

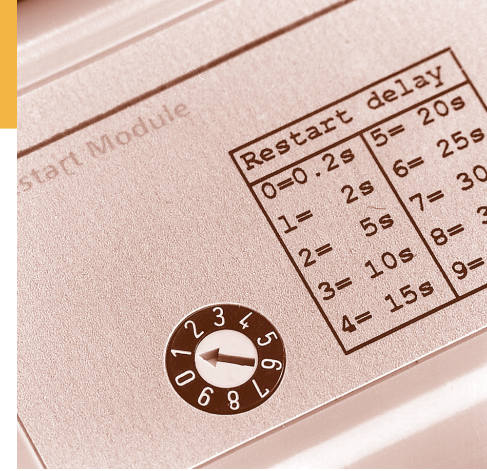
Restart Modules

in ERM, TDRM and TDRM 2 mode

Electronic relays for automatic restart of motors after mains voltage interruption.

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The Restart Module

Normally, after a mains voltage interruption, each motorstarter contactor of a motor control centre requires manual restarting. In this way, even short power dips may cause unacceptable process interruptions.

By incorporating a Restart Module in the control circuit of the motorstarter, however, restarting - depending on the duration of the interruption and the delay time which has been set on the Restart Module - is fully automatic.

The improved Restart Module is available in three modes:

ERM, TDRM or TDRM 2 and is fully exchangeable with all existing ERM, TDRM or TDRM 2 restart relays.

Characteristics

- Immediate restart command after a voltage dip of less than 0.2 s;
- Delayed restart command after a voltage interruption lasting between 0.2 s and 4 s or between 0.2 and 30 s;
- Delay time can be set in 10 stages from 0.2 to 40 s;
- Restart Modules in TDRM or TDRM 2 mode are suitable for motor starters with AUTO-ON/AUTO-OFF contacts.

Restart Modules in ERM mode, ultimate time delayed restart 4 s



U_h	type	mode	packing quantity	Holec no.	ref. no.
110 V~	E 260	ERM	1	1341 260	39503 9
220 V~	E 280	ERM	1	1341 280	63406 0
230 V~	E 261	ERM	1	1341 261	13384 6
240 V~	E 281	ERM	1	1341 281	49007 9
255 V~	E 262	ERM	1	1341 262	12594 0
277 V~	E 263	ERM	1	1341 263	89086 2

Restart Modules in ERM mode, ultimate time delayed restart 30 s

110 V~	E 264	ERM	1	1341 264	39307 3
220 V~	E 282	ERM	1	1341 282	79177 0
230 V~	E 265	ERM	1	1341 265	44487 4
240 V~	E 283	ERM	1	1341 283	13377 8
255 V~	E 266	ERM	1	1341 266	29318 2
277 V~	E 267	ERM	1	1341 267	83468 2

Restart Modules in TDRM mode



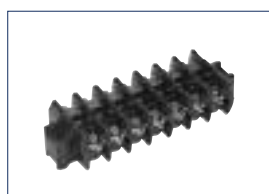
U_h	type	mode	packing quantity	Holec no.	ref. no.
110 V~	TD 269	TDRM	1	1341 269	19309 3
220 V~	TD 284	TDRM	1	1341 284	94517 3
230 V~	TD 270	TDRM	1	1341 270	51040 1
240 V~	TD 285	TDRM	1	1341 285	11138 7
255 V~	TD 271	TDRM	1	1341 271	52200 8
277 V~	TD 272	TDRM	1	1341 272	65420 4

Restart Modules in TDRM 2 mode



110 V~	TD 2.273	TDRM 2	1	1341 273	21041 7
220 V~	TD 2.286	TDRM 2	1	1341 286	94408 4
230 V~	TD 2.274	TDRM 2	1	1341 274	26201 0
240 V~	TD 2.287	TDRM 2	1	1341 287	11009 0
255 V~	TD 2.275	TDRM 2	1	1341 275	60351 6
277 V~	TD 2.276	TDRM 2	1	1341 276	61561 8

Plug socket



description	packing quantity	Holec no.	ref. no.
plug socket for Restart Modules	1	1310 144	46440 7

Technical data Restart Modules

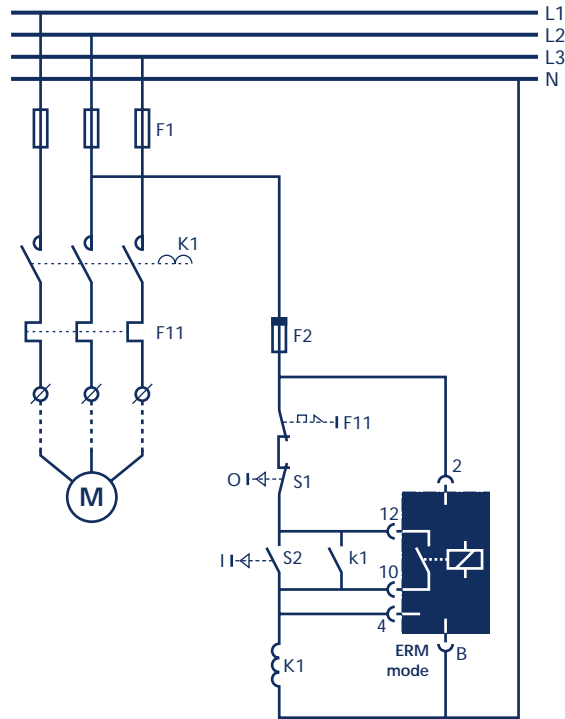
in ERM, TDRM and TDRM 2 mode

rated voltage:	110 V –15%, +10%; 220 V –15%, +10%; 230 V –15%, +10%	
	240 V –15%, +10%; 255 V –15%, +10%; 277 V –15%, +10%	
frequency:	50 ± 1 Hz; 60 ± 1 Hz	
detection level mains voltage interruption:	0.65 ± 0.03 U_n	
detection level mains voltage return:	0.90 ± 0.03 U_n	
max. duration of voltage dip for immediate restart:	200 ± 10 ms	
fast restart delay time:	≤ 50 ms	
max. duration of voltage dip for delayed restart (ERM mode only):	4 ± 0.2 s (types E260, E261, E262, E263, E280, E281)	
	30 ± 0.2 s (types E264, E265, E266, E267, E282, E283)	
restart delay time (timer runs only if $U > 0.9 U_n$):	position	time
	0	0.2 s
	1	2 s
	2	5 s
	3	10 s
	4	15 s
	5	20 s
	6	25 s
	7	30 s
	8	35 s
	9	40 s
	-0.15/+0.35 s	(rdt = 0.2 s and $U_n < 220 V$)
	-0.15/+0.2 s	(rdt = 0.2 s and $U_n \geq 220 V$)
	-0.2/+0.35 s	(rdt > 0.2 s and $U_n < 220 V$)
	±0.2 s	(rdt > 0.2 s and $U_n \geq 220 V$)
duration of restart pulse (ERM mode only):	200 ± 10 ms	
minimum detectable duration of voltage dip:	8 ms	
reserve power electronics:	min. 550 ms	
reset time electronics after connection to mains voltage - after mains voltage interruption of max. 5 minutes:	within tolerances of the delay time	
- at fully discharged supply capacitor:	max. 1.4 s ($U_n = 220 V$); max. 0.7 s ($U_n \geq 220 V$)	
power consumption:	< 0.8 W ($U_n = 110 V$); < 2.0 W ($U_n = 110 V < U_n \leq 230 V$); < 2.8 W ($U_n = 230 V < U_n \leq 277 V$)	
permissible residual voltage at switched-off contactor between terminals 4 and B (due to capacity of wiring):	0.3 U_n	
ambient temperature, service:	-25 ... +70 °C	
ambient temperature, storage:	-25 ... +70 °C	
environmental conditions, damp heat:	IEC 60068-2 - 30	
clearance and creepage distance, classification:	IEC 60664	
Electro-magnetic Compatibility:	EN 50081-2 and EN 50082-2	
output relay		
- max. switching voltage:	380 V~	
- max. switching current:	10 A~	
- max. continuous current:	8 A~	
- max. switching capacity (resistive load):	2000 VA	
degree of protection in accordance with IEC 60529:	IP 40	
dimensions (including plug socket):	107 x 53 x 133 mm	

Circuit diagram of Restart Module in ERM mode

Restart Module in ERM mode

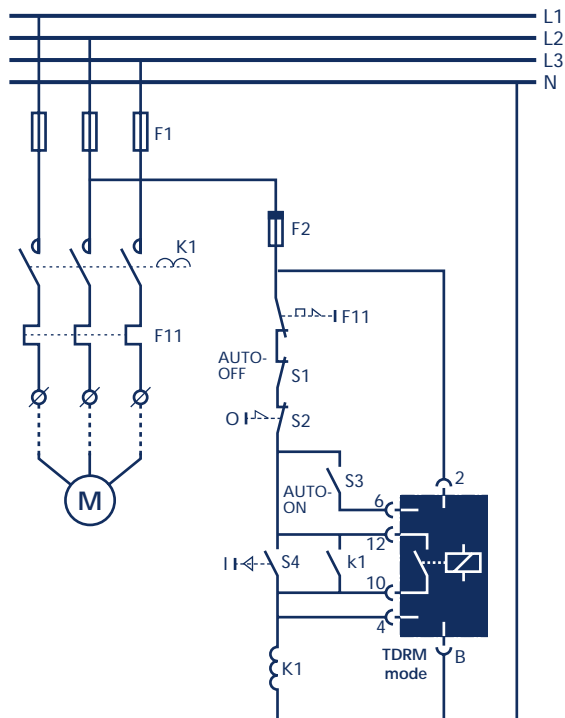
- F 1 main fuse
- F 2 control current fuse
- F 11 thermal relay
- S 1 'stop' button
- S 2 'start' button
- K 1 contactor
- k 1 take-over contact



Circuit diagram of Restart Module in TDRM mode

Restart Module in TDRM mode

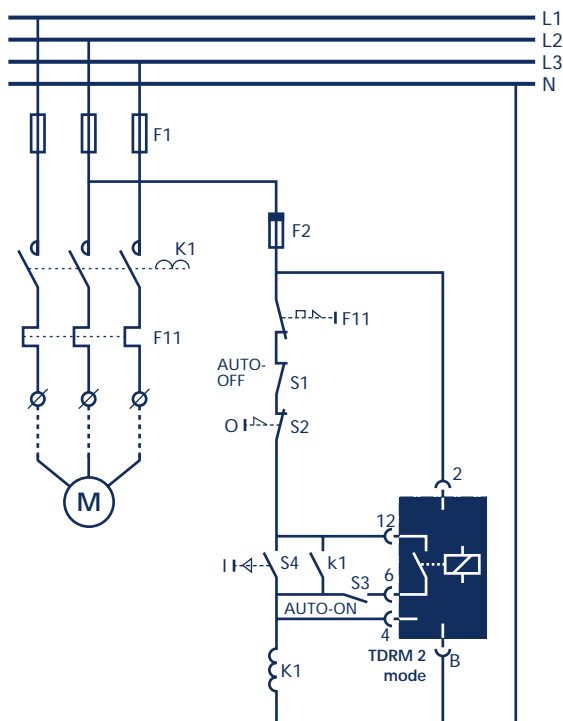
- F 1 main fuse
- F 2 control current fuse
- F 11 thermal relay
- S 1 'AUTO-OFF' contact
- S 2 'stop' switch
- S 3 'AUTO-ON' contact
- S 4 'start' button
- K 1 contactor
- k 1 take-over contact



Circuit diagram of Restart Module in TDRM 2 mode

Restart Module in TDRM 2 mode

- F 1 main fuse
- F 2 control current fuse
- F 11 thermal relay
- S 1 'AUTO-OFF' contact
- S 2 'stop' switch
- S 3 'AUTO-ON' contact
- S 4 'start' button
- K 1 contactor
- k 1 take-over contact



Dimensions (mm) of Restart Module

