

General Catalogue

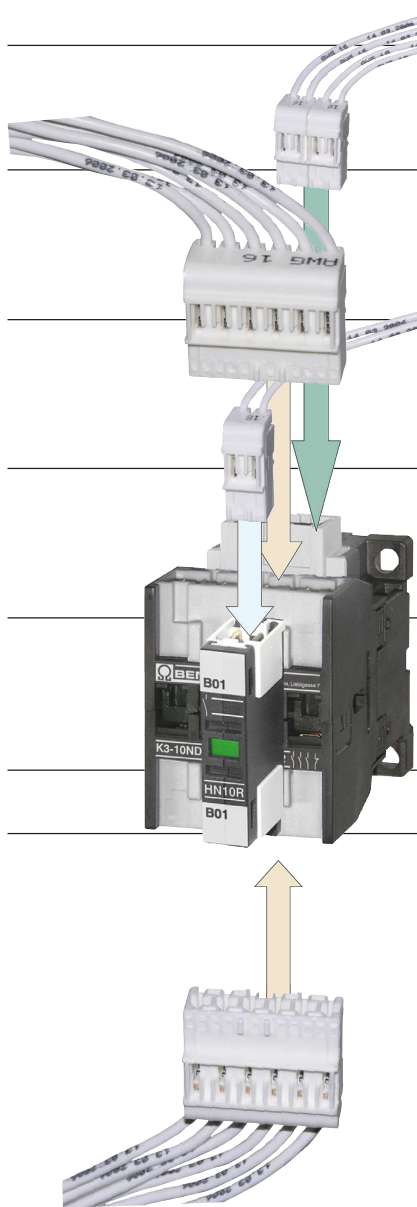


Quality made in



D946E201

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Contactors, Motor-Starters

Circuit Breakers

Manual Motor-Starters

Switches

AC-Main Switches

DC-Switch Disconnecter

Push Buttons

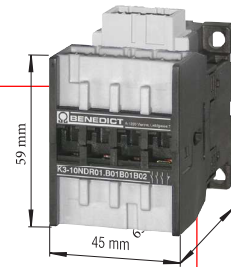
Representatives, Suppliers

RAST 5 - exclusiv for OEM-Partner

5 mm pitch connector system

Advantages RAST 5 - Technology

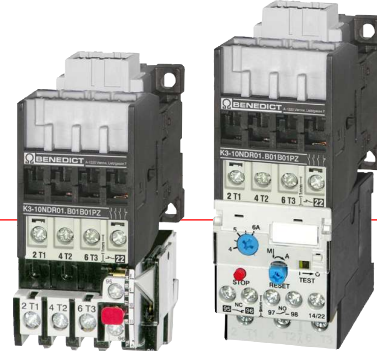
- Time saving installation
- Easy assembly without tools
- Tailor-made sockets, custom - designed codes
- Ambient temperatures up to +90°C/194°F
- Smallest sizes
- Plug technology up to 32 A / 415 V
- color coding for power ratings
- color coding for coil voltages



RAST5 - Accessories



Combining switchgears with plug-in connections and screw connections



Contactors are available for plugs of many different producers




Contactors, RAST 5





AC operated

Ratings			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.
AC2, AC3	220V	240V		AC1	NO									NC
380V			AC1	✓	✓								
400V	220V		415V	✓	✓								
415V	230V	240V	A	NO	NC	HN10R..							

• Contactor Relays


	-	-	-	10	4	-	2	K3-07NDR40	...	...	...	1	0,23
	-	-	-	10	2	2	2	K3-07NDR22	...	...	...	1	0,23

• Contactors

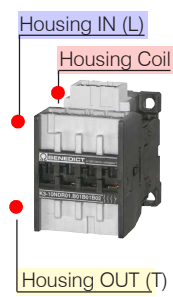
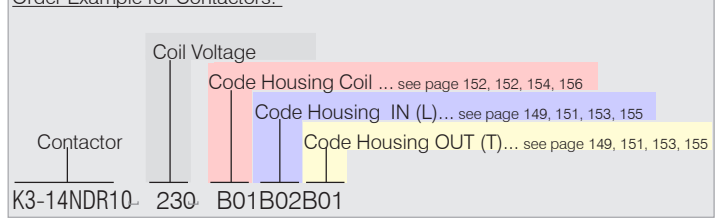
	4	3	3	25	1	-	2	K3-10NDR10	...	...	...	1	0,23
	4	3	3	25	-	1	2	K3-10NDR01	...	...	...	1	0,23
	5,5	4	4	25	1	-	2	K3-14NDR10	...	...	...	1	0,23
	5,5	4	4	25	-	1	2	K3-14NDR01	...	...	...	1	0,23
	7,5	5	5	32	1	-	2	K3-18NDR10	...	...	...	1	0,23
	7,5	5	5	32	-	1	2	K3-18NDR01	...	...	...	1	0,23
	11	6	7	32	1	-	2	K3-22NDR10	...	...	...	1	0,23
	11	6	7	32	-	1	2	K3-22NDR01	...	...	...	1	0,23

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:



Technical data are subject to change without notice

Contactors, RAST 5 Combinations
AC operated


Motor
AC2, AC3
380V AC3
400V 400V
415V 415V
kW A
for
Overload Relays
U12/16E.. and U3/32...

Type

Coil Voltage	Code Housing Coil	Code Housing IN (L)	Screw Connection OUT (T)
--------------	-------------------	---------------------	--------------------------

Pack Weight
pcs. kg/pcs.

● Contactors for Overload Relays

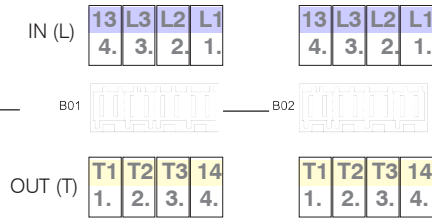
	4	10	U12/16E 0,18-..23 K3 and U3/32 0,18-..32	K3-10NDR10	...	...	.PZ	1	0,23
	4	10	U12/16E 0,18-..23 K3 and U3/32 0,18-..32	K3-10NDR01	...	...	.PZ	1	0,23
	5,5	14	U12/16E 0,18-..23 K3 and U3/32 0,18-..32	K3-14NDR10	...	...	.PZ	1	0,23
	5,5	14	U12/16E 0,18-..23 K3 and U3/32 0,18-..32	K3-14NDR01	...	...	.PZ	1	0,23
	7,5	18	U12/16E 0,18-..23 K3 and U3/32 0,18-..32	K3-18NDR10	...	...	.PZ	1	0,23
	7,5	18	U12/16E 0,18-..23 K3 and U3/32 0,18-..32	K3-18NDR01	...	...	.PZ	1	0,23
	11	22	U12/16E 0,18-..23 K3 and U3/32 0,18-..32	K3-22NDR10	...	...	.PZ	1	0,23
	11	22	U12/16E 0,18-..23 K3 and U3/32 0,18-..32	K3-22NDR01	...	...	.PZ	1	0,23

Pozidriv ... **PZ**
Torx ... **TX**

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



Contactor Housings



Code Contactor-Housings — B01 — B02 — B03 — B04 further housings on request

Standard plugs acc. Industry Standard RAST 5



8-pole			
6-pole left			
6-pole right			
4-pole left		-0A-	
4-pole right		-0B-	
2-pole left			
		-0I-	
		-0L-	
2-pole center left		-0A-	
		-0C-	
		-0O-	
		-0Q-	
2-pole center right			
		-0K-	
		-0O-	
		-0Q-	
2-pole right		-0B-	
		-0F-	
		-0I-	
		-0L-	

Order Example for Contactors:

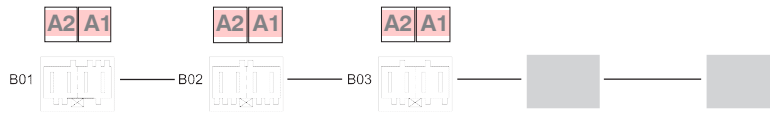
— Contactor
 — Coil Voltage
 — Code Housing Coil ...see page 150, 152, 154, 156
 — Code Housing IN (L) ... see page 149, 151, 153, 155
 — Code Housing OUT (T) ...see page 149, 151, 153, 155
 K3-14NR10_230_B01 B02 B01

- Contactor-Motor-Starter
- Circuit Breakers
- Manual Motor-Starters
- Switches
- AC-Main Switches
- DC-Switch Disconnect
- Push Buttons
- Representatives, Suppliers

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



Coil-Housings



Code Coil-Housings ——— **B01** ——— **B02** ——— **B03** ——— **B04** ——— **B05** — further housings on request →

Standard plugs acc. Industry Standard RAST 5

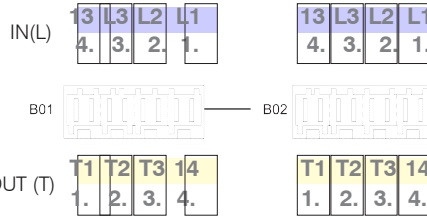


Standard plugs acc. Industry Standard RAST 5	B01	B02	B03	B04	B05
4-pole					
3-pole left	-0B-	-0K-			
3-pole right	-0C-	-0A-	-0H-		
2-pole center	-0I-	-0A-	-0B-		
	-0L-	-0C-	-0E-		
		-0O-	-0M-		
		-0Q-	-0P-		

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



Contactor Housings



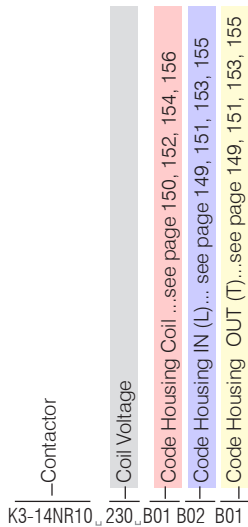
Code Contactor-Housings — B01 — B02 — B03 — B04 further housings on request

Standard plugs acc. System Stocko RAST 5



Pole Configuration	B01	B02	Code
8-pole			-31-
6-pole left			-34-
			-35-
			-38-
			-50-
			-65-
			-1F-
6-pole right			-34-
			-35-
			-38-
			-50-
			-65-
			-1F-
4-pole left			-14-
			-16-
			-53-
			-60-
			-73-
			-75-
4-pole right			-10-
			-60-
2-pole	see... Industry Standard RAST 5		

Order Example for Contactors:



- Contactor-Motor-Starters
- Circuit Breakers
- Manual Motor-Starters
- Switches
- AC-Main Switches
- DC-Switch Disconnectors
- Push Buttons
- Representatives, Suppliers

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



Coil-Housings – B01



Code Coil-Housings

Standard plugs
acc.
System Stocko RAST 5

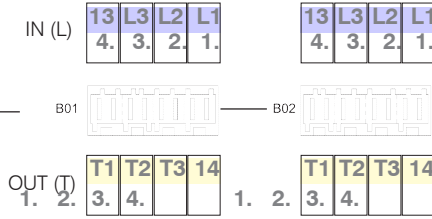


	B01	B02	B03	B01	B02	B03
4-pole	-42-	-64-	-78-		-02-	-02-
	-78-	-78-	-78-		-04-	-03-
	-79-		-79-			-18-
3-pole right			-01-	-19-		
			-05-	-21-		
			-12-			-28-
		-16-		-47-		
			-30-		-52-	-52-
			-32-		-53-	
	-33-					-64-
	-36-		-35-		-66-	
		-40-		-71-		
			-44-		-74-	-73-
			-48-		-75-	-75-
	-49-			see... Industry Standard RAST 5		
	-51-					
	-72-	-72-	-72-			
		-75-	-75-			
3-pole left						
2-pole center						

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



Contactor Housings



Code Contactor-Housings — B01 — B02 — B03 — B04 further housings on request

Standard plugs acc. System Tyco RAST 5



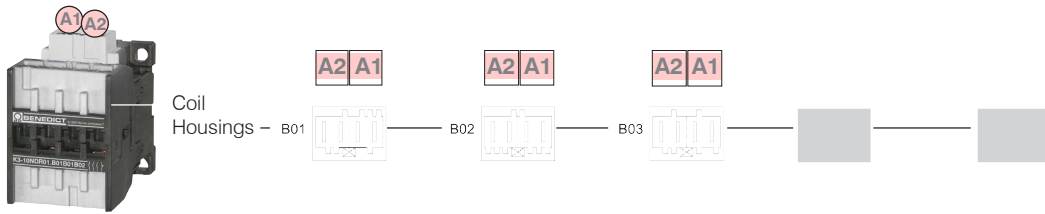
Order Example for Contactors:

— Contactor K3-14NR10
 — Coil Voltage 230
 — Code Housing Coil ...see page 150, 152, 154, 156 B01
 — Code Housing IN (L) ... see page 149, 151, 153, 155 B02
 — Code Housing OUT (T) ...see page 149, 151, 153, 155 B01

	B01	B02	B03	B04
8-pole				
6-pole left		928151-6		
		2-928344-6		
6-pole right				
4-pole left		928344-4		
				4-928344-4
4-pole right				
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		928343-2

- Contactor-Motor-Starters
- Circuit Breakers
- Manual Motor-Starters
- Switches
- AC-Main Switches
- DC-Switch Disconnectors
- Push Buttons
- Representatives, Suppliers

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



Code Coil-Housings ——— **B01** ——— **B02** ——— **B03** ——— **B04** ——— **B05** — further housings on request →

Standard plugs acc. System Lumberg RAST 5

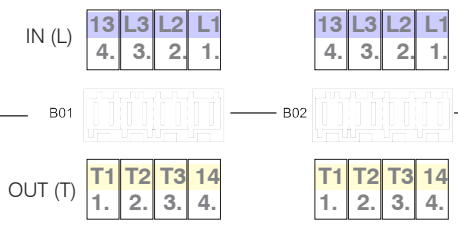


Code	Coil-Housings	B01	B02	B03	B04	B05
4-pole						
3-pole left						
3-pole right			928344-3			
2-pole center			928344-2		2-928344-2	
			3-964951-2		6-928344-2	
		2-964951-2				
		928343-2				928343-2
			964951-2			
			4-928344-2			

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



Contactor Housings



Code Contactor-Housings **B01** **B02** **B03** **B04** further housings on request

Standard plugs acc. System Lumberg RAST 5



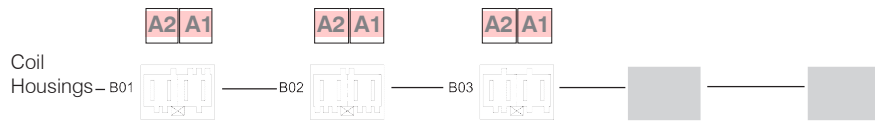
8-pole			
6-pole left			-10-
6-pole right			
4-pole left		-01-	
4-pole right		-02-	-02-
2-pole left			-01- -03-
			-09-
2-pole center left		-01- -03-	
			-10-
2-pole center right			-02- -06-
			-10-
2-pole right		-02- -06-	-09-

Order Example for Contactors:

- Contactor K3-14NR10, 230
- Coil Voltage B01
- Code Housing Coil ...see page 150, 152, 154, 156 B02
- Code Housing IN (L) ... see page 149, 151, 153, 155 B01
- Code Housing OUT (T) ...see page 149, 151, 153, 155

- Contactor, Motor-Starter
- Circuit Breakers
- Manual Motor-Starters
- Switches
- AC-Main Switches
- DC-Switch Disconnecter
- Push Buttons
- Representatives, Suppliers

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



Code Coil-Housings ——— **B01** ——— **B02** ——— **B03** ——— **B04** ——— **B05** — further housings on request →

Standard plugs acc. System Lumberg RAST 5

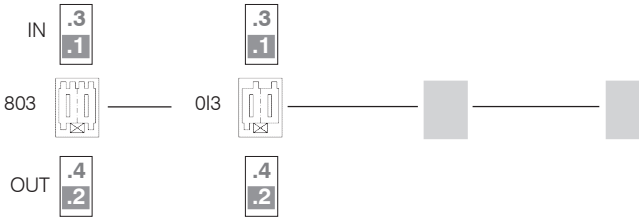


Code	Coil-Housings	B01	B02	B03	B04	B05
4-pole						
3-pole left						
3-pole right			-01-			
2-pole center			-01-			
			-03-		-02-	
						-05-
		-09-				

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



Auxiliary Contact Block-Housings

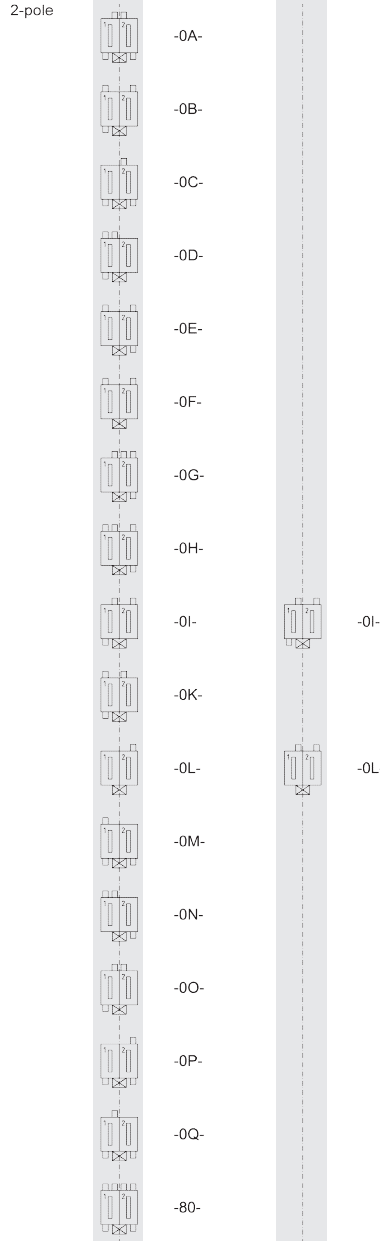


Code Auxiliary-Contact Block-Housings



further housings on request →

Standard plugs acc. Industry Standard RAST 5



Order Example for Aux. Contact Blocks:

HN10R-803013
 -Auxiliary Contact Block
 -Code Aux. Block Housing IN (1,3)
 -Code Aux. Block Housing OUT (2,4)

Contactor, Motor-Starter

Circuit Breakers

Manual Motor-Starters

Switches

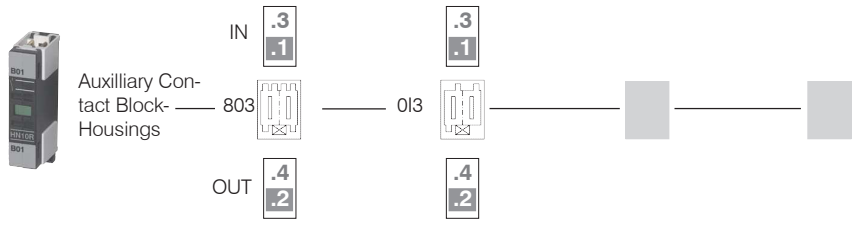
AC-Main Switches

DC-Switch Disconnect

Push Buttons

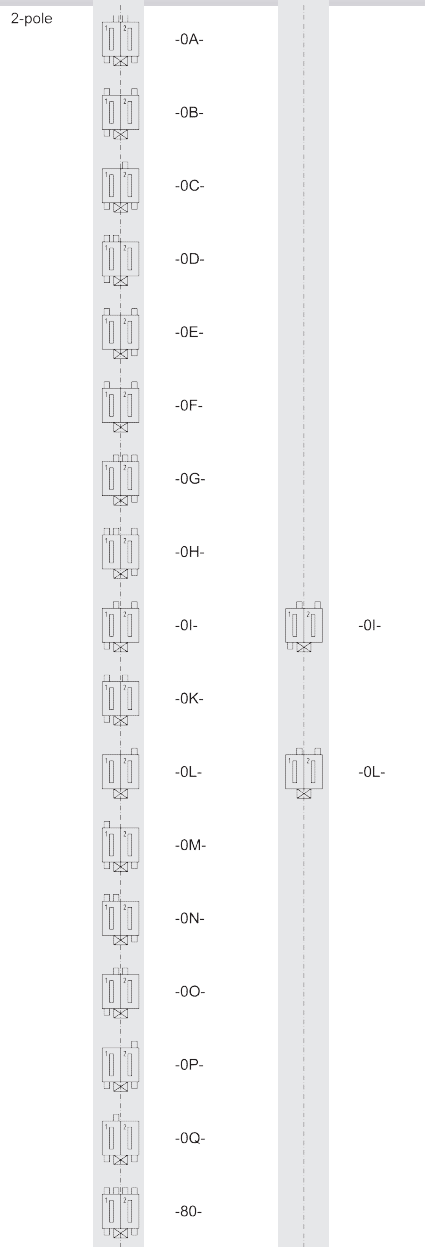
Representatives, Suppliers

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



Code Auxiliary-Contact Block-Housings 803 013 further housings on request →

Standard plugs acc. System Stocko RAST 5

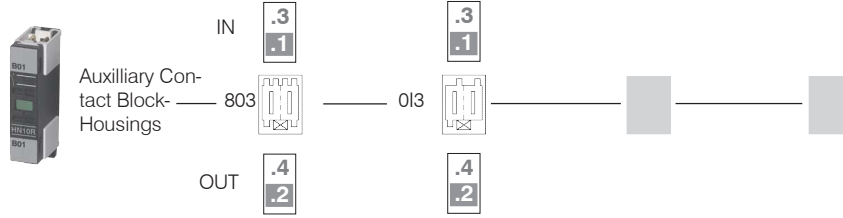


Order Example for Aux. Contact Blocks:

- 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 Tyco RAST 5**



Code Auxilliary-Contact Block-Housings



Standard plugs acc. System Tyco RAST 5



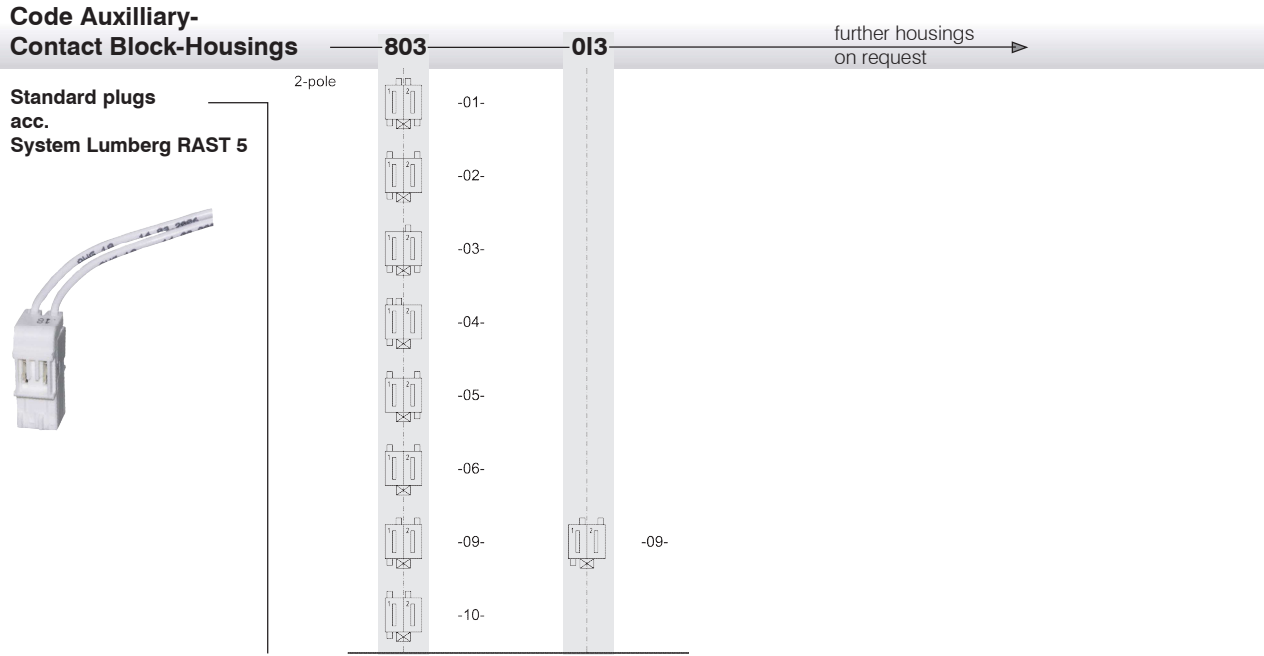
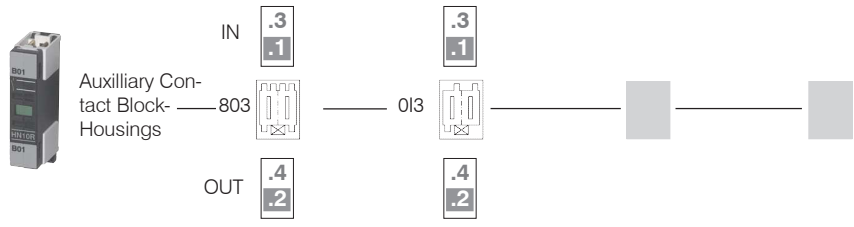
2-pole	803	013
	928344-2	
	2-928344-2	
	3-964951-2	
	6-928344-2	
	5-928344-2	
	3-928344-2	
	2-964951-2	2-964951-2
	928343-2	928343-2
	964951-2	
	4-928344-2	

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

- Contactors, Motor-Starters
- Circuit Breakers
- Manual Motor-Starters
- Switches
- AC-Main Switches
- DC-Switch Disconnecter
- Push Buttons
- Representatives, Suppliers

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



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

Main Contacts		Type	K3-07NDR	K3-10NDR	K3-14NDR	K3-18NDR	K3-22NDR
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 $I_e (=I_{th})$	415V	A	10	25	25	32	32
Rated operational current $I_e (=I_{th})$	415V	A	6	25	25	32	32
Rated operational power	220V	kW	-	9,5	9,5	12,2	12,2
of three-phase resistive loads	230V	kW	-	9,9	9,9	12,7	12,7
50-60Hz, $\cos\varphi = 1$	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
Rated operational current $I_e (=I_{th})$	415V	A	6	25	25	32	32
Rated operational power	220V	kW	-	9,5	9,5	12,2	12,2
of three-phase resistive loads	230V	kW	-	9,9	9,9	12,7	12,7
50-60Hz, $\cos\varphi = 1$	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
Minimum cross-section of conductor	at load with $I_e (=I_{th})$	mm ²	2 x 1,5 ²	2 x 1,5 ²	2 x 1,5 ²	2 x 2,5 ²	2 x 2,5 ²
Utilization category AC2 and AC3							
Switching of three-phase motors							
Rated operational current I_e	220V	A	-	12	15	18	22
open and enclosed	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	220-230V	kW	-	3	4	5	6
of three-phase motors	240V	kW	-	3	4	5	7
50-60Hz	380-400V	kW	-	4	5,5	7,5	11
	415V	kW	-	4,5	6	8,5	12
Auxilliary 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	10	10	10	10	10
	60°C	A	6	6	6	6	6
Utilization category AC15							
Rated operational current I_e	220-240V	A	3	3	3	3	3
	380-415V	A	2	2	2	2	2
Utilization categoryDC13							
Rated operational current I_e	60V	A	3,5	3,5	3,5	3,5	3,5
	110V	A	0,5	0,5	0,5	0,5	0,5
	220V	A	0,1	0,1	0,1	0,1	0,1
Short circuit protection	gL (gG)	A	20	20	20	20	20

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 **K3-07NDR** **K3-10NDR** **K3-14NDR** **K3-18NDR** **K3-22NDR**

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 thermal overload relay

Coordination-Type „1“ acc. to IEC 947-4-1,
Contact welding without
hazard of persons

max. fuse size	gL (gG)	A	20	63	63	63	63
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Coordination-Type “2” acc. to IEC 947-4-1,
light Contact welding accepted

max. fuse size	gL (gG)	A		25	35	35	35
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Contact welding not accepted

max. fuse size	gL (gG)	A		16	16	16	16
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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 _b		1/h		600	600	600	600
AC4, I _b		1/h		120	120	120	120
DC3, I _b		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
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Power loss per pole	at I _b /AC3 400V	W		0,21	0,35	0,5	0,75
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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_b/AC1 acc. to I_b/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	K3-10NDR	K3-14NDR	K3-18NDR	K3-22NDR
Bemessungsbetriebsstrom „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

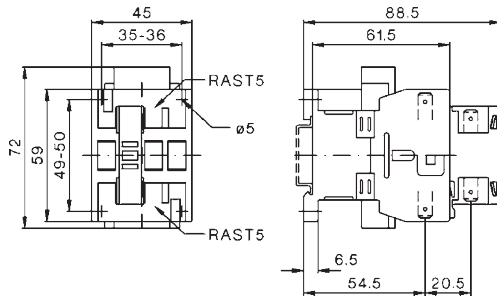
Auxilliary Contacts		Type	HN10R	HN01R
Rated insulation voltage U_i		V~	415	415
Thermal rated current I_{th} up to 415V				
Ambient temperature	max. 40°C	A	10	10
	max. 60°C	A	6	6
Frequency of operations z		1/h	3000	3000
Mechanical life		S x 10 ⁶	10	10
Power loss per pole at $I_g/AC1$		W	0,5	0,5
Utilization category AC15				
Rated operational betriebsstrom I_g	220-240V	A	3	3
	380-415V	A	2	2
Utilization category DC13				
Bemessungs-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	20

Data acc. to UL508

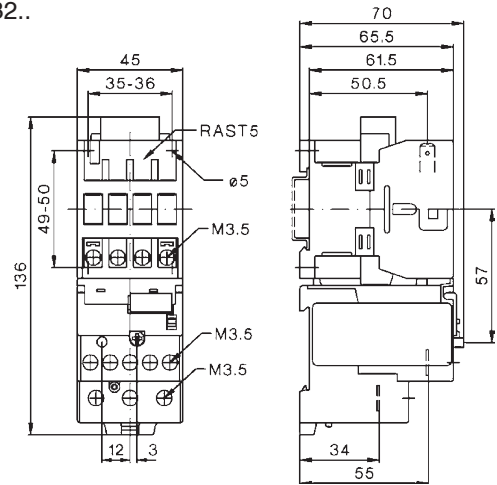
Rated operational current „General Use“		A	10	10
Rated operational voltage	max.	V~	300	300
Auxiliary Contacts			A300	A300

Dimensions

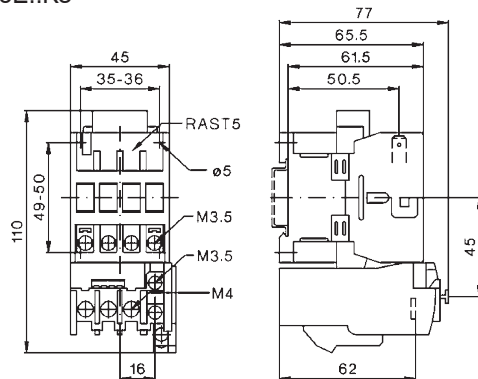
K3-..NDR.. +HN..R



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



K3-..NDR.....PZ + U12/16E..K3



Technical data are subject to change without notice