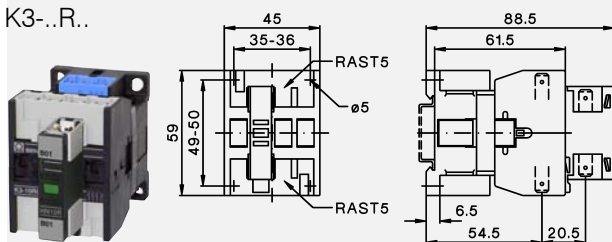
HN10R..803013

Selection of Auxiliary Contact Block-Housings for Standard plugs acc. **System Lumberg RAST 5**

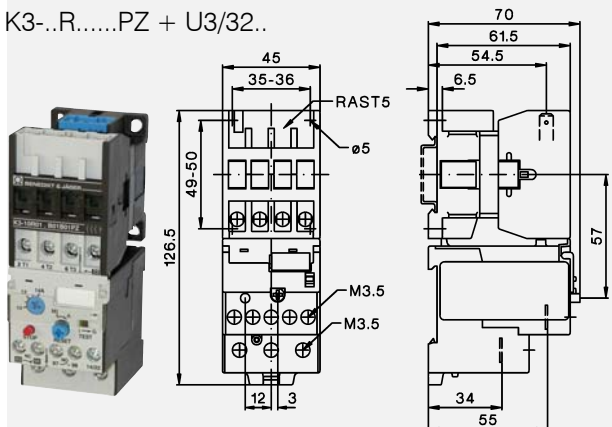


Dimensions

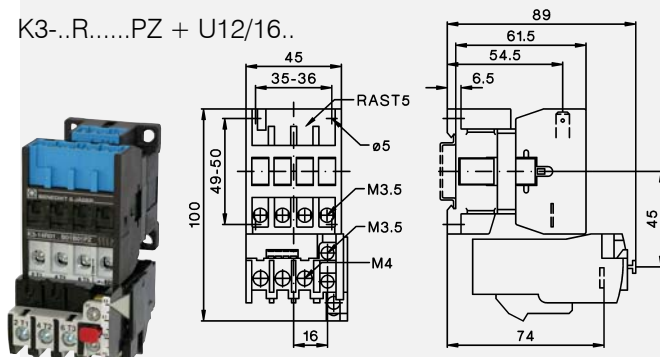
K3-..R..



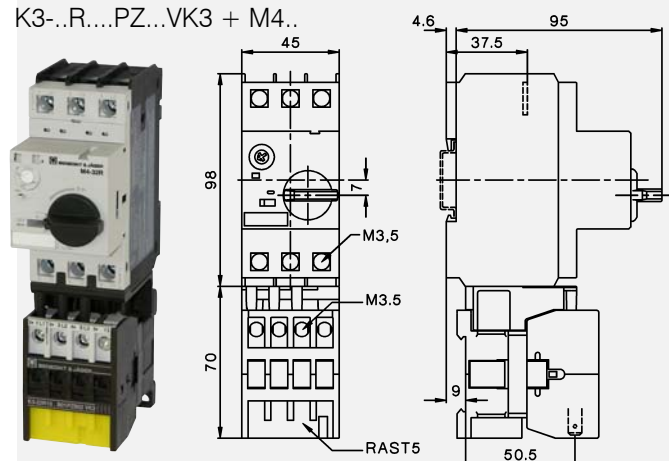
K3-..R.....PZ + U3/32..



K3-..R.....PZ + U12/16..



K3-..R....PZ...VK3 + M4..



Color-Coding acc. to Ratings

Contactor	Type	Ratings AC3/415V	Color Contactor Housing
-----------	------	---------------------	-------------------------------

Contactor Relay

K3-07R...	-	pink
-----------	---	------

Contactor

K3-10R...	4 kW	bright grey
K3-14R...	5,5 kW	blue
K3-18R...	7,5 kW	dark grey
K3-22R...	11 kW	yellow

Color-Coding acc. to Coil Voltage

Voltage	Color Coil Housing
---------	-----------------------

24V	white
110V	bright grey
180V	yellow
230V	blue
Special Voltage	pink

Technical data are subject to
change without notice

Data acc. to IEC 60947-4-1, VDE 0660

Main Contacts		Type	K3-07R	K3-10R	K3-14R	K3-18R	K3-22R
Rated insulation voltage U_i ¹⁾		V~	415	415	415	415	415
Making capacity I_{eff} at $U_e = 415V\sim$		A	-	200	200	200	200
Breaking capacity I_{eff} at $U_e = 415V\sim$ $\cos\varphi = 0,65$		A	-	180	180	200	200
Utilization category AC1							
Switching of resistive load							
Rated operational current $I_e (=I_{th})$ at 40°C, open	415V	A	20	25	25	32	32
Rated operation power of three-phase resistive loads 50-60Hz, $\cos\varphi = 1$	220V	kW	-	9,5	9,5	12,2	12,2
	230V	kW	-	9,9	9,9	12,7	12,7
	240V	kW	-	10,4	10,4	13,3	13,3
	380V	kW	-	16,4	16,4	21,0	21,0
	400V	kW	-	17,3	17,3	22,1	22,1
	415V	kW	-	17,9	17,9	23,0	23,0
Utilization category AC2 and AC3							
Switching of three-phase motors							
Rated operational current I_e open and enclosed	220V	A	-	12	15	18	22
	230V	A	-	11,5	14,5	18	22
	240V	A	-	11	14	18	22
	380-400V	A	-	10	14	18	22
	415V	A	-	9	14	18	22
Rated operational power of three-phase motors 50-60Hz	220-230V	kW	-	3	4	5	6
	240V	kW	-	3	4	5	7
	380-400V	kW	-	4	5,5	7,5	11
	415V	kW	-	4,5	6	8,5	12
Auxiliary Contacts							
Rated insulation voltage U_i		V~	415	415	415	415	415
Thermal rated current I_{th} up to 415V							
Ambient temperature	40°C	A	16	16	16	16	16
	60°C	A	12	12	12	12	12
Utilization category AC15							
Rated operational current I_e	220-240V	A	12	12	12	12	12
	380-415V	A	4	4	4	4	4
Utilization category DC13							
Rated operational current I_e	60V	A	8	8	8	8	8
	110V	A	1	1	1	1	1
	220V	A	0,1	0,1	0,1	0,1	0,1
Short circuit protection							
gL (gG)		A	25	25	25	25	25

1) Suitable for: earthed -neutral systems, overvoltage category I to III, pollution degree 3 (Industry-Standard): $U_{imp} = 4kV$. Data for other conditions on request.

Data acc. to IEC 60947-4-1, VDE 0660

Main Contacts		Type	K3-07R	K3-10R	K3-14R	K3-18R	K3-22R	
Maximum ambient temperature								
Operation	open	°C	-40 up to +60 (+90) ¹⁾					
	enclosed	°C	-40 up to +40					
	with thermal overload relay	open	°C	-25 up to +60				
	enclosed	°C	-25 up to +40					
Storage		°C	-50 up to +90					
Short circuit protection								
for contactors without themal overload relay								
Coordination-Type "1" acc. to IEC 947-4-1, Contact welding without hazard of persons								
max. fuse size	gL (gG)	A	25	63	63	63	63	
Coordination-Type "2" acc. to IEC 947-4-1, light Contact welding accepted								
max. fuse size	gL (gG)	A		25	35	35	35	
Contact welding not accepted								
max. fuse size	gL (gG)	A		16	16	16	16	
for Contactors with thermal overload relay the device with the smaller admissible backup fuse (contactor or thermal overload relay) determines the fuse size.								
Frequency of operations z								
Contactors without thermal overload relay								
	without load	1/h	10000	10000	10000	10000	10000	
	AC3, I _e	1/h		600	600	600	600	
	AC4, I _e	1/h		120	120	120	120	
	DC3, I _e	1/h		600	600	600	600	
Mechanical life								
AC-operated		S x 10 ⁶	10	10	10	10	10	
DC-operated		S x 10 ⁶	10	10	10	10	10	
Short time current								
	10sec.-current	A		96	120	144	176	
Power loss per pole								
	at I _e /AC3 400V	W		0,21	0,35	0,5	0,75	
Resistance to shock acc. to IEC 68-2-27								
Shock time 20ms sine-wave	NO	g	10					
	NC	g	6					
Control Circuit								
Power consumption of coils								
AC operated	inrush	VA	33-45					
	sealed	VA	7-10					
		W	2,6-3					
DC operated	inrush	W	75					
	sealed	W	2					
Operating range of coils								
in multiples of control voltage U _s								
	AC operated		0,85-1,1					
	DC operated		0,8-1,1					
Switching time at control voltage U _s ±10% ^{2) 3)}								
AC operated	make time	ms	8-16					
	release time	ms	5-13					
	arc duration	ms	10-15					
DC operated	make time	ms	8-12					
	release time	ms	8-13					
	arc duration	ms	10-15					

1) With reduced control voltage range 0,9 bis 1,0 x U_s and with reduced rated current I_e/AC1 acc. to I_e/AC3

2) Total breaking time = release time + arc duration

3) Values for delay of the release time of the make contact and the make time of the break contact will be increased, if magnet coils are protected with coil suppressor (Varistor, RC-Unit, Diode-Unit).

Data acc. to UL508

Main Contacts (cULus)		Type	K3-10R	K3-14R	K3-18R	K3-22R
Rated operational current "General Use"		A	25	25	30	30
Motor DOL 3-phase at 60Hz						
Rated operational current	415V	A	10	14	18	22
Rated operational power	110-120V	hp	1½	2	2	3
	200-208V	hp	3	3	5	5
	220-240V	hp	3	3	5	5
	265-277V	hp	3	5	7½	7½
	380-415V	hp	5	5	10	10
Motor DOL 1-phase at 60Hz						
Rated operational current	415V	A	10	14	18	22
Rated operational power of AC motor at 60Hz (1ph)	110-120V	hp	½	¾	1	1½
	200-208V	hp	1	1½	2	3
	220-240V	hp	1½	2	3	3
	265-277V	hp	2	3	3	3
	380-415V	hp	3	3	5	5
Fuses		A	30	40	50	50
Suitable for use on a capability of delivering not more than (SCCR)	rms	A	5000	5000	5000	5000
		V	415	415	415	415
Auxilliary Contacts (cULus)			A300	A300	A300	A300

Accessories

Data acc. to IEC 60947-5-1, VDE 0660

Auxilliary Contacts		Type	HN10R	HN01R
Rated insulation voltage U_i		V~	415	415
Thermal rated current I_{th} up to 415V				
Ambient temperature	max. 40°C	A	10	10
	max. 60°C	A	6	6
Frequency of operations z		1/h	3000	3000
Mechanical life		$S \times 10^6$	10	10
Power loss per pole at $I_g/AC1$		W	0,5	0,5
Utilization category AC15				
Rated operational current I_g	220-240V	A	3	3
	380-415V	A	2	2
Utilization category DC13				
Rated operational current I_g	60V	A	2	2
	110V	A	0,4	0,4
	220V	A	0,1	0,1
Short circuit protection				
short circuit current 1kA, contact welding not accepted max. fuse size		gL (gG)	A	20

Data acc. to UL508

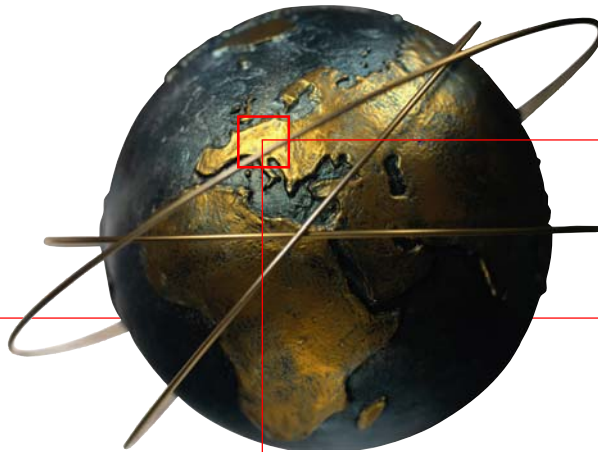
Rated operational current "General Use"		A	10	10
Rated operational voltage		max.	V~	300
Auxiliary Contacts			A300	A300

Benedict - permanently innovative

The **Benedict LLC** is a medium-sized company with 80 years experience in production of control gear, designed for the operation under extreme conditions and well known for their high reliability.

The high qualification of our staff, the Qualitymanagement ISO 9001, short term and reliable deliveries – even for customer dedicated products – are presupposition for the decades lasting co-operation with our big customers. The moving forces are three generations spirit of enterprise.

In **Co-operation** with our customers we are developing and improving our line of products constantly. Modern production processes do not secure the future of our company only, but they also provide perfect technology. Never for the end in itself, but always in unison with the need of the markets. Special requests are as „normal“ as unusual parameter of power or customer-specific brandnames and solutions.



BENEDIKT & JÄGER products are used all around the world. From ski-lifts in the Alps over escalators in Hongkong till the undergrounds in London.

Tested in tropical climates, in sandstorms and in snow flurries. Produced for the safety of man and machine. We endeavour to impress our customers with quality, punctuality in line with the competitive market conditions. The specific promoted interplay of human energy for work within all firm levels of the **Benedict LLC** secures the success.

 **Quality made
in Austria**



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