

Monitoring relays - cross references chart of functions, ranges, hysteresis, outputs

T1 - delay when supply is connected				1	voltage relay AC	in case of error 0 - 10 s	Umax160-276V,Umin30-99%Umax	measured voltage	1x16A	2-6%													
T2 - delay when monitored level is exceeded				1	voltage relay DC	in case of error 0 - 10 s	Umax 6-30V,Umin30-99%Umax	measured voltage	1x16A	2-6%													
compatible <input type="radio"/>				1	voltage relay, 3 ranges AC/DC	in case of error 0 - 10 s	12,5 - 50V; 40 - 160V; 125 - 500V	230V AC, 24V AC/DC	2x16A	5/10%													
100% replaced <input checked="" type="radio"/>				3	sequence and failure phases,asymmetr	in case of error 0 - 10 s	Lower level: 30-99% Umax	400/230V AC, 24V AC/DC	2x16A	5/10%	5-20%												
Updated: 15.06.2005				3 <td>sequence and failure phases</td> <td>T1 max.300ms, T2 0,5-10s</td> <td>Umin 130V AC</td> <td>3x230V + neutral</td> <td>1x16A</td> <td>5%</td> <td></td>	sequence and failure phases	T1 max.300ms, T2 0,5-10s	Umin 130V AC	3x230V + neutral	1x16A	5%													
				3 <td>voltage relay AC</td> <td>T1 20ms, T2 0,5 - 10s</td> <td>160 - 276V AC, 3x400V</td> <td>3x230V + neutral</td> <td>1x16A</td> <td>5%</td> <td></td>	voltage relay AC	T1 20ms, T2 0,5 - 10s	160 - 276V AC, 3x400V	3x230V + neutral	1x16A	5%													
				3 <td>relay to monitor power factor, cosφ</td> <td>in case of error 0 - 10 s</td> <td>cos φ = 0,7-0,95</td> <td>230V AC, 24V AC/DC</td> <td>2x16A</td> <td></td> <td></td> <td></td>	relay to monitor power factor, cosφ	in case of error 0 - 10 s	cos φ = 0,7-0,95	230V AC, 24V AC/DC	2x16A														
				3 <td>digit.voltage relay AC, 3phases U,I,cosφ</td> <td>T1 0- 60s; T2 0-10s</td> <td>AC 280-480V</td> <td>230/400V AC; 24V AC/DC</td> <td>2x16A</td> <td>1-10%</td> <td>5-15%</td> <td></td>	digit.voltage relay AC, 3phases U,I,cosφ	T1 0- 60s; T2 0-10s	AC 280-480V	230/400V AC; 24V AC/DC	2x16A	1-10%	5-15%												
				1 <td>current relay AC - shunt</td> <td>in case of error 0 - 10 s</td> <td>I_{max} 1-16A AC</td> <td>AC 24-230V, DC 24V</td> <td>1x16A</td> <td>0,6-1,2%</td> <td></td> <td></td>	current relay AC - shunt	in case of error 0 - 10 s	I _{max} 1-16A AC	AC 24-230V, DC 24V	1x16A	0,6-1,2%													
				1 <td>current relay AC -internal transformer</td> <td>in case of error 0 - 10 s</td> <td>I_{max} 1-20A AC</td> <td>AC 24-230V ,DC 24V</td> <td>1x16A</td> <td></td> <td></td> <td></td>	current relay AC -internal transformer	in case of error 0 - 10 s	I _{max} 1-20A AC	AC 24-230V ,DC 24V	1x16A														
				1 <td>current relay AC/DC, 3 ranges</td> <td>in case of error 0 - 10 s</td> <td>0-1,6A; 0-5A; 0-16A</td> <td>230V AC, 24V AC/DC</td> <td>2x8A</td> <td>1-10%</td> <td></td> <td></td>	current relay AC/DC, 3 ranges	in case of error 0 - 10 s	0-1,6A; 0-5A; 0-16A	230V AC, 24V AC/DC	2x8A	1-10%													
				1 <td>thermistor relay</td> <td>Reset, remote reset, memory</td> <td>min 50ohm, 1,8kohm - 3,3 kohm</td> <td>AC/DC 24V, AC 230V</td> <td>2x16A</td> <td></td> <td></td> <td></td>	thermistor relay	Reset, remote reset, memory	min 50ohm, 1,8kohm - 3,3 kohm	AC/DC 24V, AC 230V	2x16A														
		Producer	Type	HRN-33 / 35	HRN-34	HRN-41/42, 41 fce "HYSTERZE", 42 fce "OKNK"	HRN-43,43N, 43N: 160-276V, 43: 280-480V	HRN-51 /51N	HRN-52 /54	COS-1	HDUI-3	PRI-31	PRI-32	PRI-41/42	TER-7	Phase	Description	Time delay	Controlled range	Supply voltage	Output	Hyst.	Asym.
		ABB (Entelec-Schiele)	CM SRS													1	current relay, 3 sl. ranges		0,003..1A	3versions 24-240V AC/DC	1x4A	5-30%	
CM SRN														1	current relay, 6 sl. ranges	T2 0,05 - 30s	0,003..15A	3versions 24-240V AC/DC	2x5A	5-30%			
CM ESS														1	voltage relay, 8 sl. ranges		0,05..500V	3versions 24-240V AC/DC	1x4A	5-30%			
CM ESN														1	voltage relay, 8 sl. ranges	T2 0,05 - 30s	0,05..500V	3versions 24-240V AC/DC	2x5A	5-30%			
CM EFN														1	voltage relay, 2 sl. ranges	0,1..10s	80..160V, 80..300V AC	80..120V, 220..300V AC	2x5A	5%			
CM PBE														3	failure phase	0,5s	220..240V AC, 380..440V AC	from monitored	1breaking.4A				
CM PVE														3	failure phase,over/undervoltage	0,5s	220..240V AC, 380..440V AC	from monitored	1breaking.4A				
CM PFE														3	sequence and failure phase	0,5s	208..440V AC	from monitored	1x4A				
CM PFS														3	sequence and failure phase	0,5s	200..500V AC	from monitored	2x4A				
CM PFN														3	sequence,failure phase,over/undervol	0,1..10s	380..415V	110..130, 240, 380..415V AC	2x5A				
CM PVN														3	sequence,failure phase,over/undervol	0,1..10s	160..500V / 7types	90..500V / 7types	2x5A				
CM ASS														3	sequence and failure phase,asymme	0,5s	220..415V / 4 types	from monitored	1x4A		5-15%		
CM ASN														3	sequence and failure phase,asymme	0,1..10s	220..600V / 10types	110..600V	2x5A		5-15%		
CM MPS														3	sequence,failure phase,asym.,over/u	0,1..10s	160..300V, 300..500V AC	from monitored	2x4A		2-15%		
CM MSE														1	thermistor relay			24, 110..130, 220..240V AC	1breaking.4A				
CM MSS													1	thermistor relay			24..240V AC/DC	according to type					
CM MSN													1	thermistor relay			24..240V AC/DC	1xclosing,1xbreaking					
BTR	TMR-E12													1	thermistor relay	0,1s	1,8 / 2,8 / 3,0 kohm	24V AC, 230V AC	2x6A				
	CPW-E12													3	power factor monitoring	1..100s	0,2..10A , cos φ=0..0,97	230V AC	1x4A				
	PFD-E12													3	sequence and failure phase			400V AC	2x6A				
	ASD-E20													3	sequence,failure phase,asym.,over/u	0,5s	0,8..1,05 Un	400V AC	1closing/1brea	2%	10%		
	EUW-E20													1	overvoltage/undervoltage	0,1s	1..300V	230V AC, 24V AC/DC	2x6A		10%		
EUW-E20													1	current relay	0,1s	0,01..15A / 5range	230V AC, 24V AC/DC	2x6A		10%			
HAGER	ED 183													1	current (prior) relay	0,2s	6,7 .. 39A	400V AC	1xbreaking 1A				
	EU 100													1	overvoltage/undervoltage	0,2s	0,75 .. 1,2 Un	230V AC	1x8A				
	EU 101													1	overvoltage/undervoltage	0,2s	nastavitelné +/- 5..20% Un	230V AC	1x8A				
	EU 102													1	overvoltage/undervoltage	0,1..12s	DC 15-700V, AC 15..480V	230V AC	1x8A				
	EU 103													1	current relay	0,1..12s	0,1..10A	230V AC	1x8A				
	EU 300													3	overvoltage/undervoltage,asymmetry	0,2s	Umin 0,7 Un, Asy -5..-20%	3x230V AC	1x8A				
	EU 301													3	overvoltage/undervoltage	0,1..12s	adjustable +/- 5..20% Un	3x230V AC	1x8A				
EU 302													3	overvoltage/undervoltage	0,1..12s	adjustable +/- 5..20% Un	3x230V AC	1x8A					

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T2 - delay when monitored level is exceeded				1	voltage relay DC	in case of error 0 - 10 s	Umax 6-30V,Umin30-99%Umax	measured voltage	1x16A	2-6%													
compatible <input type="radio"/>				1	voltage relay, 3 ranges AC/DC	in case of error 0 - 10 s	12,5 - 50V; 40 - 160V; 125 - 500V	230V AC, 24V AC/DC	2x16A	5/10%													
100% replaced <input checked="" type="radio"/>				3	sequence and failure phases, asymmet	in case of error 0 - 10 s	Lower level: 30-99% Umax	400/230V AC, 24V AC/DC	2x16A	5/10%	5-20%												
Updated: 15.06.2005				3 <td>sequence and failure phases</td> <td>T1 max.300ms, T2 0,5-10s</td> <td>Umin 130V AC</td> <td>3x230V + neutral</td> <td>1x16A</td> <td>5%</td> <td></td>	sequence and failure phases	T1 max.300ms, T2 0,5-10s	Umin 130V AC	3x230V + neutral	1x16A	5%													
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				3 <td>power factor monitoring, cos φ</td> <td>in case of error 0 - 10 s</td> <td>0,1 - 0,99 cos φ</td> <td></td> <td>230V AC, 24V AC/DC</td> <td>2x16A</td> <td></td> <td></td>	power factor monitoring, cos φ	in case of error 0 - 10 s	0,1 - 0,99 cos φ		230V AC, 24V AC/DC	2x16A													
				3 <td>digit.voltage relay AC, 3phases U,I,cosφ</td> <td>T1 0- 60s; T2 0-10s</td> <td>AC 280-480V</td> <td></td> <td>230/400V AC; 24V AC/DC</td> <td>2x16A</td> <td>1-10%</td> <td>5-15%</td>	digit.voltage relay AC, 3phases U,I,cosφ	T1 0- 60s; T2 0-10s	AC 280-480V		230/400V AC; 24V AC/DC	2x16A	1-10%	5-15%											
				1 <td>current relay AC - shunt</td> <td>in case of error 0 - 10 s</td> <td>I_{max} 1-16A AC</td> <td></td> <td>AC 24-230V, DC 24V</td> <td>1x16A</td> <td>0,6-1,2%</td> <td></td>	current relay AC - shunt	in case of error 0 - 10 s	I _{max} 1-16A AC		AC 24-230V, DC 24V	1x16A	0,6-1,2%												
				1 <td>current relay AC - internal transformer</td> <td>in case of error 0 - 10 s</td> <td>I_{max} 1-20A AC</td> <td></td> <td>AC 24-230V ,DC 24V</td> <td>1x16A</td> <td></td> <td></td>	current relay AC - internal transformer	in case of error 0 - 10 s	I _{max} 1-20A AC		AC 24-230V ,DC 24V	1x16A													
				1 <td>current relay AC/DC, 3 ranges</td> <td>in case of error 0 - 10 s</td> <td>0-1,6A; 0-5A; 0-16A</td> <td></td> <td>230V AC, 24V AC/DC</td> <td>2x8A</td> <td>1-10%</td> <td></td>	current relay AC/DC, 3 ranges	in case of error 0 - 10 s	0-1,6A; 0-5A; 0-16A		230V AC, 24V AC/DC	2x8A	1-10%												
				1 <td>thermistor relay</td> <td>Reset, remote reset, memory</td> <td>min 50ohm, 1,8kohm - 3,3 kohm</td> <td></td> <td>AC/DC 24V, AC 230V</td> <td>2x16A</td> <td></td> <td></td>	thermistor relay	Reset, remote reset, memory	min 50ohm, 1,8kohm - 3,3 kohm		AC/DC 24V, AC 230V	2x16A													
		Producer	Type	HRN-33 / 35	HRN-34	HRN-41/42, 41 fce "HYSTERZE", 42 fce "OKNC"	HRN-43,43N, 43N, 160-276V, 43: 280-480V	HRN-51 /51N	HRN-52 /54	COS-1	HDUI-3	PRI-31	PRI-32	PRI-41/42	TER-7	Phase	Description	Time delay	Controlled range	Supply voltage	Output	Hyst.	Asym.
		CARLO GAVAZZI	DIB 71C B235A														1	current relay		0,1..5A /AC	115/230V AC	1x5A	
DIB 01C 7245A															1	current relay		0,1..5A AC/DC	24V DC	1x8A			
DIB 01C 72410A															1	current relay		1..10A AC/DC	24V DC	1x8A			
DIB 01C B235A															1	current relay		0,1..5A AC/DC	115/230V AC	1x8A			
DIB 01C B2310A															1	current relay		1..10A AC/DC	115/230V AC	1x8A			
DUC01D724500V															1	voltage relay		2..500V AC/DC	24V DC	2x8A			
DUC01DB23500V															1	voltage relay		2..500V AC/DC	115/230V AC	2x8A			
DUA01D724500V															1	voltage relay		2..500V AC/DC	24V DC	1x8A			
DUA01DB23500V															1	voltage relay		2..500V AC/DC	115/230V AC	1x8A			
DUA 52 C724															1	voltage relay		8 - 28 V DC	12...24 V DC	1x5A	5-50%		
DUA 52 C748															1	voltage relay		38 - 58 V DC	48 V DC	1x5A	5-50%		
DUB03C W24															1	voltage relay		24..264V AC/DC	12..240V AC/DC	1x8A			
DUB01C 724															1	voltage relay		2..500V AC/DC	24V DC	1x8A			
DUB01C B23															1	voltage relay		2..500V AC/DC	115/230V AC	1x8A			
DUB71C B23															1	voltage relay		2..500V AC/DC	115/230V AC	1x8A			
DIC 01C 724															1	voltage relay		24..264V AC/DC	12..240V AC/DC	1x8A			
DIC 01C B23															1	voltage relay		2..500V AC/DC	24V DC	1x8A			
DPB 71C M23															3	voltage relay		177..275V AC	208..240V AC	1x8A			
DUB 71C M48															3	voltage relay		323..550V AC	380..480V AC	1x8A			
DPA 01C M44															3	sequence and failure phases		208..480V AC	208..480V AC	1x8A			
DPA 01D M23															3	sequence and failure phases		208..240V AC	208..240V AC	1x8A			
DPA 01D M48															3	sequence and failure phases		380..480V AC	380..480V AC	1x8A			
DPA 02C M23															3	sequence and failure phases		177..275V AC	208..240V AC	1x8A			
DPA 02C M40															3	sequence and failure phases		323..475V AC	380..415V AC	1x8A			
DPA 51C M44															3	sequence and failure phases		177..550V AC	208..480V AC	1x8A			
DPA 53C M23															3	sequence and failure phases		160..240V, 320..480V AC	160..240V, 320..480V AC	1x8A			
H 471 156															3	sequence and failure phases, asymmetry		220V, 400V AV	220V, 400V AV	1x8A			
DWA 01C															3	power factor monitoring		0,1 - 0,99 cos φ	208..240V, 380..480V AC	1x8A			
DWB 01C															3	power factor monitoring		0,1 - 0,99 cos φ	208..240V, 380..480V AC	1x8A			
DTA 01C															1	thermistor relay		1500 ohm / 3100 ohm	24V, 230V AC	1x8A			
DTA 02C														1	thermistor relay		1500 ohm / 3100 ohm	24V, 230V AC	1x8A				

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T1 - delay when supply is connected												1	voltage relay AC	in case of error 0 - 10 s	Umax160-276V,Umin30-99%Umax	measured voltage	1x16A	2-6%				
T2 - delay when monitored level is exceeded												1	voltage relay DC	in case of error 0 - 10 s	Umax 6-30V,Umin30-99%Umax	measured voltage	1x16A	2-6%				
compatible <input type="radio"/>												1	voltage relay, 3 ranges AC/DC	in case of error 0 - 10 s	12.5 - 50V; 40 - 160V; 125 - 500V	230V AC, 24V AC/DC	2x16A	5/10%				
100% replaced <input checked="" type="radio"/>												3	sequence and failure phases, asymmet	in case of error 0 - 10 s	Lower level: 30-99% Umax	400/230V AC, 24V AC/DC	2x16A	5/10%	5-20%			
Updated: 15.06.2005												3	sequence and failure phases	T1 max.300ms, T2 0,5-10s	Umin 130V AC	3x230V + neutral	1x16A	5%				
												3	voltage relay AC	T1 20ms, T2 0,5 - 10s	160 - 276V AC, 3x400V	3x230V + neutral	1x16A	5%				
												3	power factor monitoring, 0,05 V	in case of error 0 - 10 s	0,05 V - 0,1 V	230V AC, 24V AC/DC	2x16A					
												3	digit.voltage relay AC, 3phases U,I,cosφ	T1 0- 60s; T2 0-10s	AC 280-480V	230/400V AC; 24V AC/DC	2x16A	1-10%	5-15%			
												1	current relay AC - shunt	in case of error 0 - 10 s	Imax 1-16A AC	AC 24-230V, DC 24V	1x16A	0,6-1,2%				
												1	current relay AC - internal transformer	in case of error 0 - 10 s	Imax 1-20A AC	AC 24-230V,DC 24V	1x16A					
												1	current relay AC/DC, 3 ranges	in case of error 0 - 10 s	0-1,6A; 0-5A; 0-16A	230V AC, 24V AC/DC	2x8A	1-10%				
												1	thermistor relay	Reset, remote reset, memory	min 50ohm, 1,8kohm - 3,3 kohm	AC/DC 24V, AC 230V	2x16A					
Producer	Type	HRN-33 / 35	HRN-34	HRN-41/42, 41 fce "HYSTERZE", 42 fce "OKNK"	HRN-43,43N, 43N: 160-276V, 43: 280-480V	HRN-51 /51N	HRN-52 /54	COS-1	HDUI-3	PRI-31	PRI-32	PRI-41/42	TER-7	Phase	Description	Time delay	Controlled range	Supply voltage	Output	Hyst.	Asym.	
ATC	SLU 100 ASD														1	failure phase,over/undervoltage	0,1..25s	200..250,330..430V AC	208,220,240,346,380,415V AC	1x10A	10%	
COMAT	MV52														1	undervoltage relay	in case of error 0,1/0,5/1s	Un -30%	230 V /AC	6A	5%	
	MV62														1	undervoltage relay	in case of error 0,1/0,5/1s	Un -30%	120 V /AC	6A	5%	
	MV53														1	overvoltage/undervoltage	25ms..2,5s	Un -35% /Un+17,5%	230 V /AC	6A		
	EOCR-AR														1	current.transf.	0,3..30s	0,5-6A/ 2,5-30A /5-60A -acc.type	115a230V /AC, 24V AC/DC	3A		
	EUCR-BR														1	current.transf.	0,3..30s	0,5-6A/ 2,5-30A /5-60A -acc.type	115a230V /AC, 24V AC/DC	3A		
	ECR-3D														3	current.transf.	0,3..30s	0,5-6,5A/ 5-75A -acc.type	110-240V /AC, 24V AC/DC	3A		
	TSR-19														1	thermistor relay	200ms	20 ohm / 1,8kohm, max 2,2kohm	AC 230V /AC, DC 24-48V	5A		
	SSU33L														3	voltage, plug-in	0,2..5s	160-275V /280-480V AC	230V/400V /AC	6A		
	SSU34														3	voltage, plug-in	0,2..5s	160-275V/280-480V /AC	230/400V a 290/500V AC	6A		
	SSU36														3	voltage, plug-in	0,2..5s	85-145V/148-250V /AC	120/208V a 265/460V AC	6A		
	SSU31														3	voltage, sequence and failure		400V /AC	400V /AC	6A		
	CT524														1	voltage, plug-in	in case of error 0,1/0,5/2s	0..30V	24V /DC	3x6A		
	CT512														1	current, plug-in	in case of error 0,1/0,5/2s	0..200 mA	24V /DC	3x6A		
CT515														1	current, plug-in	in case of error 0,1/0,5/2s	0..2A	24V /DC	3x6A			
CT516														1	current, plug-in	in case of error 0,1/0,5/2s	0..6A	24V /DC	3x6A			
GROUZET	MCI													1	current relay		1 - 20A	110-230V AC	1x5A	15%		
	EIL													1	current relay ACDC	T1 1 - 20s; T2 0,1 - 3s	2 - 500mA	24AC/DC, 230AC	1x8A	5-50%		
	EIH													1	current relay ACDC	T1 1 - 20s; T2 0,1 - 3s	0,1 - 10A	24AC/DC, 230AC	1x8A	5-50%		
	EIT													1	current relay ACDC	T1 1 - 20s; T2 0,1 - 3s	10 - 100A	24AC/DC, 230AC	1x8A	5-50%		
	F3US													3	voltage relay,among phases	in case of error 0,1 - 10s	230 V AC	230-400V AC	2x8A	3%		
	HDU-L													1	digital voltage relay	0,1 - 3s in case of error	0,2 - 60 V	24,120,230V AC; 24V DC	1x5A			
	HDU-H													1	digital voltage relay	0,1 - 3s in case of error	15 - 600 V	24,120,230V AC; 24V DC	1x5A			
	HDI-L													1	digital current relay	0,1 - 3s in case of error	2 - 500mA	24,120,230V AC; 24V DC	1x5A			
	HDI-H													1	digital current relay	0,1 - 3s in case of error	0,1 - 10A	24,120,230V AC; 24V DC	1x5A			
	EUL													1	voltage relay	0,1 - 3s in case of error	0,2 - 60 V	24,120,230V AC; 24V DC	1x8A	5-50%		
EUH													1	voltage relay	0,1 - 3s in case of error	15 - 600 V	24,120,230V AC; 24V DC	1x8A	5-50%			

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T2 - delay when monitored level is exceeded		OKNG										1	voltage relay DC	in case of error 0 - 10 s	Umax 6-30V, Umin30-99%Umax	measured voltage	1x16A	2-6%			
compatible		HRN-33 / 35										1	voltage relay AC, 3 ranges AC/DC	in case of error 0 - 10 s	12,5 - 50V; 40 - 160V; 125 - 500V	230V AC, 24V AC/DC	2x16A	5/10%			
100% replaced		HRN-34										3	sequence and failure phases, asymmet	in case of error 0 - 10 s	Lower level: 30-99% Umax	400/230V AC, 24V AC/DC	2x16A	5/10%	5-20%		
		HRN-41/42, 41 fce "HYSTERZE", 42 fce "OKNG"										3	sequence and failure phases	T1 max.300ms, T2 0,5-10s	Umin 130V AC	3x230V + neutral	1x16A	5%			
		HRN-43,43N, 43N: 160-276V, 43: 280-480V										3	voltage relay AC	T1 20ms, T2 0,5 - 10s	160 - 276V AC, 3x400V	3x230V + neutral	1x16A	5%			
		HRN-51 / 51N										3	power factor monitoring, cos φ	in case of error 0 - 10 s	cos φ = 0,1 - 0,99	230V AC, 24V AC/DC	2x16A				
		HRN-52 / 54										3	digit.voltage relay AC, 3phases U,I,cosφ	T1 0- 60s; T2 0-10s	AC 280-480V	230/400V AC; 24V AC/DC	2x16A	1-10%	5-15%		
		COS-1										1	current relay AC - shunt	in case of error 0 - 10 s	Imax 1-16A AC	AC 24-230V, DC 24V	1x16A	0,6-1,2%			
		HDUI-3										1	current relay AC - internal transformer	in case of error 0 - 10 s	Imax 1-20A AC	AC 24-230V, DC 24V	1x16A				
		PRI-31										1	current relay AC/DC, 3 ranges	in case of error 0 - 10 s	0-1,6A; 0-5A; 0-16A	230V AC, 24V AC/DC	2x8A	1-10%			
		PRI-32										1	thermistor relay	Reset, remote reset, memory	min 50ohm, 1,8kohm - 3,3 kohm	AC/DC 24V, AC 230V	2x16A				
		PRI-41/42										Phase	Description	Time delay	Controlled range	Supply voltage	Output	Hyst.	Asym.		
		TER-7										3	voltage relay	po výskytu chyby 0,2 - 10s	Umax350-520V,Umin280-480V	AC3(N) 400/230V	2x5A		5-20%		
Producer	Type	HRN-33 / 35	HRN-34	HRN-41/42, 41 fce "HYSTERZE", 42 fce "OKNG"	HRN-43,43N, 43N: 160-276V, 43: 280-480V	HRN-51 / 51N	HRN-52 / 54	COS-1	HDUI-3	PRI-31	PRI-32	PRI-41/42	TER-7	Phase	Description	Time delay	Controlled range	Supply voltage	Output	Hyst.	Asym.
EBERLE	IMU-3													3	voltage relay	po výskytu chyby 0,2 - 10s	Umax350-520V,Umin280-480V	AC3(N) 400/230V	2x5A		5-20%
	IMU-1													1	voltage relay		4 circuits.0,1-600V	230 V AC	1x5A		
	IMI-1													1	current relay		10-100mA, 0,1-1A, 1-10A	230 V AC	1x5A		
	IUU-3													3	undervoltage relay		280 - 520 V AC	AC3(N) 400/230V	2x5A	5%	
EUROSENSOR	IM1													1	current relay		5 ranges.0,01 - 10 A	24,110,230 V AC	1x8A		
	IM2													1	current relay		6 ranges.0,01 - 15 A	24,110,230 V AC	2x8A		
	UM1													1	voltage relay		7 ranges.0,05 - 300 V	24,110,230 V AC	1x8A		
	UM2													1	voltage relay		7 ranges.0,05 - 300 V	24,110,230 V AC	2x8A		
	3UM1													3	voltage relay		3 x 150 - 250 V	230,400 V AC	1x8A		
FANAL	SR-DW												3	voltage relay		220 - 400V AC	230V AC	1xchangeover		5-15%	
F a F	CZF-B													3	failure phases,asym.	3..5s	3x400V AC	from monitored	1xswitch.10A		
	CZF-BS													3	failure phases,asym.	3..5s	3x400V AC	from monitored	1x10A		
	CZF-BR													3	failure phases,asym.	3..5s	3x400V AC	from monitored	1x10A		
	CZF-310													3	failure phases,asym.	3..5s	3x400V AC	from monitored	1x10A		
	CZF-311													3	failure phases,asym.	3..5s	3x400V AC	from monitored	1x10A		
	CZF-312													3	failure phases,asym.	0,3s	3x400V AC	from monitored	1closing/1breaking.5A		
	CZF-331													3	failure phases,asym.	3..5s	3x400V AC	from monitored	2x8A		
	CZF-333													3	failure phases,asym.	3..5s	3x400V AC	from monitored	1x10A		
	CKF-B													3	sequence,failure phases,asym.	3..5s	3x400V AC	from monitored	1xclosing.10A		
	CZF-BR													3	sequence,failure phases,asym.	3..5s	3x400V AC	from monitored	1x10A		
	CZF-316													3	sequence,failure phases,asym.	3..5s	3x400V AC	from monitored	1x10A		
	CZF-317													3	sequence,failure phases,asym.	3..5s	3x400V AC	from monitored	1x10A		
	CZF-337													3	sequence,failure phases,asym.	3..5s	3x400V AC	from monitored	1x10A		
	CP-710													1	overvoltage/undervoltage		170..260V AC	230V AC	1x10A		
	CP-730													3	overvoltage/undervoltage		170..260V AC	3x400V AC	1x10A		
	PR-612													1	current relay	0,1s	2..15A	230V AC	1x16A		
	PR-613													1	current relay	0,1s	2..15A	230V AC	1x16A		
	PR-614													1	current relay	0,1s	2..15A	230V AC	1x16A		

Monitoring relays - cross references chart of functions, ranges, hysteresis, outputs

T1 - delay when supply is connected		OKNG										1	voltage relay AC	in case of error 0 - 10 s	Umax160-276V,Umin30-99%Umax	measured voltage	1x16A	2-6%	
T2 - delay when monitored level is exceeded		HRN-33 / 35										1	voltage relay DC	in case of error 0 - 10 s	Umax 6-30V, Umin30-99%Umax	measured voltage	1x16A	2-6%	
		HRN-34										3	sequence and failure phases, asymmet	in case of error 0 - 10 s	Lower level: 30-99% Umax	400/230V AC, 24V AC/DC	2x16A	5/10%	5-20%

exceeded												3	sequence and failure phases	T1 max.300ms, T2 0,5-10s	Umin 130V AC	3x230V + neutral	1x16A	5%			
compatible <input type="radio"/>												3	voltage relay AC	T1 20ms, T2 0,5 - 10s	160 - 276V AC, 3x400V	3x230V + neutral	1x16A	5%			
100% replaced <input checked="" type="radio"/>												3	power factor monitoring, cos φ	in case of error 0 - 10 s	cos φ = 0,1 - 0,99	230V AC, 24V AC/DC	2x16A				
Updated: 15.06.2005												3	digit.voltage relay AC, 3phases U,I,cosφ	T1 0- 60s; T2 0-10s	AC 280-480V	230/400V AC; 24V AC/DC	2x16A	1-10%	5-15%		
												1	current relay AC - shunt	in case of error 0 - 10 s	I _{max} 1-16A AC	AC 24-230V, DC 24V	1x16A	0,6-1,2%			
												1	current relay AC - internal transformer	in case of error 0 - 10 s	I _{max} 1-20A AC	AC 24-230V, DC 24V	1x16A				
												1	current relay AC/DC, 3 ranges	in case of error 0 - 10 s	0-1,6A; 0-5A; 0-16A	230V AC, 24V AC/DC	2x8A	1-10%			
												1	thermistor relay	Reset, remote reset, memory	min 50ohm, 1,8kohm - 3,3 kohm	AC/DC 24V, AC 230V	2x16A				
Producer	Type	HRN-33 / 35	HRN-34	HRN-41/42, 41 fce "HYSTERZE", 42 fce	HRN-43 43N, 43N: 160-276V, 43: 280-48	HRN-51 /51N	HRN-52 /54	COS-1	HDUI-3	PRI-31	PRI-32	PRI-41/42	TER-7	Phase	Description	Time delay	Controlled range	Supply voltage	Output	Hyst.	Asym.
FINDER	71.11.8.230.0010													1	overvoltage/undervoltage	5 nebo 10min /0,5s	0,75 .. 1,2 Un /AC	AC 230 V	1x10A		
	71.11.8.230.1010													1	overvoltage/undervoltage	5 nebo 10min /0,5s	/+/- 5 - 20% Un /AC	AC 230 V	1x10A		
	71.31.8.400.1010													3	overvoltage/undervoltage	5 nebo 10min /0,5s	/+/- 5 - 20% Un /AC	AC 400 V	1x10A		
	71.31.8.400.1021													3	overvoltage/undervoltage	5 nebo 10min /0,5s	/-5..-20% Un, 1,15Un /AC	AC 400 V	1x10A		
	71.31.8.400.2000													3	sequence and failure phases, asymmet	0,5s	/-5..-20% Un, /AC	AC 400 V	1x10A		
	71.31.8.400.3020													3	sequence,failure phases,asym.,over/und	0,5s	/-5..-20% Un, /AC	AC 400 V	1x10A		
	71.41.8.230.1021													1	universal current, digital relay	0,1 .. 12s /0,5s	15...480V /AC , 15..700V/DC	AC 230 V	1x10A	5-50%	
	71.51.8.230.1021													1	universal voltage, digital relay	0,1 .. 12s /0,1 .. 20s	0,1...10A	AC 230 V	1x10A	5-50%	
	71.91.8.230.0300													1	thermistor relay	0s	1,3kohm, 3,0kohm	AC 230 V	1x10A		
71.92.8.230.0401													1	thermistor relay	0s	1,3kohm, 3,0kohm	AC 230 V	1x10A			
LOVATO	PMV 20													3	sequence and failure phase	0,1..20S	208..575V AC	z měřeného	1x8A		
	PMV 30													3	sequence and failure phase, asymmetry	0,1..20S	208..240V ,380..575V AC /2type	z měřeného	1x8A		
	PMV 40													3	sequence and failure phase, asymmetry	0,1..20S	208..240V ,380..575V AC /2type	z měřeného	1x8A		
	PMV 50													3	sequence,failure phase,over/undervolta	0,1..20S	208..240V ,380..575V AC /2type	z měřeného	1x8A		
	PMV 60													3	sequence,failure phase,asym.,undervol	0,1..20S	208..240V ,380..575V AC /2type	z měřeného	1x8A		
	PMV 70													3	sequence,failure phase,asym.,over/und	0,1..20S	208..240V ,380..575V AC /2type	z měřeného	1x8A		
	PMV 55													1	undercurrent/overcurrent	0,1..20S	208..240V , 380..440V AC /2type	z měřeného	1x8A		
MOELLER	Z-UR/400													3	undervoltage relay		0,85 Un (firmly set)	Un 230/400 V AC	1x5A		
	Z7-LAR/8-O													1	current "prior" relay		3 - 8A	400 V AC	1x breaking, 1A		
	Z7-LAR/16-O													1	current "prior" relay		10 - 16A	400 V AC	1x breaking, 1A		
	Z7-LAR/32-O													1	current "prior" relay		15 - 32A	400 V AC	1x breaking, 1A		
	Z7-LAR/8-S													1	current "prior" relay		3 - 8A	400 V AC	1xswitching1A		
	Z7-LAR/16-S													1	current "prior" relay		10 - 16A	400 V AC	1xswitching1A		
	Z7-LAR/32-S													1	current "prior" relay		15 - 32A	400 V AC	1xswitching1A		
	Z7-LAR/8-W													1	current "prior" relay		3 - 8A	400 V AC	1x1A		
POLLN	MKF-1P (K,R,M)													3	failure phase, asym.	3,5s	3x400 / 230 V	measured voltage	1x4A		
	MKF-12P													3	voltage,failure phase,asym.	3,5s	3x400 / 230 V	measured voltage	2x8A		
	MKF-12PK													3	voltage,failure,sequence phases,asym.	3,5s	3x400 / 230 V	measured voltage	2x8A		
	MKF- 2P													3	voltage,failure phase,asym.	3,5s	3x400 / 230 V	measured voltage	1x4A		
	KN-1S													1	over/undervoltage	0,5s	175V - 260V AC	measured voltage	1x16A	7V,5V	

Monitoring relays - cross references chart of functions, ranges, hysteresis, outputs

T1 - delay when supply is connected											1 <th>voltage relay AC</th> <th>in case of error 0 - 10 s</th> <th>U_{max}160-276V,U_{min}30-99%U_{max}</th> <th>measured voltage</th> <th>1x16A</th> <th>2-6%</th> <th></th>	voltage relay AC	in case of error 0 - 10 s	U _{max} 160-276V,U _{min} 30-99%U _{max}	measured voltage	1x16A	2-6%				
T2 - delay when monitored level is exceeded											1 <th>voltage relay DC</th> <th>in case of error 0 - 10 s</th> <th>U_{max} 6-30V,U_{min}30-99%U_{max}</th> <th>measured voltage</th> <th>1x16A</th> <th>2-6%</th> <th></th>	voltage relay DC	in case of error 0 - 10 s	U _{max} 6-30V,U _{min} 30-99%U _{max}	measured voltage	1x16A	2-6%				
											1 <th>voltage relay, 3 ranges AC/DC</th> <th>in case of error 0 - 10 s</th> <th>12,5 - 50V; 40 - 160V; 125 - 500V</th> <th>230V AC, 24V AC/DC</th> <th>2x16A</th> <th>5/10%</th> <th></th>	voltage relay, 3 ranges AC/DC	in case of error 0 - 10 s	12,5 - 50V; 40 - 160V; 125 - 500V	230V AC, 24V AC/DC	2x16A	5/10%				
											3 <th>sequence and failure phases, asymmet</th> <th>in case of error 0 - 10 s</th> <th>Lower level: 30-99% U_{max}</th> <th>400/230V AC, 24V AC/DC</th> <th>2x16A</th> <th>5/10%</th> <th>5-20%</th>	sequence and failure phases, asymmet	in case of error 0 - 10 s	Lower level: 30-99% U _{max}	400/230V AC, 24V AC/DC	2x16A	5/10%	5-20%			
														1	voltage relay AC	in case of error 0 - 10 s	U _{max} 160-276V,U _{min} 30-99%U _{max}	measured voltage	1x16A	2-6%	
														1	voltage relay DC	in case of error 0 - 10 s	U _{max} 6-30V,U _{min} 30-99%U _{max}	measured voltage	1x16A	2-6%	
														1	voltage relay, 3 ranges AC/DC	in case of error 0 - 10 s	12,5 - 50V; 40 - 160V; 125 - 500V	230V AC, 24V AC/DC	2x16A	5/10%	
														3	sequence and failure phases, asymmet	in case of error 0 - 10 s	Lower level: 30-99% U _{max}	400/230V AC, 24V AC/DC	2x16A	5/10%	5-20%

		exceeded		compatible		100% replaced		Updated: 15.06.2005														
Producer	Type	HRN-33 / 35	HRN-34	HRN-41/42, 41 fce "HYSTERZE", 42 fce	HRN-43,43N, 43N, 43N: 160-276V, 43: 280-48	HRN-51 / 51N	HRN-52 / 54	COS-1	HDUI-3	PRI-31	PRI-32	PRI-41/42	TER-7	Phase	Description	Time delay	Controlled range	Supply voltage	Output	Hyst.	Asym.	
PLZ	ZUZ														1	overvoltage/undervoltage	0s	Umin 75..100%, Umax 100..120%	AC 24, 110, 230 V, DC 24V	2x6A	2%	
	S1UM 827 230														1	failure phase, overvoltage/undervoltage	0.1-10s	Um=500V	AC 24V	1x6A	0.95x	value
	S1UM 827 240														1	failure phase, overvoltage/undervoltage	0.1-10s	Um=500V	AC 42-48V	1x6A	0.95x	value
	S1UM 827 250														1	failure phase, overvoltage/undervoltage	0.1-10s	Um=500V	AC 110-130V	1x6A	0.95x	value
	S1UM 827 260														1	failure phase, overvoltage/undervoltage	0.1-10s	Um=500V	AC 230-240V	1x6A	0.95x	value
	S1UM 827 225														1	failure phase, overvoltage/undervoltage	0.1-10s	Um=500V	DC 24V	1x6A	0.95x	value
	S1UM UP827 235														1	failure phase, overvoltage/undervoltage	0.1-10s	Um=500V	AC 24V	1x6A	0.95x	value
	S1UM UP827 245														1	failure phase, overvoltage/undervoltage	0.1-10s	Um=500V	AC 42-48V	1x6A	0.95x	value
	S1UM UP827 255														1	failure phase, overvoltage/undervoltage	0.1-10s	Um=500V	AC 110-130V	1x6A	0.95x	value
	S1UM UP827 265														1	failure phase, overvoltage/undervoltage	0.1-10s	Um=500V	AC 230-240V	1x6A	0.95x	value
	S3UM 837 260														3	failure phase, overvoltage/undervoltage	0.5-10s	Um=230V AC	DC 24V	1x6A	2%	
	S3UM 837 270														3	failure phase, overvoltage/undervoltage	0.5-10s	Um=400/440V AC	DC 24V	1x6A	2%	
	S3UM 837 280														3	failure phase, overvoltage/undervoltage	0.5-10s	Um=415/460V AC	DC 24V	1x6A	2%	
	S3UM 837 285														3	failure phase, overvoltage/undervoltage	0.5-10s	Um=440/480V AC	DC 24V	1x6A	2%	
	S3UM 837 395														3	failure phase, overvoltage/undervoltage	0.5-10s	Um=440/480V AC	AC 120V	1x6A	2%	
	S3UM 837 360														3	failure phase, overvoltage/undervoltage	0.5-10s	Um=230V AC	AC 230V	1x6A	2%	
	S3UM 837 370														3	failure phase, overvoltage/undervoltage	0.5-10s	Um=400/440V AC	AC 230V	1x6A	2%	
	S3UM 837 380														3	failure phase, overvoltage/undervoltage	0.5-10s	Um=415/460V AC	AC 230V	1x6A	2%	
	S1MS 839 775														3	thermistor relay	0.5s	3,6kohm , 1,8kohm	AC/DC 24V	2x6A		
	S1MS 839 760														3	thermistor relay	0.5s	3,6kohm , 1,8kohm	AC 230V	2x6A		
	S1MS 839 765														3	thermistor relay	0.5s	3,6kohm , 1,8kohm	AC 240V	2x6A		
	S1MN 839 400														3	thermistor relay	0.5s	3,6kohm , 1,8kohm	AC/DC 24V	2x6A		
	S1MN 839 415														3	thermistor relay	0.5s	3,6kohm , 1,8kohm	AC 230V	2x6A		
	S1MN 839 420														3	thermistor relay	0.5s	3,6kohm , 1,8kohm	AC 240V	2x6A		
	S1MO 839 600														3	thermistor relay	0.5s	3,6kohm , 1,8kohm	AC/DC 24V	2x6A		
	S1MO 839 650														3	thermistor relay	0.5s	3,6kohm , 1,8kohm	AC 230V	2x6A		
	S1MO 839 655														3	thermistor relay	0.5s	3,6kohm , 1,8kohm	AC 240V	2x6A		
	S1PN 890 200														3	sequence and failure phase	0.5-10s	Um=200..240V AC	AC 240V	2x6A	2%	
	S1IM 828 050														1	current relay	0.1-10s	2A version (2, 1, 0.4, 0.2A), 15A	AC 230-240V	1x6A	0.95x	value

Monitoring relays - cross references chart of functions, ranges, hysteresis, outputs

T1 - delay when supply is connected										
T2 - delay when monitored level is exceeded										
compatible										
	42 fce "OKNC" 280-480V	1	voltage relay AC	in case of error 0 - 10 s	Umax160-276V,Umin30-99%Umax	measured voltage	1x16A	2-6%		
		1	voltage relay DC	in case of error 0 - 10 s	Umax 6-30V,Umin30-99%Umax	measured voltage	1x16A	2-6%		
		1	voltage relay, 3 ranges AC/DC	in case of error 0 - 10 s	12,5 - 50V; 40 - 160V; 125 - 500V	230V AC, 24V AC/DC	2x16A	5/10%		
		3	sequence and failure phases, asymmet	in case of error 0 - 10 s	Lower level: 30-99% Umax	400/230V AC, 24V AC/DC	2x16A	5/10%	5-20%	
		3	sequence and failure phases	T1 max.300ms, T2 0,5-10s	Umin 130V AC	3x230V + neutral	1x16A	5%		
		3	voltage relay AC	T1 20ms, T2 0,5 - 10s	160 - 276V AC, 3x400V	3x230V + neutral	1x16A	5%		

100% replaced ●												Updated: 15.06.2005									
Producer	Type	HRN-33 / 35	HRN-34	HRN-41/42, 41 fce "HYSTERZE"	HRN-43,43N, 43N: 160-276V, 43:	HRN-51 /51N	HRN-52 /54	COS-1	HDUI-3	PRI-31	PRI-32	PRI-41/42	TER-7	Phase	Description	Time delay	Controlled range	Supply voltage	Output	Hyst.	Asym.
	OIH3													3	current relay		0,5 - 5A AC/DC	230V AC	1x5A	10%	
	OIH3W													3	current relay	T1 0,5 - 10s; T2 0,5 - 10s	100mA-10A	24/110/230V AC	1x5A	3%	
	G2IM 5AL10													1	current relay	T 0-10s	20mA - 5A, 100mA - 10A AC/DC	12...400V AC	1x5A		
	G2IM 10AL10													1	current relay	T 0-10s	20mA - 5A, 100mA - 10A AC/DC	12...400V AC	1x10A		
	G2IW 5A10													1	current relay		20mA - 5A AC/DC	12...400V AC	1x5A		
	G2IO 5A10													1	current relay		20mA - 5A AC/DC	12...400V AC	1x5A		
	G2IU 5A10													1	current relay		20mA - 5A AC/DC	12...400V AC	1x5A		
	OIH1			●										1	voltage relay		0,8-1,2Un 24AC/DC 230 AC	measured voltage	1x5A	10%	
	G2UM 300VL10			○										1	voltage relay, multif.+ error memory	T 0-10s	30 - 300V AC/DC	30 - 300V AC/DC	1x5A		
	G2UW 300V 10			○										1	voltage relay, function window		30 - 300V AC/DC	30 - 300V AC/DC	1x5A		
	G2UU 300V 10			○										1	voltage relay, undervoltage		30 - 300V AC/DC	30 - 300V AC/DC	1x5A		
	OIH3W			○										1	voltage relay	T1 0,5 - 10s; T2 0,5 - 10s	10 - 600V	24/110/230V AC	1x5A	3%	
	OT3													1	thermistor relay		1,8kohm, max 3,3kohm	230 V AC	1x5A		
	D12DT10 (ST20)													1	thermistor relay		1,8kohm, max 3,3kohm	230 V AC	2x5A		
	GTF 01 / (02)													1	thermistor relay		1,8kohm, max 3,3kohm	230 V AC	2x5A		
	D24SC / (SCT)							○	●					3	power factor monitoring	1..40s	cos φ = 0-0,9	24, 110, 230V AC	2x5A		
	TPW400VSN4X													3	over/undervolta, feailure, sequence phases	T 0,1-10s	115V AC,230V AC,400V AC	12...400 V AC	1x5A		
	TPF400VS4X													3	failure and sequence phases,asym.,rec	T 0,1-10s	115V AC,230V AC,400V AC	12...400 V AC	1x5A		
	G2PF....SO2													3	failure and sequence phases,asym.,rec	T1= 500ms T2= 350ms	115/66V AC,230/132V AC,400/230V	250 V AC	2x5A		
	G2PM....SY10													3	over/undervoltage,phases asym.5-25%	T 0,1-10s	115/66V AC,230/132V AC,400/230V	12...400 V AC	1x5A		5-25%
	G2PW....SY10													3	failure and sequence phases,function w	T 0,1-10s	115/66V AC,230/132V AC,400/230V	12...400 V AC	1x5A		5-25%
	OPF3				●									3	sequence and failure phases		AC/DC 3N 400/230V	measured voltage	1x5A		5-20%
	OPH3W													3	voltage relay, 3 ranges	in case of error 0 - 10 s	160-520V	measured voltage	2x5A		5-20%
	OPH3			●										3	undervoltage relay, phase on wire		160 - 240 V	measured voltage	2x5A		
	OPL3			●										3	undervoltage relay, phase on wire		195V	measured voltage	2x5A		
	OPLT3			●										3	undervoltage relay, phase on wire		195V	measured voltage	2x5A		
	OPLR3			●										3	undervoltage relay, phase on wire		195V	measured voltage	2x5A		

Monitoring relays - cross references chart of functions, ranges, hysteresis, outputs

T1 - delay when supply is connected		1	voltage relay AC	in case of error 0 - 10 s	Umax160-276V,Umin30-99%Umax	measured voltage	1x16A	2-6%	
		1	voltage relay DC	in case of error 0 - 10 s	Umax 6-30V,Umin30-99%Umax	measured voltage	1x16A	2-6%	
T2 - delay when monitored level is exceeded		1	voltage relay, 3 ranges AC/DC	in case of error 0 - 10 s	12,5 - 50V; 40 - 160V; 125 - 500V	230V AC, 24V AC/DC	2x16A	5/10%	
		3	sequence and failure phases, asymmet	in case of error 0 - 10 s	Lower level: 30-99% Umax	400/230V AC, 24V AC/DC	2x16A	5/10%	5-20%
compatible ○		3	sequence and failure phases	T1 max.300ms, T2 0,5-10s	Umin 130V AC	3x230V + neutral	1x16A	5%	
100% replaced ●		3	voltage relay AC	T1 20ms, T2 0,5 - 10s	160 - 276V AC, 3x400V	3x230V + neutral	1x16A	5%	
		3	power factor monitoring, cos φ	in case of error 0 - 10 s	cos φ = 0,1-0,9	230V AC, 24V AC/DC	2x16A		

Updated: 15.06.2005		HRN-33 / 35	HRN-34	HRN-41/42, 41 fce "HYSTERZ	HRN-43,43N, 43N: 160-276V	HRN-51 /51N	HRN-52 /54	COS-1	HDUI-3	PRI-31	PRI-32	PRI-41/42	TER-7	Phase	Description	Time delay	Controlled range	Supply voltage	Output	Hyst.	Asym.		
TELEMECANIQUE (Schneider-electric)	Zelio Control													3	digit.voltage relay AC, 3phases U,I,cosφ	T1 0- 60s; T2 0-10s	AC 280-480V	230/400V AC; 24V AC/DC	2x16A	1-10%	5-15%		
														1	current relay AC - shunt	in case of error 0 - 10 s	Imax 1-16A AC	AC 24-230V, DC 24V	1x16A	0,6-1,2%			
															1	current relay AC - internal transformer	in case of error 0 - 10 s	Imax 1-20A AC	AC 24-230V ,DC 24V	1x16A			
															1	current relay AC/DC, 3 ranges	in case of error 0 - 10 s	0-1,6A; 0-5A; 0-16A	230V AC, 24V AC/DC	2x8A	1-10%		
															1	thermistor relay	Reset, remote reset, memory	min 50ohm, 1,8kohm - 3,3 kohm	AC/DC 24V, AC 230V	2x16A			
																3	sequence and failure phases		200...500 V AC	200...500 V AC	2x8A		
																3	sequence,failure phases,undervoltage		160...220 V AC	200...240 V AC	2x8A		
																3	sequence,failure phases,undervoltage		300... 430 V AC	380...500 V AC	2x8A		
																3	sequence,failure phases,over/undervolt	0,1 - 10s	200...240 V AC	200...240 V AC	2x8A		
																3	sequence,failure phases,over/undervolt	0,1 - 10s	380...500 V AC	380...500 V AC	2x8A		
																3	sequence,failure phases,over/undervolt	0,1 - 10s	220V AC	220V AC	2x8A		
																3	sequence,failure phases,over/undervolt	0,1 - 10s	400V AC	400V AC	2x8A		
																1	current relay		3mA - 1A AC/DC	24V AC	1x8A	5-30%	
																1	current relay		3mA - 1A AC/DC	110...130V AC	1x8A	5-30%	
																1	current relay		3mA - 1A AC/DC	220...240V AC	1x8A	5-30%	
																1	current relay	0,5 - 30s	3mA - 1A AC/DC	110...130V AC	2x8A	5-30%	
																1	current relay	0,5 - 30s	3mA - 1A AC/DC	220...240V AC	2x8A	5-30%	
																1	current relay	0,5 - 30s	3mA - 1A AC/DC	380..415V AC	2x8A	5-30%	
																1	current relay	0,5 - 30s	0,3A - 15A AC/DC	110...130V AC	2x8A	5-30%	
																1	current relay	0,5 - 30s	0,3A - 15A AC/DC	220...240V AC	2x8A	5-30%	
																1	current relay	0,5 - 30s	0,3A - 15A AC/DC	380..415V AC	2x8A	5-30%	
																1	undervoltage relay	0,1 - 10s	100...200 V AC	measured voltage	2x8A		
																1	overvoltage relay	0,1 - 10s	180...270 V AC	measured voltage	2x8A		
																1	overvoltage relay		1-10V, 5-50V, 10 - 100V AC	24V AC	1x8A	5-30%	
																1	overvoltage relay		1-10V, 5-50V, 10 - 100V AC	110...130V AC	1x8A	5-30%	
																1	overvoltage relay		1-10V, 5-50V, 10 - 100V AC	230...240V AC	1x8A	5-30%	
																1	overvoltage relay		30-300V , 50-500V AC	24V AC	1x8A	5-30%	
																1	overvoltage relay		30-300V , 50-500V AC	110...130V AC	1x8A	5-30%	
																1	overvoltage relay		30-300V , 50-500V AC	230...240V AC	1x8A	5-30%	
																1	overvoltage relay	0.05 - 30S	1-10V, 5-50V, 10 - 100V AC	110...130V AC	2x8A	5-30%	
																1	overvoltage relay	0.05 - 30S	1-10V, 5-50V, 10 - 100V AC	230...240V AC	2x8A	5-30%	
																1	overvoltage relay	0.05 - 30S	1-10V, 5-50V, 10 - 100V AC	380..415V AC	2x8A	5-30%	
																1	overvoltage relay	0.05 - 30S	30-300V , 50-500V AC	110...130V AC	2x8A	5-30%	
																1	overvoltage relay	0.05 - 30S	30-300V , 50-500V AC	230...240V AC	2x8A	5-30%	
														1	overvoltage relay	0.05 - 30S	30-300V , 50-500V AC	380..415V AC	2x8A	5-30%			

Monitoring relays - cross references chart of functions, ranges, hysteresis, outputs

Updated: 15.06.2005		HYSTERZE". 42 fce "OKNC	160-276V. 43: 280-480V	1	voltage relay AC	in case of error 0 - 10 s	Umax160-276V,Umin30-99%Umax	measured voltage	1x16A	2-6%	
T1 - delay when supply is connected				1	voltage relay DC	in case of error 0 - 10 s	Umax 6-30V,Umin30-99%Umax	measured voltage	1x16A	2-6%	
T2 - delay when monitored level is exceeded				1	voltage relay, 3 ranges AC/DC	in case of error 0 - 10 s	12,5 - 50V; 40 - 160V; 125 - 500V	230V AC, 24V AC/DC	2x16A	5/10%	
compatible <input type="radio"/>				3	sequence and failure phases, asymmet	in case of error 0 - 10 s	Lower level: 30-99% Umax	400/230V AC, 24V AC/DC	2x16A	5/10%	5-20%
100% replaced <input checked="" type="radio"/>				3	sequence and failure phases	T1 max.300ms, T2 0,5-10s	Umin 130V AC	3x230V + neutral	1x16A	5%	
				3	voltage relay AC	T1 20ms, T2 0,5 - 10s	160 - 276V AC, 3x400V	3x230V + neutral	1x16A	5%	
				3	power factor monitoring, cosφ	in case of error 0 - 10 s	cos φ = 0,7 - 0,9	230V AC, 24V AC/DC	2x16A		
				3	digit.voltage relay AC, 3phases U,I,cosφ	T1 0- 60s; T2 0-10s	AC 280-480V	230/400V AC; 24V AC/DC	2x16A	1-10%	5-15%
				1	current relay AC - shunt	in case of error 0 - 10 s	Imax 1-16A AC	AC 24-230V, DC 24V	1x16A	0,6-1,2%	
				1	current relay AC - internal transformer	in case of error 0 - 10 s	Imax 1-20A AC	AC 24-230V ,DC 24V	1x16A		

Producer	Type	TELEMECANIQUE (Schneider-electric)											Phase	Description	Time delay	Controlled range	Supply voltage	Output	Hyst.	Asym.	
		HRN-33 / 35	HRN-34	HRN-41/42, 41 fce "	HRN-43,43N, 43N	HRN-51 /51N	HRN-52 /54	COS-1	HDIJ-3	PRI-31	PRI-32	PRI-41/42									TER-7
														1	current relay AC/DC, 3 ranges	in case of error 0 - 10 s	0-1,6A; 0-5A; 0-16A	230V AC, 24V AC/DC	2x8A	1-10%	
														1	thermistor relay	Reset, remote reset, memory	min 50ohm, 1,8kohm - 3,3 kohm	AC/DC 24V, AC 230V	2x16A		
TELEMECANIQUE (Schneider-electric)	vyběrový typ /													3	sequence, failure phases, asym.	0,1 - 10s	400 V AC	400 V AC	1x		
														3	sequence, failure phases, asym.	0,1 - 10s	230 V AC	230 V AC	2x		
														3	sequence, failure phases, asym.	0,1 - 10s	400 V AC	400 V AC	2x		
														3	cos j	0,1 - 10s	400 V AC	400 V AC	2x		
														3	sequence, failure phases, undervoltage, a	firmly adjusted	230 V AC	230 V AC	2x		
														3	sequence, failure phases, undervoltage, a	firmly adjusted	400 V AC	400 V AC	2x		
														3	sequence, failure phases, undervoltage, a	firmly adjusted	400 V AC	400 V AC	2x		
														3	sequence, failure phases, asym.	firmly adjusted	200...240 V AC	200...240 V AC	1x		
														3	sequence, failure phases, asym.	0,1 - 10s	200...240 V AC	200...240 V AC	2x		
														3	sequence, failure phases, asym.	0,1 - 10s	380...550 V AC	380...550 V AC	2x		
														1	over/undervoltage	0,1 - 3s	15...600 V AC	230 V AC	1x		
														1	over/undervoltage	0,1 - 3s	0,2...60 V AC	120 V AC	1x		
														1	over/undervoltage	0,1 - 3s	0,2...60 V AC	230 V AC	1x		
														1	over/undervoltage	0,1 - 3s	15...600 V AC	24 V AC	1x		
														1	over/undervoltage	0,1 - 3s	15...600 V AC	230 V AC	1x		
														1	over/undervoltage	0,1 - 3s	20...80 V AC/DC	20...80 V AC/DC	1x		
														1	over/undervoltage	0,1 - 3s	65...260V AC/DC	65...260V AC/DC	1x		
														1	over/undervoltage	0,1 - 3s	20...80 V AC/DC	20...80 V AC/DC	1x		
														1	over/undervoltage	0,1 - 3s	65...260V AC/DC	65...260V AC/DC	1x		
														1	undercurrent/overcurrent	50ms - 30s	2...500mA	230 V AC	1x		
														1	undercurrent/overcurrent	0,1 - 3s	0,1...10A	230 V AC	1x		
														1	overcurrent	firmly adjusted	1...20A	24 V AC/DC 110...240 V AC	1x		
														1	undercurrent/overcurrent	1..20s + 0,1..30s	2...500mA	24 V AC	1x		
														1	undercurrent/overcurrent	1..20s + 0,1..30s	2...500mA	230 V AC	1x		
												1	undercurrent/overcurrent	1..20s + 0,1..30s	0,1...10A	24 V AC	1x				
												1	undercurrent/overcurrent	1..20s + 0,1..30s	0,1...10A	120 V AC	1x				
												1	undercurrent/overcurrent	1..20s + 0,1..30s	0,1...10A	230 V AC	1x				
												1	undercurrent/overcurrent	1..20s + 0,1..30s	10...100A with current trans.	230 V AC	1x				
SCHRACK													3	voltage relay	5-15min	165 V	AC 230 V	1x16A	5%		
													3	voltage relay	0s	160V -240 V	AC 230 V	1x16A	5%		
													1	voltage relay	0s	80 - 120% range	AC 230 V, AC/DC 24V	1x16A	10%		
													1	thermistor relay	0s	1,8 kohm - 3,3 kohm	AC 230 V	1x16A	10%		
													1	current relay	0s	0,5 - 5 A	AC 230 V	1x16A	10%		
													3	power factor monitoring	0s	cos φ = 0,1-0,99	AC 3x400 V	1x16A	5%		
													3	voltage relay	0s	160 - 240V	AC 400/230 V	1x16A	5%	5-20%	

Monitoring relays - cross references chart of functions, ranges, hysteresis, outputs

T1 - delay when supply is connected	T2 - delay when monitored level is exceeded	compatible	100% replaced
		<input type="radio"/>	<input checked="" type="radio"/>
Updated: 15.06.2005			

ce "HYSTERZE", 42 fce "OKN N: 160-276V, 43: 280-480V	1	voltage relay AC	in case of error 0 - 10 s	Umax160-276V, Umin30-99%Umax	measured voltage	1x16A	2-6%	
	1	voltage relay DC	in case of error 0 - 10 s	Umax 6-30V, Umin30-99%Umax	measured voltage	1x16A	2-6%	
	1	voltage relay, 3 ranges AC/DC	in case of error 0 - 10 s	12,5 - 50V; 40 - 160V; 125 - 500V	230V AC, 24V AC/DC	2x16A	5/10%	
	3	sequence and failure phases, asymmet	in case of error 0 - 10 s	Lower level: 30-99% Umax	400/230V AC, 24V AC/DC	2x16A	5/10%	5-20%
	3	sequence and failure phases	T1 max.300ms, T2 0,5-10s	Umin 130V AC	3x230V + neutral	1x16A	5%	
	3	voltage relay AC	T1 20ms, T2 0,5 - 10s	160 - 276V AC, 3x400V	3x230V + neutral	1x16A	5%	
	3	power factor monitoring, cos φ	in case of error 0 - 10 s	cos φ = 0,1-0,99	230V AC, 24V AC/DC	2x16A		
	3	digit.voltage relay AC, 3phases U,I,cosφ	T1 0- 60s; T2 0-10s	AC 280-480V	230/400V AC; 24V AC/DC	2x16A	1-10%	5-15%
	1	current relay AC - shunt	in case of error 0 - 10 s	I _{max} 1-16A AC	AC 24-230V, DC 24V	1x16A	0,6-1,2%	
	1	current relay AC - internal transformer	in case of error 0 - 10 s	I _{max} 1-20A AC	AC 24-230V, DC 24V	1x16A		
1	current relay AC/DC, 3 ranges	in case of error 0 - 10 s	0-1,6A; 0-5A; 0-16A	230V AC, 24V AC/DC	2x8A	1-10%		

Producer	Type	HRN-33 / 35	HRN-34	HRN-41/42, 41 f	HRN-43,43N, 43	HRN-51 /51N	HRN-52 /54	COS-1	HDUI-3	PRI-31	PRI-32	PRI-41/42	TER-7	Phase	Description	Time delay	Controlled range	Supply voltage	Output	Hyst.	Asym.	
																						1
SIEMENS	3RN10 00													●	1	thermistor relay			24V AC/DC, 24..240V AC	2x		
	3RN10 10													●	1	thermistor relay			24V AC/DC, 24..240V AC	2x		
	3RN10 11													●	1	thermistor relay			24V AC/DC, 24..240V AC	2x		
	3RN10 12													●	1	thermistor relay			24V AC/DC, 24..240V AC	2x		
	3RN10 13													●	1	thermistor relay			24V AC/DC, 24..240V AC	2x		
	3UG 35 11BQ50						●								3	sequence and failure phases	3x 230V..400V	measured voltage	2x			
	3UG 35 13BL50						●								3	sequence and failure phases	3x 230V	measured voltage	2x			
	3UG 35 13BP50						●								3	sequence and failure phases	3x 400V	measured voltage	2x			
	3UG 30 12						●								3	sequence,failure phases,asymmetry	3 x 400 V AC	measured voltage	1x			
	3UG 30 13								●						3	voltage relay	3 x 320 - 460 V AC	measured voltage	2x			
	3UG 35 34	○													1	voltage relay	4 ranges 15 - 275 V AC/DC	measured voltage	1x			
	3UG 35 32														1	voltage relay	15 - 600 V AC/DC, 3 underranges	measured voltage	1x			
	3UG 30 41									●					3	voltage relay	400V (combined voltage) AC	measured voltage	2x			
	3UG 30 42						○								3	voltage relay	230V (phases voltage) AC	measured voltage	2x			
	3UG 35 21									○					1	current relay	0,002 - 0,5 A AC/DC	24/230V AC	1x			
	3UG 35 22									●					1	current relay	0,1 - 10 A AC/DC	24/230V AC	1x			
3UG 30 14 BP60									●					3	power factor, cos φ	cos φ = 0,1..0,99	3x400V AC	2x				
VEMER	PSR400					●								3	sequence,failure phase,asym.		400V C	1x8A				
RYBA	3 phase test					○								3	sequence and failure phases		3x400V (3x100V, 3x500V)AC	6A, breaking, closing				