

Circuit-Breakers Bulletin 140 / KTA 3



Type:

Bulletin 140-MN / KTA 3-25

Bulletin 140-CMN / KTA 3-100

Bulletin 140M-K5F / KTA 3-160S

Bulletin 140M-M5F / KTA 3-250S

Bulletin 140M-P5F / KTA 3-400S

Current Range:

0.1 ... 25 A

16 ... 90 A

40 ... 160 A

125 ... 250 A

200 ... 400 A

Ordering Advice:

For Allen-Bradley branded products choose the Allen-Bradley Cat. No.

For Sprecher+Schuh branded products choose the Sprecher+Schuh Ref. or Art. No.

Bulletin 140 / KTA 3

- Motor Protection Characteristics
- High Switching Capacity
- High Current Limiting
- For Compact Motor Starters

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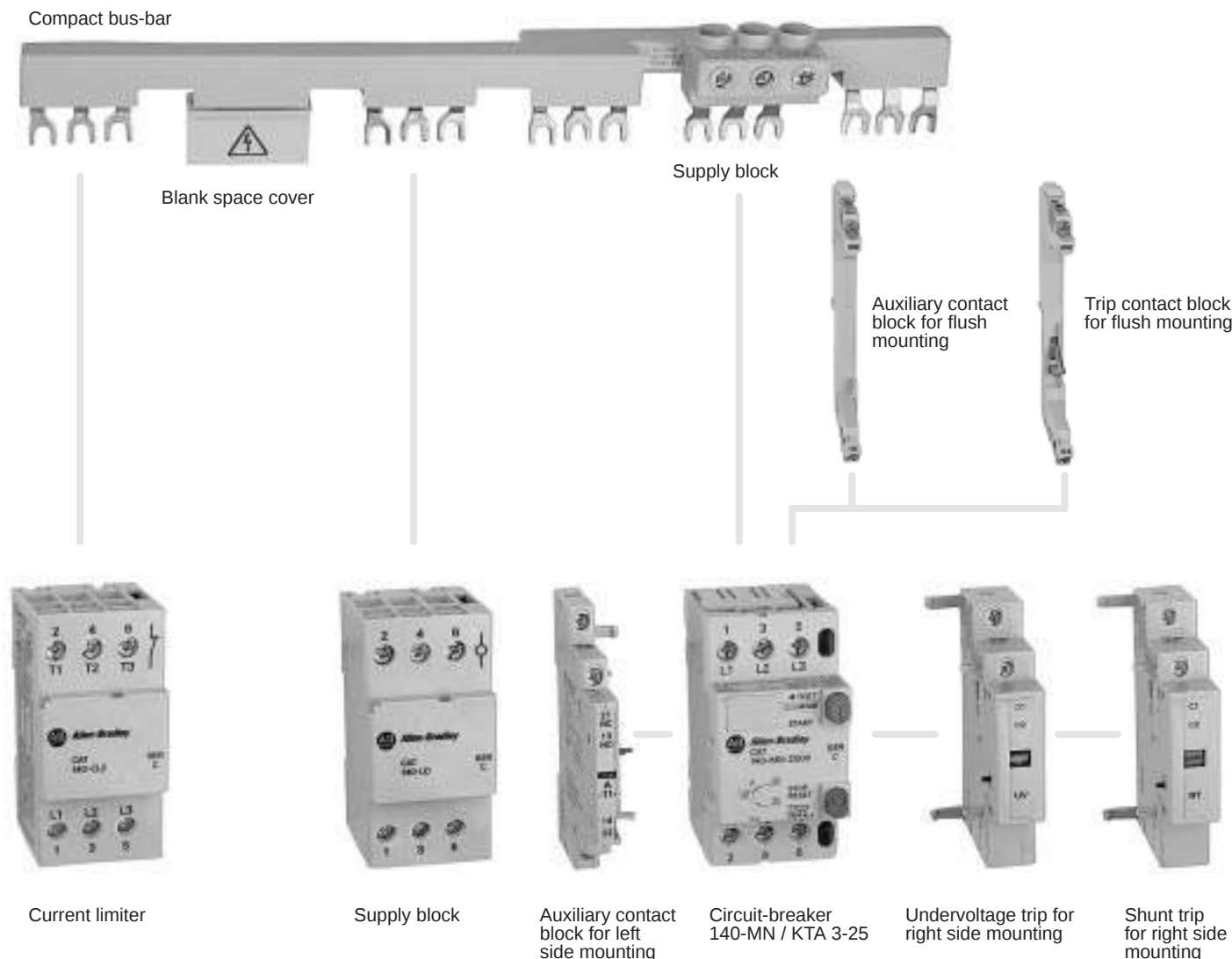
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Modular design for simple configuration

Modular accessories enable the circuit-breakers to be fitted with auxiliary contacts, trip indicating auxiliary contacts and undervoltage or shunt trips simply and quickly to suit the specific application.

High switching capacity reduces plant downtime

Effective current limitation and low let-through energy (of the downstream contactor) enable normal operation to be resumed quickly after a short-circuit.

Integrated automation systems

The comprehensive range of accessories such as auxiliary contacts, trip indicating auxiliary contacts, undervoltage and shunt trips enable the circuit-breakers to be fully integrated in automatic control systems.

Fast fault-finding

Fault-finding and commissioning are made easy as information on switch and tripping statuses are signalled remotely and indicated locally.



Trip contact block
for flush mounting



Undervoltage trip
for flush mounting



Shunt trip
for flush mounting



Circuit-breaker with lockable rotary handle
140-CMN / KTA 3-100



Circuit-breaker
140-CMN / KTA 3-100



Auxiliary contact block
for flush mounting

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The comprehensive range of accessories such as auxiliary contacts, trip indicating auxiliary contacts, undervoltage and shunt trips enable the circuit-breakers to be fully integrated in automatic control systems.

Fast fault-finding thanks to display of the right information

Fault-finding and commissioning are made easy because information on switch and tripping statuses and the cause of tripping is signalled remotely by an auxiliary contact block and indicated locally.

Use as main or EMERGENCY OFF switch

The circuit-breakers type 140-CMN / KTA 3-100 comply with isolation requirements and can be used as main or EMERGENCY OFF switches.



Circuit-breaker
 140M-K5F / KTA 3-160S



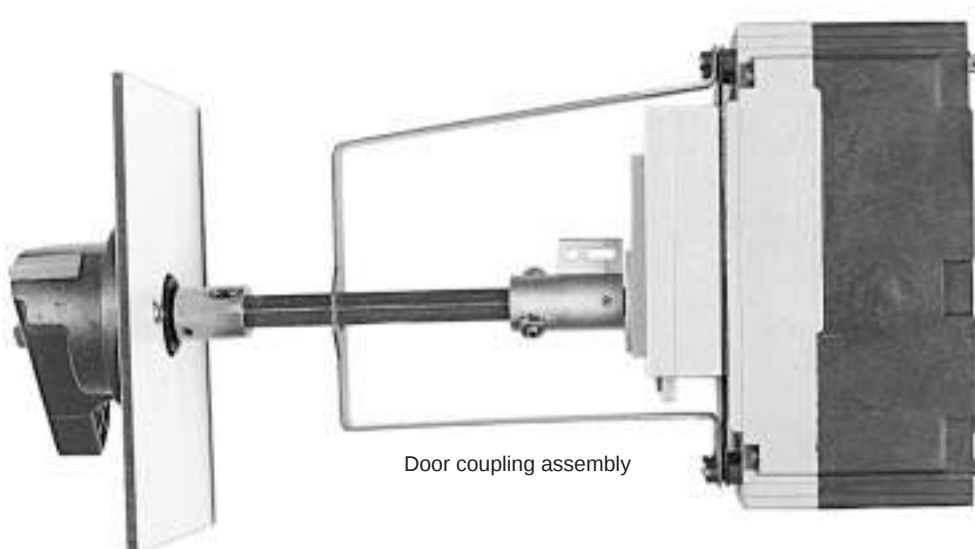
Circuit-breaker
 140M-M5F / KTA 3-250S



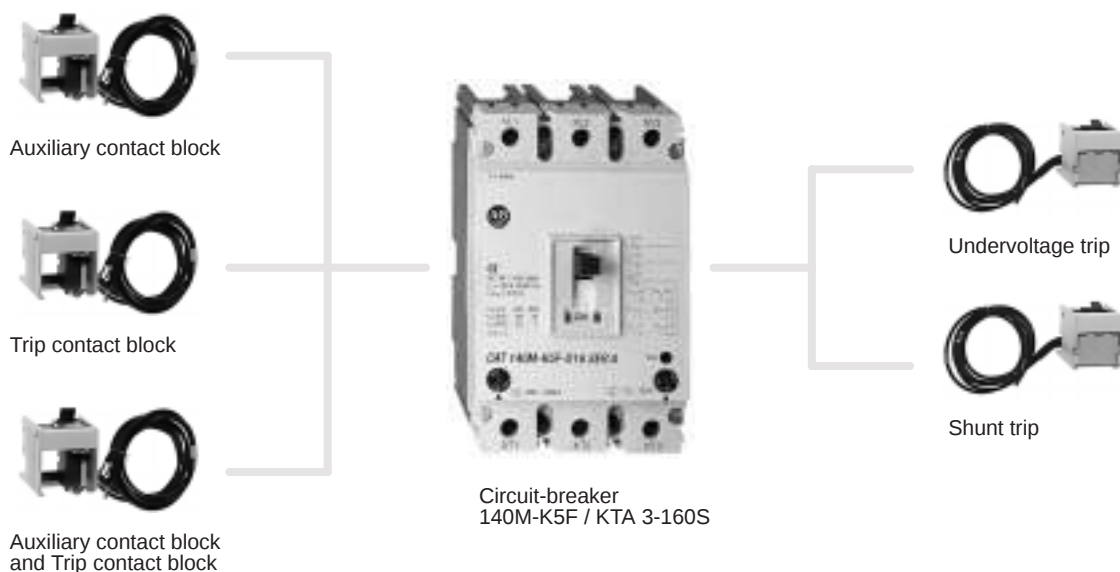
Circuit-breaker
 140M-P5F / KTA 3-400S



Toggle switch locking
 arrangement



Door coupling assembly



High switching capacity reduces plant downtime

Effective current limitation and low let-through energy (of the downstream contactor) enable normal operation to be resumed quickly after a short-circuit.

Integrated automation systems

The comprehensive range of accessories such as auxiliary contacts, trip indicating auxiliary contacts, undervoltage and shunt trips enable the circuit-breakers to be fully integrated in automatic control systems.

Use as main or EMERGENCY OFF switch

The circuit-breakers type 140-CMN / KTA 3-100 comply with isolation requirements and can be used as main or EMERGENCY OFF switches.

A locking device and a door coupling are available

3-Pole Circuit-Breakers

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140-MN / KTA 3-25

140-CMN / KTA 3-100

140M-P5F / KTA 3-400S

Thermal release Adjustment range [A]	Magnetic release Operating current [A]	Switching of 3 phase AC motors, AC-2, AC-3						I _{cu}	I _{cs}	Allen-Bradley Cat. No.	Sprecher+Schuh Type Ref.	Index
		3-phase [kW] (50 Hz)			3-phase [HP] (60 Hz)			400/415 V				
		230 V	400 V	690 V	230 V	460 V	575 V	[kA]	[kA]			
0.1...0.16	1.8	—	0.02	—	—	—	—	100	100	140-MN-0016	KTA 3-25-0.16A	1
0.16...0.25	2.8	—	0.04	—	—	—	—	100	100	140-MN-0025	KTA 3-25-0.25A	2
0.25...0.4	4.4	—	0.06/0.09	—	—	—	—	100	100	140-MN-0040	KTA 3-25-0.4A	3
0.4...0.63	6.9	0.06/0.09	0.09/0.12	0.25	—	—	—	100	100	140-MN-0063	KTA 3-25-0.63A	4
0.63...1.0	11	0.09/0.12	0.18/0.37	0.37/0.55	—	1½	1½	100	100	140-MN-0100	KTA 3-25-1A	5
1.0...1.6	18	0.18/0.35	0.37/0.55	0.75/1.1	—	¾	1	100	100	140-MN-0160	KTA 3-25-1.6A	6
1.6...2.5	28	0.37	0.55/0.75	1.5	1½	1	1-1½	100	100	140-MN-0250	KTA 3-25-2.5A	7
2.5...4.0	44	0.55/0.75	1.1/1.5	2.2/3.0	1	1	3	100	100	140-MN-0400	KTA 3-25-4.0A	8
4.0...6.3	69	1.1/1.5	2.2/2.5	3.7/4.0	1-1½	3	5	100	100	140-MN-0630	KTA 3-25-6.3A	9
6.3...10	110	1.5/3.0	3.0/5.5	5.5/7.5	3	5	7-1½	20	16	140-MN-1000	KTA 3-25-10A	10
10...16	176	3.7/4.0	5.5/7.5	10/12.5	5	10	10	10	6	140-MN-1600	KTA 3-25-16A	11
16...20	220	5.5	7.5/10	15/16	5	10	15	8	6	140-MN-2000	KTA 3-25-20A	12
20...25	275	5.5/7.5	11/12.5	18.5/22	7-1½	15	20	8	6	140-MN-2500	KTA 3-25-25A	13
16...25	350	5.5/7.5	7.5/12.5	15/22	8	17	22	65	65	140-CMN-2500	KTA 3-100-25A	14
25...40	560	10/11	15/22	25/30	12	30	38	65	50	140-CMN-4000	KTA 3-100-40A	15
40...63	882	12.5/20	25/31.5	37/55	22	45	60	65	50	140-CMN-6300	KTA 3-100-63A	16
63...90	1260	22/25	37/45	63/75	30	70	85	50	25	140-CMN-9000	KTA 3-100-90A	17
40...50	300...600	—	25	—	—	—	—	65	33	140M-K5F-C50	KTA 3-160S-50A	18
50...63	380...760	—	31.5	—	—	—	—	65	33	140M-K5F-C63	KTA 3-160S-63A	19
63...80	480...960	—	37/45	—	—	—	—	65	33	140M-K5F-C80	KTA 3-160S-80A	20
80...100	600...1200	—	50/55	—	—	—	—	65	33	140M-K5F-D10	KTA 3-160S-100A	21
100...125	750...1500	—	63	—	—	—	—	65	33	140M-K5F-D12	KTA 3-160S-125A	22
125...160	950...1900	—	75/90	—	—	—	—	65	33	140M-K5F-D16	KTA 3-160S-160A	23
125...160	950...1900	—	75/90	—	—	—	—	65	33	140M-M5F-D16	KTA 3-250S-160A	24
160...200	1200...2400	—	110	—	—	—	—	65	33	140M-M5F-D20	KTA 3-250S-200A	25
200...250	1500...3000	—	132/150	—	—	—	—	65	33	140M-M5F-D25	KTA 3-250S-250A	26
200...250	1500...3000	—	132/150	—	—	—	—	65	33	140M-P5F-D25	KTA 3-400S-250A	27
250...320	1900...3800	—	160/185	—	—	—	—	65	33	140M-P5F-D32	KTA 3-400S-320A	28
320...400	2400...4800	—	200/220	—	—	—	—	65	33	140M-P5F-D40	KTA 3-400S-400A	29

I_{cs} Rated service short-circuit breaking capacity

I_{cu} Ultimate short-circuit breaking capacity

Utilization categories and conditions for testing for alternating current per IEC 947:

AC-2 starting and reversing of slip ring motors

AC-3 starting and disconnecting squirrel cage induction motors

IEC 947-2 performance categories:

I_{cu} still operational after testing with O-t-CO

I_{cs} suitable for normal operation after testing with O-t-CO-t-CO

O = off

CO = restart and off

t = set delay

Accessories – Page 2-8
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Dimensions – Page 2-37

4-Pole Circuit-Breakers

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140M-K5F4 / KTA 3-160S4



140M-P5F4 / KTA 3-400S4

Thermal release Adjustment range [A]	Magentic release Operating current [A]	Switching of 3 phase AC motors, AC-2, AC-3						I_{cu}	I_{cs}	Allen-Bradley Cat. No.	Sprecher+Schuh Type Ref..	Index
		3-phase [kW] (50 Hz)			3-phase [HP] (60 Hz)			400/415 V				
		230 V	400 V	690 V	230 V	460 V	575 V	[kA]	[kA]			
40...50	300...600	–	25	–	–	–	–	65	33	140M-K5F4-C50	KTA 3-160S4-50A	30
50...63	380...760	–	31.5	–	–	–	–	65	33	140M-K5F4-C63	KTA 3-160S4-63A	31
63...80	480...960	–	37/45	–	–	–	–	65	33	140M-K5F4-C80	KTA 3-160S4-80A	32
80...100	600...1200	–	50/55	–	–	–	–	65	33	140M-K5F4-D10	KTA 3-160S4-100A	33
100...125	750...1500	–	63	–	–	–	–	65	33	140M-K5F4-D12	KTA 3-160S4-125A	34
125...160	950...1900	–	75/90	–	–	–	–	65	33	140M-K5F4-D16	KTA 3-160S4-160A	35
125...160	950...1900	–	75/90	–	–	–	–	65	33	140M-M5F4-D16	KTA 3-250S4-160A	36
160...200	1200...2400	–	110	–	–	–	–	65	33	140M-M5F4-D20	KTA 3-250S4-200A	37
200...250	1500...3000	–	132/150	–	–	–	–	65	33	140M-M5F4-D25	KTA 3-250S4-250A	38
200...250	1500...3000	–	132/150	–	–	–	–	65	33	140M-P5F4-D25	KTA 3-400S4-250A	39
250...320	1900...3800	–	160/185	–	–	–	–	65	33	140M-P5F4-D32	KTA 3-400S4-320A	40
320...400	2400...4800	–	200/220	–	–	–	–	65	33	140M-P5F4-D40	KTA 3-400S4-400A	41

I_{cs} Rated service short-circuit breaking capacity

I_{cu} Ultimate short-circuit breaking capacity

Utilization categories and conditions for testing for alternating current per IEC 947:

AC-2 starting and reversing of slip ring motors

AC-3 starting and disconnecting squirrel cage induction motors

IEC 947-2 performance categories:

I_{cu} still operational after testing with O-t-CO

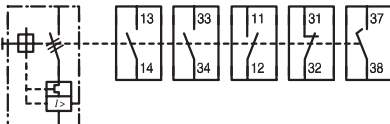
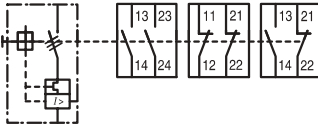
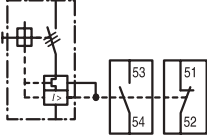
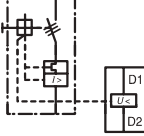
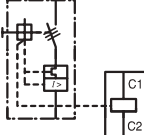
I_{cs} suitable for normal operation after testing with O-t-CO-t-CO

O = off

CO = restart and off

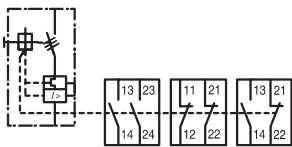
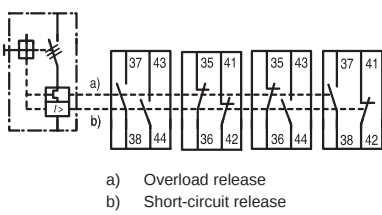
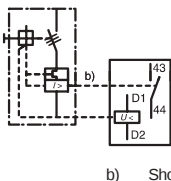
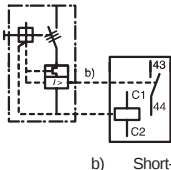
t = set delay

Accessories for Circuit-Breaker 140-MN / KTA 3-25

	Description	Connection diagram	Allen-Bradley Cat. No.	Sprecher+Schuh Type Ref.	Index
	Auxiliary contact blocks for flush mounting 1-pole	140-MN 140-... A10 A210 A01 A201 A10L KTA 3-25 KT 3-25-... PE1-10 PE2-10 PE1-01 PE2-01 PE-L10 	140-A10	KT 3-25-PE1-10	42
			140-A210	KT 3-25-PE2-10	43
			140-A01	KT 3-25-PE1-01	44
			140-A201	KT 3-25-PE2-01	45
			140-A10L	KT 3-25-PE-L10	46
	Auxiliary contact blocks for left side mounting 2-pole Use compact bus-bars with 54 mm spacing	140-MN 140-... A20 A02 A11 KTA 3-25 KT 3-25-... PA-20 PA-02 PA-11 	140-A20	KT 3-25-PA-20	47
			140-A02	KT 3-25-PA-02	48
			140-A11	KT 3-25-PA-11	49
	Trip contact blocks for flush mounting Indicate tripping of circuit-breaker	140-MN 140-... T10 T01 KTA 3-25 KT 3-25-... PF-10 PF-01 	140-T10	KT 3-25-PF-10	50
			140-T01	KT 3-25-PF-01	51
	Undervoltage trip for right side mounting	140-MN 140-... UV.. KTA 3-25 KT 3-25-... UA-...V... 	140-UV-KJ	KT 3-25-UA-24V50/28V60	52
			140-UV-D	KT 3-25-UA-110V50/127V60	53
			140-UV-A	KT 3-25-UA-220-230V50/240-260V60	54
			140-UV-T	KT 3-25-UA-240V50/277V60	55
			140-UV-N	KT 3-25-UA-380-400V50/440-460V60	56
			140-UV-B	KT 3-25-UA-415V50/480V60	57
	Shunt trip for right side mounting	140-MN 140-... RT.. KTA 3-25 KT 3-25-... AA-...V.. 	140-RT-KJ	KT 3-25-AA-24V50/28V60	58
			140-RT-D	KT 3-25-AA-110V50/127V60	59
			140-RT-A	KT 3-25-AA-220-230V50/240-260V60	60
			140-RT-T	KT 3-25-AA-240V50/277V60	61
			140-RT-N	KT 3-25-AA-380-400V50/440-460V60	62
			140-RT-B	KT 3-25-AA-415V50/480V60	63

Accessories for Circuit-Breaker 140-CMN / KTA 3-100

2

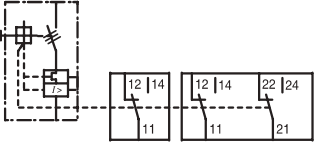
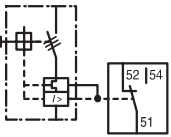
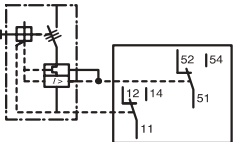
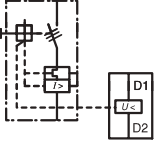
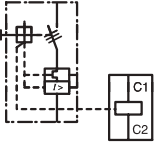
	Description	Connection diagram	Allen-Bradley Cat. No.	Sprecher+Schuh Type Ref.	Index
	Auxiliary contact blocks for flush mounting	140-CMN 140-... CA20 CA02 CA11 KTA 3-100 KT 3-100-... PE-20 PE-02 PE-11 	140-CA20	KT 3-100-PE-20	64
			140-CA02	KT 3-100-PE-02	65
			140-CA11	KT 3-100-PE-11	66
	Trip contact blocks for flush mounting Differential indication: Overload / short-circuit release	140-CMN 140-... CT10-10 CT01-01 CT01-10 CT10-01 KTA 3-100 KT 3-100-... PF-20 PF-02 PF1-11 PF2-11  a) Overload release b) Short-circuit release	140-CT10-10	KT 3-100-PF-20	67
			140-CT01-01	KT 3-100-PF-02	68
			140-CT01-10	KT 3-100-PF1-11	69
			140-CT10-01	KT 3-100-PF2-11	70
	Undervoltage trip for flush mounting Integrated short-circuit trip contact	140-CMN 140-... CUV.. KTA 3-100 KT 3-100-... UA-...V.  b) Short-circuit release	140-CUV-KJ	KT 3-100-UA-24V50	71
			140-CUV-D	KT 3-100-UA-110V50	72
			140-CUV-A	KT 3-100-UA 220V50	73
	Shunt trip for flush mounting Integrated short-circuit trip contact	140-CMN 140-... CRT.. KTA 3-100 KT 3-100-... AA-...V.  b) Short-circuit release	140-CRT-KJ	KT 3-100-AA-24V50	74
			140-CRT-D	KT 3-100-AA-110V50	75
			140-CRT-A	KT 3-100-AA220V50	76

Accessories for Circuit-Breaker 140M-K5F / KTA 3-160S

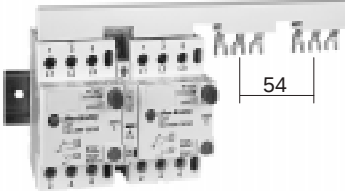
	Description	Connection diagram	Allen-Bradley Cat. No.	Sprecher+Schuh Type Ref.	Index
	Auxiliary switch blocks for flush mounting Leads labelled and fitted with terminal sleeves	140M-K5F 140M-K-... EA11 EA22 KTA 3-160S KT 3-160-... PE-1W PE-2W	140M-K-EA11	KT 3-160-PE-1W	77
			140M-K-EA22	KT 3-160-PE-2W	78
	Trip contact blocks for flush mounting Leads labelled and fitted with terminal sleeves	140M-K5F 140M-K-... ER11 KTA 3-160S KT 3-160-... PF	140M-K-ER11	KT 3-160-PF	79
	Auxiliary- and trip contact blocks for flush mounting Leads labelled and fitted with terminal sleeves	140M-K5F 140M-K-... EA11R11 KTA 3-160S KT 3-160-... PE-PF	140M-K-EA11R11	KT 3-160-PE-PF	80
	Undervoltage trip for flush mounting Leads labelled and fitted with terminal sleeves KJ 24 V, 50/60 Hz KD 110...127 V, 50/60 Hz KF 208...240 V, 50/60 Hz KN 380...480 V, 50/60 Hz ZJ 24 VDC ZD 110...127 VDC ZA 220...250 VDC	140M-K5F 140M-K-... U.. KTA 3-160S KT 3-160-... UA...V..	140M-K-UKJ	KT 3-160-UA-24V50/60	81
	Shunt trip for flush mounting Leads labelled and fitted with terminal sleeves KJ 24 V, 50/60 Hz KD 110...127 V, 50/60 Hz KF 208...240 V, 50/60 Hz KN 380...480 V, 50/60 Hz ZJ 24 VDC ZD 110...127 VDC ZA 220...250 VDC	140M-K5F 140M-K-... A.. KTA 3-160S KT 3-160-... AA...V..	140M-K-UKD	KT 3-160-UA-110-127V50/60	82
			140M-K-UKF	KT 3-160-UA-208-240V50/60	83
			140M-K-UKN	KT 3-160-UA-380-480V50/60	84
			140M-K-UZJ	KT 3-160-UA-24VDC	85
			140M-K-UZD	KT 3-160-UA-110-127VDC	86
			140M-K-UZA	KT 3-160-UA-220-250VDC	87
			140M-K-AKJ	KT 3-160-AA-24V50/60	88
		140M-K5F 140M-K-... A.. KTA 3-160S KT 3-160-... AA...V..	140M-K-AKD	KT 3-160-AA-110-127V50/60	89
			140M-K-AKF	KT 3-160-AA-208-240V50/60	90
			140M-K-AKN	KT 3-160-AA-380-480V50/60	91
			140M-K-AZJ	KT 3-160-AA-24VDC	92
			140M-K-AZD	KT 3-160-AA-110-127VDC	93
			140M-K-AZA	KT 3-160-AA-220-250VDC	94

Accessories for Circuit-Breaker 140M-M5F + 140M-P5F / KTA 3-250S + KTA 3-400S

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	Description	Connection diagram	Allen-Bradley Cat. No.	Sprecher+Schuh Type Ref.	Index
	Auxiliary switch blocks for flush mounting Leads labelled and fitted with terminal sleeves	140M-M5F 140M-P-... 140M-P5F EA11 EA22 KTA 3-250S KT 3-400-... KTA 3-400S PE-1W PE-2W 	140M-P-EA11	KT 3-400-PE-1W	95
			140M-P-EA22	KT 3-400-PE-2W	96
	Trip contact blocks for flush mounting Leads labelled and fitted with terminal sleeves	140M-M5F 140M-P-... 140M-P5F ER11 KTA 3-250S KT 3-400-... KTA 3-400S PF 	140M-P-ER11	KT 3-400-PF	97
	Auxiliary contact- and trip contact blocks for flush mounting Leads labelled and fitted with terminal sleeves	140M-M5F 140M-P-... 140M-P5F EA11R11 KTA 3-250S KT 3-400-... KTA 3-400S PE-PF 	140M-P-EA11R11	KT 3-400-PE-PF	98
	Undervoltage trip for flush mounting Leads labelled and fitted with terminal sleeves KJ 24 V, 50/60 Hz KD 110...127 V, 50/60 Hz KF 208...240 V, 50/60 Hz KN 380...480 V, 50/60 Hz ZJ 24 VDC ZD 110...127 VDC ZA 220...250 VDC	140M-M5F 140M-P-... 140M-P5F U.. KTA 3-250S KT 3-400-... KTA 3-400S UA-...V.. 	140M-P-UKJ	KT 3-400-UA-24V50/60	99
			140M-P-UKD	KT 3-400-UA-110-127V50/60	100
			140M-P-UKF	KT 3-400-UA-208-240V50/60	101
			140M-P-UKN	KT 3-400-UA-380-480V50/60	102
			140M-P-UZJ	KT 3-400-UA-24VDC	103
			140M-P-UZD	KT 3-400-UA-110-127VDC	104
			140M-P-UZA	KT 3-400-UA-220-250VDC	105
	Shunt trip for flush mounting Leads labelled and fitted with terminal sleeves KD 110...127 V, 50/60 Hz KJ 24 V, 50/60 Hz KF 208...240 V, 50/60 Hz KN 380...480 V, 50/60 Hz ZJ 24 VDC ZD 110...127 VDC ZA 220...250 VDC	140M-M5F 140M-P-... 140M-P5F A.. KTA 3-250S KT 3-400-... KTA 3-400S AA-...V.. 	140M-P-AKJ	KT 3-400-AA-24V50/60	106
			140M-P-AKD	KT 3-400-AA-110-127V50/60	107
			140M-P-AKF	KT 3-400-AA-208-240V50/60	108
			140M-P-AKN	KT 3-400-AA-380-480V50/60	109
			140M-P-AZJ	KT 3-400-AA-24VDC	110
			140M-P-AZD	KT 3-400-AA-110-127VDC	111
			140M-P-AZA	KT 3-400-AA-220-250VDC	112

Accessories for Circuit-Breaker 140-MN / KTA 3-25

	Description		Allen-Bradley Cat. No.	Sprecher+Schuh Type Ref.	Index
	Current limiter Increased switching capacity No back-up fuse required Safe operation Repulsion contacts close automatically Can be used as single and group protection Can be mounted next to 140-MN / KTA 3-25 with compact bus-bars or snap mounted on 140-MN / KTA 3-25 Current limiter also acts as a terminal block		140-CL2	KTL 3-65-N	113
	Supply blocks For the supply of compact bus-bars Increases terminal capacity		140-LD	KT 3-25-A2	114
			140-L2	KT 3-25-A3	115
	Compact bus-bars 45 mm spacing for circuit breakers with flush-mounted auxiliary contact block	2x3 connections	140-L452	KT 3-25-DB-45-2	116
		3x3 connections	140-L453	KT 3-25-DB-45-3	117
		4x3 connections	140-L454	KT 3-25-DB-45-4	118
		5x3 connections	140-L455	KT 3-25-DB-45-5	119
	Compact bus-bars 54 mm spacing for circuit breakers with side-mounted auxiliary switch blocks	2x3 connections	140-L12	KT 3-25-DB-54-2	120
		3x3 connections	140-L13	KT 3-25-DB-54-3	121
		4x3 connections	140-L11	KT 3-25-DB-54-4	122
		5x3 connections	140-L1	KT 3-25-DB-54-5	123
	Blank space cover For covering unused connection lugs		140-L3	KT 3-25-DBA	124

Accessories for Circuit-Breaker 140-MN / KTA 3-25

	Description		Allen-Bradley Cat. No.	Sprecher+Schuh Type Ref.	Index
 140-E41 / KT 3-25-KA 140-E55 / KT 3-25-KAZ	Enclosure With knock-outs for 2 signal lights, including earth protection and neutral wire terminals	Protection class: IP41	140-E41	KT 3-25-KA	125
		Protection class: IP55 (with seal and protective membrane)	140-E55	KT 3-25-KAZ	126
	Button membrane Spare part with 4 grooved screws (not including mounting frame)		140-N18	KT 3-25-DM	127
	Indicator light For mounting in upper part of enclosure with plug-in connector Connection cable 180 mm long, including lamp	red 120 V	140-LR120	KT 3-25-DL-RT-120V	128
		red 240 V	140-LR240	KT 3-25-DL-RT-240V	129
		red 400 V	140-LR400	KT 3-25-DL-RT-400V	130
		green 120 V	140-LG120	KT 3-25-DL-GN-120V	131
		green 240 V	140-LG240	KT 3-25-DL-GN-240V	132
		green 400 V	140-LG400	KT 3-25-DL-GN-400V	133
		white 120 V	140-LW120	KT 3-25-DL-WS-120V	134
		white 240 V	140-LW240	KT 3-25-DL-WS-240V	135
	Locking arrangement Mounting on the enclosure For 1...3 padlocks 6 mm in diameter		140-N22	KT 3-25-DS	137
	Locking arrangement For locking the START button For 1...3 padlocks 6 mm in diameter		140-N24	KT 3-25-DSC	138
	Screw adapter For screw arrangement of a circuit breaker		140-N12	KT 3-25-AS	139

Accessories for Circuit-Breaker 140-CMN / KTA 3-100

	Description		Allen-Bradley Cat. No.	Sprecher+Schuh Type Ref.	Index
	Lockable rotary handle For 1...3 padlocks 4...8 mm in diameter Can be locked in OFF position	black handle	140-KN	KT 3-100-KN	140
		red handle with yellow self-adhesive label	140-KRY	KT 3-100-KRY	141

Accessories for Circuit-Breaker 140M-K5F ... 140M-P5F / KTA 3-160S ... KTA 3-400S

	Description		For use with	Allen-Bradley Cat. No.	Sprecher+Schuh Type Ref.	Index
	Complete door coupling assemble Comprising: knob, coupling, shaft and actuator For three 4 mm diam. padlocks Locks inserted in position 0 Shaft 330 mm Protection Class: IP54	red / black knob	140M-K5F / KTA 3-160S	140M-K-D54N	KT 3-160-HRB	142
		red / black knob	140M-M5F + 140M-P5F / KTA 3-250S + KTA 3-400S	140M-P-D54N	KT 3-400-HRB	143
	Replacement shaft for complete door coupling assemble only L = 330 mm (not compatible with the previous type KT 3-400-HT)		all	140M-P-DS	KT 3-400-HTA	144
	Toggle switch locking attachment For locking the circuit-breaker in the OFF position		140M-K5F / KTA 3-160S	140M-K-M	KT 3-160-DSA	145
			140M-M5F + 140M-P5F / KTA 3-250S + KTA 3-400S	140M-P-M	KT 3-400-DSA	146
	Lockable knob For three 6...8 mm diam. padlocks Protection Class: IP40	black knob	140M-K5F / KTA 3-160S	140M-K-KN	KT 3-160-HN	147
		red knob		140M-K-KE	KT 3-160-HRY	148
		black knob	140M-M5F + 140M-P5F / KTA 3-250S + KTA 3-400S	140M-P-KN	KT 3-400-HN	149
		red knob		140M-P-KE	KT 3-400-HRY	150
	Remote operator For remote pushbutton ON / OFF control of circuit-breaker Automatic OFF by integrated position switch Mechanical position indicator (ON / OFF / TRIPPED)	$U_s = 230 \text{ V}$	140M-K5F / KTA 3-160S	140M-K-PF	KT 3-160-FA	151
			140M-M5F / KTA 3-250S	140M-M-PF	KT 3-250-FA	152
			140M-P5F / KTA 3-400S	140M-P-PF	KT 3-400-FA	153
	Locking device for remote operator Cylinder lock Kit for installation on site Prevents electrical operation Mechanically interlocked shutter prevents manual operation Prevents removal of mechanism cover		all	140M-P-Q	KT 3-400-FA-DS	154
	Terminal covers Provides finger protection		140M-K5F / KTA 3-160S	140M-K-C	KT 3-160-HA	155
			140M-M5F / KTA 3-250S	140M-M-C	KT 3-250-HA	156
			140M-P5F / KTA 3-400S	140M-P-C	KT 3-400-HA	157

IEC Performance Data

	140-MN-... (KTA 3-25-...)												
	0016 (0.16A)	0025 (0.25A)	0040 (0.4A)	0063 (0.63A)	0100 (1A)	0160 (1.6A)	0250 (2.5A)	0400 (4A)	0630 (6.3A)	1000 (10A)	1600 (16A)	2000 (20A)	2500 (25A)
Switching of standard three-phase motors AC-2, AC-3													
230/240 V [kW]	–	–	–	0.06/0.09	0.09/0.12	0.18/0.25	0.37	0.55/0.75	1.1/1.5	1.5/3.0	3.7/4.0	5.5	5.5/7.5
400/415 V [kW]	0.02	0.04	0.06/0.09	0.09/0.12	0.18/0.37	0.37/0.55	0.55/0.75	1.1/1.5	2.2/2.5	3.0/5.5	5.5/7.5	7.5/10	11/12.5
500 V [kW]	–	–	–	0.25	0.37	0.55/0.75	1.1	1.5/2.2	2.5/3.0	3.7/6.3	7.5/10	11	12.5/16
690 V [kW]	–	–	–	0.25	0.37/0.55	0.75/1.1	1.5	2.2/3.0	3.7/4.0	5.5/7.5	10/12.5	15/16	18.5/22
Back-up fuses gG, aM, only if $I_{cc} > I_{cu}$													
230/240 V [A]	–	–	–	–	–	–	–	–	–	–	125	125	125
400/415 V [A]	–	–	–	–	–	–	–	–	–	125	125	125	125
500 V [A]	–	–	–	–	–	–	–	–	100	100	100	100	100
690 V [A]	–	–	–	–	–	–	50	50	63	80	80	80	80
Ultimate short-circuit breaking capacity I_{cu}													
230/240 V [kA]	100	100	100	100	100	100	100	100	100	100	30	20	20
400/415 V [kA]	100	100	100	100	100	100	100	100	100	20	10	8	8
500 V [kA]	100	100	100	100	100	100	100	100	30	6	6	6	6
690 V [kA]	100	100	100	100	100	100	4.5	8	8	4.5	3	3	3
Rated service short-circuit breaking capacity I_{cs}													
230/240 V [kA]	100	100	100	100	100	100	100	100	100	100	20	16	16
400/415 V [kA]	100	100	100	100	100	100	100	100	100	16	6	6	6
500 V [kA]	100	100	100	100	100	100	100	100	20	6	4.5	4.5	4.5
690 V [kA]	100	100	100	100	100	100	4.5	6	6	3	3	3	3

Performance Data per UL, CSA as a Starter

(UL 508, CSA C22.2 No..14, in connection with a short-circuit protection device)

	140-MN-... (KTA 3-25-...)												
	0016 (0.16A)	0025 (0.25A)	0040 (0.4A)	0063 (0.63A)	0100 (1A)	0160 (1.6A)	0250 (2.5A)	0400 (4A)	0630 (6.3A)	1000 (10A)	1600 (16A)	2000 (20A)	2500 (25A)
Max. short-circuit current													
480 V [kA]	42	42	42	42	42	42	42	42	42	14	10	10	10
600 V [kA]	42	42	42	42	42	42	42	42	10	10	5	5	5
Motor load, single-phase													
115 V [HP]	–	–	–	–	–	–	1/10	1/8	1/4	1/2	1	1-1/2	2
200 V [HP]	–	–	–	–	–	–	–	–	–	–	–	–	–
230 V [HP]	–	–	–	–	–	–	1/6	1/3	1/2	1-1/2	2	3	3
Motor load, three-phase													
200 V [HP]	–	–	–	–	–	–	1/2	3/4	1-1/2	2	3	5	5
230 V [HP]	–	–	–	–	–	–	1/2	1	1-1/2	3	5	5	7-1/2
460 V [HP]	–	–	–	–	1/2	3/4	1	2	3	5	10	10	15
575 V [HP]	–	–	–	–	1/2	1	1-1/2	3	5	7-1/2	10	15	20
Maximum rated current of protection device [A]	1200												

IEC Performance Data

140-CMN-... (KTA 3-100-...)				140M-K5F (4)-... (KTA 3-160S(4)-...)						140M-M5F(4)-... (KTA 3-250S(4)-...)			140M-P5F(4)-... (KTA 3-400S(4)-...)		
2500 (25A)	4000 (40A)	6300 (63A)	9000 (90A)	C50 (50A)	C63 (63A)	C80 (80A)	D10 (100A)	D12 (125A)	D16 (160A)	D16 (160A)	D20 (200A)	D25 (250A)	D25 (250A)	D32 (320A)	D40 (400A)
5.5/7.5	10/11	12.5/20	22/25	12.5/15	16/20	22/25	30/31.5	37/40	45/50	45/50	55/63	75	75	90	110/132
7.5/12.5	15/22	25/31.5	37/45	25	31.5	37/45	50/55	63	75/90	75/90	110	132/150	132/150	160/185	200/220
11/16	18.5/25	30/40	45/55	30/31.5	37/40	45/55	63	75	90/110	90/110	132	150/160	150/160	185/220	250
15/22	25/30	37/55	63/75	37/45	55	63/75	90	110	132/150	132/150	160/185	200/220	200/220	250/300	335/375
–	–	–	–	400	400	400	400	400	400	400	400	400	630	630	630
160	160	160	160	400	400	400	400	400	400	400	400	400	630	630	630
160	160	160	160	160	160	160	160	160	160	315	315	315	400	400	400
160	160	160	160	160	160	160	160	160	160	315	315	315	400	400	400
100	100	100	100	65	65	65	65	65	65	65	65	65	65	65	65
65	65	65	50	65	65	65	65	65	65	65	65	65	65	65	65
50	30	30	25	14	14	14	14	14	14	18	18	18	25	25	25
15	8	8	6	14	14	14	14	14	14	18	18	18	25	25	25
100	100	100	100	33	33	33	33	33	33	33	33	33	33	33	33
65	50	50	25	33	33	33	33	33	33	33	33	33	33	33	33
50	25	25	13	7	7	7	7	7	7	9	9	9	13	13	13
15	6	6	6	7	7	7	7	7	7	9	9	9	13	13	13

Performance Data per UL, CSA as a Starter

(UL 508, CSA C22.2 No..14, in connection with a short-circuit protection device)

140-CMN-... (KTA 3-100-...)			
2500 (25A)	4000 (40A)	6300 (63A)	9000 (90 A)
65	65	65	65
42	42	42	30
2	3-1/2	5	7-1/2
3-1/2	6	10	15
4	7.5	12	20
–	–	–	–
8	12	22	30
17	30	45	70
22	38	60	85
2000			

General Data

	140-MN (KTA 3-25)	140-CMN (KTA 3-100)	140M-K5F (KTA 3-160S)	140M-M5F (KTA 3-250S)	140M-P5F (KTA 3-400S)
Rated insulation voltage IEC, SEV, VDE 0660	690 V				
UL, CSA	600 V		—		
Rated frequency	40...60 Hz				
Life span					
mechanical	50 000 oper.	30 000 oper.	15 000 oper.	10 000 oper.	8 000 oper.
electrical	50 000 oper.	10 000 oper. up to 63 A 5 000 oper. up to 90 A	10 000 oper.	8 000 oper.	5 000 oper.
Switching frequency	max. 30 oper. /h.	max. 20 oper. /h.	max. 20 oper. /h.	max. 20 oper. /h.	max. 20 oper. /h.
Ambient temperature					
storage	- 25 °C...+ 80 °C		- 20 °C...+ 60 °C		
operation	- 25 °C...+ 60 °C		- 5 °C...+ 40 °C		
Resistance to climatic change	C IV (Coordination according to IEC 68)				
Damp heat	40 °C, 92 %, 56 days		IEC 68 T2-3: 40 °C, 93 %		
Alternating climatic conditions	23 °C, 83 %/40 °C, 93 %, 56 cycles		IEC 68 T2-3D: 25 °C/55 °C, 93 %		
Protection class	IP20 closed		IP00 / IP20 with terminal cover		
Resistance to shock	30 G, 20 ms	under test	5 G, 15 ms		
Resistance to vibration					
Frequency range	10...150 Hz		13...150 Hz		
In all directions	>7.5 G	under test	1 G		
Rated thermal current I_{th} IEC, SEV, VDE 0660					
at 40 °C ambient temperature	—	—	40... 160 A	125... 250 A	200... 400 A
at 60 °C ambient temperature	0.1... 25 A	16... 90 A	40... 140 A	125... 220 A	200... 360 A
Rated supply current I_e	13 setting ranges 0.1... 25 A	4 setting ranges 16... 90 A	6 setting ranges 40... 160 A	3 setting ranges 125... 250 A	3 setting ranges 200... 400 A
Temperature dependency			setting ranges 160 A:	setting ranges 250 A:	setting ranges 400 A:
40 °C	See temperature compensation		160 A	250 A	400 A
50 °C			150 A	235 A	380 A
60 °C			140 A	220 A	360 A
70 °C			130 A	210 A	340 A
Rated impulse withstand voltage U_{imp} /pollution degree					
Main circuits	6 kV/3	6 kV/3	8 kV/3	8 kV/3	8 kV/3
Auxiliary circuits	6 kV/3	6 kV/3	4 kV/3	4 kV/3	4 kV/3
Overload protection					
Characteristics	motor protection				
Ambient temperature compensation	- 20 °C...+ 60 °C		- 5 °C...+ 40 °C		
Phase-failure protection	—	differential release	—		
Magnetic release					
Response current	fixed setting 11 x I_e max.	fixed setting 14 x I_e max.	value setting range		
	I_e max. = maximum values of setting ranges				
Total power loss P_v circuit-breaker at rated load operating temperature	7 W	33 W	45 W	75 W	120 W

General Data

	140-MN (KTA 3-25)	140-CMN (KTA 3-100)	140M-K5F (KTA 3-160S)	140M-M5F (KTA 3-250S)	140M-P5F (KTA 3-400S)
Conformity to standards	IEC 947-1/2/4/5; EN 60947; UL 508; CSA 22.2		IEC 947-1/2/4/5; EN 60947	IEC947-1/2/4/5; EN 60947	
Approvals	CE, SEV, Germ. Lloyd, PTB, DEMKO, SEMKO, ETI, NEMKO, UL, CSA, Bureau Veritas, Lloyd's Reg. of Shipping, Maritime Reg. of Shipping, RINA,	CE, UL, CSA, (Germ. Lloyd, Bureau Veritas, Lloyd's Reg. of Shipping, Maritime Reg. of Shipping, RINA in preparation)	CE, (Germ. Lloyd, Bureau Veritas, Lloyd's Reg. of Shipping, Maritime Reg. of Shipping, RINA in preparation)		
Terminal parts					
Type of terminals					
 fine stranded [mm ²]	1 x 1... 4	1 x 2.5... 35	max. 70	max. 120	max. 185
 coarse stranded [mm ²]	1 x 1... 6	1 x 4... 50	max. 95	max. 150	max. 240
Tightening torque [Nm]	2.5	6... 10	4	16	16
 coarse stranded [AWG]	No.. 16... 10	No.. 12... 2	No.. 8...3/0	MCM 300	MCM 500
Tightening torque [lb-in]	20... 26	53... 120	35	145	145
Weights					
Three-pole circuit-breaker [g]	290	1845	2100	4000	5400
Four-pole circuit-breaker [g]	—	—	2700	5100	6100

Accessories

	Auxiliary contact blocks for flush mounting on 140-MN (KTA 3-25) 140-A... (KT 3-25-PE...)				Auxiliary contact blocks for left side mounting on 140-MN (KTA 3-25) 140-A... (KT 3-25-PA...)			
Rated thermal current I_{th} at 40 °C ambient temperature at 60 °C ambient temperature	6 A 4 A				10 A 6 A			
Contact class coordination according to NEMA (UL/CSA-Standards) AC DC	B 600 Standard Pilot Duty R 300 Light Pilot Duty				B 600 Standard Pilot Duty R 300 Light Pilot Duty			
Contacts Contact reliability acc. to DIN 19 240 H-contact bridges	—				Compatible with electronics, positively driven			
Back-up fuses gl, gL	16 A				16 A			
Rated supply current AC-15: DC-13:	230/240 V 2 A	400/415 V 1 A	500 V 0.8 A	690 V 0.5 A	230/240 V 2 A	400/415 V 1 A	500 V 0.8 A	690 V 0.5 A
	24 V 2 A	48 V 0.6 A	110 V 0.2 A	220 V 0.1 A	24 V 2 A	48 V 0.6 A	110 V 0.2 A	220 V 0.1 A
Terminal parts								
Type of terminals								
 fine stranded [mm ²]	1 x 0.75... 2.5				1 x 0.75... 2.5			
 coarse stranded [mm ²]	1 x 0.75... 4				1 x 0.75... 4			
Tightening torque [Nm]	2.5				2.5			
 coarse stranded [AWG]	No.. 18... 14				No.. 18... 14			
Tightening torque [lb-in]	20... 26				20... 26			
Weights [g]	12				35			

Accessories

	Auxiliary contact blocks for flush mounting on 140-CMN (KTA 3-100) 140-A... (KT 3-100-PE...)					Auxiliary contact blocks for flush mounting on 140M-K5F (KTA 3-160S) 140M-K-EA.. (KT 3-160-PE...)		
Rated thermal current I_{th} at 40 °C ambient temperature at 60 °C ambient temperature	10 A 6 A					5 A 4 A		
Contact class coordination according to NEMA (UL/CSA-standards) AC DC	B 600 Standard Pilot Duty R 300 Light Oilot Duty					– –		
Back-up fuses gl, gL	16 A					–		
Rated supply current AC-15: DC-13:	230/240 V 3 A	400 V 2.5 A	500 V 1.5 A	690 V 0.75 A		110 V 3 A	230/240 V 2 A	400/415 V 1 A
	24 V 2 A	48 V 0.6 A	110 V 0.2 A	220 V 0.1 A	440 V 0.04 A	48 V 0.5 A	110 V 0.2 A	230 V 0.1 A
Terminal parts Type of terminals						Accessorie connections		
 fine stranded [mm²]	2 x 0.75... 2.5							
 coarse stranded [mm²]	2 x 0.75... 2.5							
Tightening torque [Nm]	1... 1.5							
 coarse stranded [AWG]	No.. 18... 14							
Tightening torque [lb-in]	8.8... 10.3							
Weights [g] [g]	31					34 (1 C/O) 60 (2 C/O)		

	Auxiliary contact blocks for flush mounting on 140M-M5F + 140M-P5F (KTA 3-250S + KTA 3-400S) 140M-P-EA (KT 3-400-PE...)			Trip contact blocks for flush mounting on 140-MN (KTA 3-25) 140-T... (KT 3-25-PF...)			
Rated thermal current I_{th} at 40 °C ambient temperature at 60 °C ambient temperature	5 A 4 A			6 A 4 A			
Contact class coordination according to NEMA (UL/CSA-standards)	– –			B 600 Standard Pilot Duty R 300 Light Pilot Duty			
Back-up fuses gl, gL	–			16 A			
Rated supply current AC-15: DC-13:	110 V 3 A	230/240 V 2 A	400/415 V 1 A	230/240 V 2 A	400/415 V 1 A	500 V 0.8 A	690 V 0.5 A
	48 V 0.5 A	110 V 0.2 A	230 V 0.1 A	24 V 2 A	48 V 0.6 A	110 V 0.2 A	230 V 0.1 A
Terminal parts Type of terminals	Accessorie connections						
 fine stranded [mm ²]				1 x 0.75... 2.5			
 coarse stranded [mm ²]				1 x 0.75... 4			
Tightening torque [Nm]				2.5			
 coarse stranded [AWG]				No.. 18... 14			
Tightening torque [lb-in]				20... 26			
Weights [g] [g]	34 (1 C/O) 60 (2 C/O)			13			

Accessories

	Trip contact blocks for flush mounting on 140-CMN (KTA 3-100) 140-CT... (KT 3-100-PF...)					Integrated short-circuit contact in 140-CUV (KT 3-100-UA) and 140-CRT (KT 3-100-AA)					
Rated thermal current I_{th} at 40 °C ambient temperature at 60 °C ambient temperature	10 A 6 A					2 A 2 A					
Contact class coordination according to NEMA (UL/CSA-standards)	AC DC	B 600 Standard Pilot Duty R 300 Light Pilot Duty				Closed 432 VA 28 VA	Open 72 VA 28 VA	max. Voltage 480 V 250 V			
Back-up fuses gl, gL	16 A					–					
Rated supply current AC-15: DC-13:	230 V 3 A 24 V 2 A	400 V 2.5 A 48 V 0.6 A	500 V 1.5 A 110 V 0.2 A	690 V 0.75 A 230 V 0.1 A	 440 V 0.04 A	AC-14: DC-13:	24 V 1.5 A 24 V 1.5 A	110 V 1.5 A 48 V 0.5 A	230 V 1.0 A 60 V 0.4 A	400 V 1.0 A 110 V 0.2 A	500 V 0.75 A
Terminal parts Type of terminals											
 fine stranded [mm²]	2 x 0.75... 2.5					2 x 0.75... 2.5					
 coarse stranded [mm²]	2 x 0.75... 2.5					2 x 0.75... 2.5					
Tightening torque [Nm]	1... 1.5					1... 1.5					
 coarse stranded [AWG]	No.. 18... 14					No.. 18... 14					
Tightening torque [lb-in]	8.8... 10.3					8.8... 10.3					
Weights [g]	31					–					

	Auxiliary contact- and trip contact blocks for flush mounting on 140M-K5F (KTA 3-160S) 140M-K-ER11 (KT 3-160-PF) and 140M-K-EA11R11- (KT 3-160-PE-PF)			Auxiliary contact- and trip contact blocks for flush mounting on 140M-M5F and 140M-P5F (KTA 3-250S and KTA 3-400S) 140M-P-ER11 (KT 3-400-PF) and 140M-P-EA11R11 (KT 3-400-PE-PF)		
Rated thermal current I_{th} at 40 °C ambient temperature at 60 °C ambient temperature	5 A 4 A			5 A 4 A		
Contact class coordination according to NEMA (UL/CSA-standards)	AC DC	–		–		
Back-up fuses gl, gL	–			–		
Rated supply current AC-15: DC-13:	110 V 3 A 48 V 0.5 A	230/240 V 2 A 110 V 0.2 A	400/415 V 1 A 230 V 0.1 A	110 V 3 A 48 V 0.5 A	230/240 V 2 A 110 V 0.2 A	400/415 V 1 A 230 V 0.1 A
Weights [g]	31 (140M-K-ER11 (KT 3-160-PF)) 52 (140M-K-EA11R11 (KT 3-160-PE-PF))			31 (140M-P-ER11 (KT 3-400-PF)) 52 (140M-P-EA11R11 (KT 3-400-PE-PF))		

Accessories

2

		Undervoltage trip for right side mounting on 140-MN (KTA 3-25) 140-UV... (KT 3-25-UA...)	Undervoltage trip for flush mounting on 140-CMN (KTA 3-100) 140-CUV... (KTA 3-100-UA...)
Actuating voltage			
Pull-in		0.8... 1.1 x U_s	0.8... 1.1 x U_s
Drop-out		0.7... 0.35 x U_s	0.7... 0.35 x U_s
On-Time		100 % ED	100 % ED
Rated control voltage	min.:	12 V 50 Hz/14 V 60 Hz	12 V 50 Hz/14 V 60 Hz
	max.:	600 V 50 Hz	600 V 50 Hz
Coil rating	Pull-in	8.5 VA, 6 W	on request
	Hold	3 VA, 1.2 W	on request
Terminal parts Type of terminals			
 fine stranded	[mm ²]	1 x 0.75... 2.5	2 x 0.75... 2.5
 coarse stranded	[mm ²]	1 x 0.75... 4	2 x 0.75... 2.5
Tightening torque		2.5	1... 1.5
 coarse stranded	[AWG]	No.. 18... 14	No.. 18... 14
Tightening torque		20... 26	8.8... 10.3
Weights	[g]	104	94

		Undervoltage trip for flush mounting on 140M-K5F (KTA 3-160S) 140M-K-U.. (KT 3-160-UA-...)	Undervoltage trip for flush mounting on 140M-M5F and 140M-P5F (KTA 3-250S and KTA 3-400S) 140M- P-U.. (KT 3-400-UA-...)
Actuating voltage			
Pull-in		0.8... 1.1 x U_s	0.8... 1.1 x U_s
Drop-out		0.7... 0.35 x U_s	0.7... 0.35 x U_s
Rated control voltage	AC	24... 415 V	24... 600 V
	DC	–	24... 250 V
Coil rating		2.7 VA	4.5 VA
		–	2.0 W
Weights	[g]	63	63

		Shunt trip for right side mounting on 140-MN (KTA 3-25) 140-RT... (KT 3-25-AA...)	Shunt trip for flush mounting on 140-CMN (KTA 3-100) 140-CRT... (KT 3-100-AA...)
Actuating voltage			
Pull-in		0.7... 1.1 x U_s	0.7... 1.1 x U_s
Drop-out		–	–
On-time		100 % ED	100 % ED
Rated control voltage	min.:	12 V 50 Hz/14 V 60 Hz	12 V 50 Hz/14 V 60 Hz
	max.:	600 V 50Hz	600 V 50 Hz
Coil rating	Pull-in	8.5 VA, 6 W	on request
	Hold	3 VA, 1.2 W	on request
Terminal parts Type of terminals			
 fine stranded	[mm ²]	1 x 0.75... 2.5	2 x 0.75... 2.5
 coarse stranded	[mm ²]	1 x 0.75... 4	2 x 0.75... 2.5
Tightening torque		2.5	1... 1.5
 coarse stranded	[AWG]	No.. 18... 14	No.. 18... 12
Tightening torque		20... 26	8.8... 10.3
Weights	[g]	100	94

Accessories

		Shunt trip for flush mounting on 140M-K5F (KTA 3-160S) 140M-K-A.. (KT 3-160-AA-...)	Shunt trip for flush mounting on 140M-M5F and 140M-P5F (KTA 3-250S and KTA 3-400S) 140M-P-A.. (KT 3-400-AA-...)
Actuating voltage		0.5... 1.1 x U_S	0.5... 1.1 x U_S
Pull-in		–	–
Drop-out		–	–
Rated control voltage	AC	24... 500 V	24... 600 V
	DC	24... 250 V	24... 250 V
Coil rating		330 VA	380 VA
		330 W	380 W
Weights	[g]	64	64

Current limiter 140-CL2 (KTL 3-65-N)

Rated insulation voltage	690 V
Continuous current	65 A

Rated short-circuit breaking capacity I_{cn}

Thermal release	Magnetic release	Circuit-breaker 140-MN (KTA 3-25)								Circuit-breaker 140-MN (KTA 3-25) with Current limiter							
		Breaking capacity I_{cn} Coordination according to IEC 947-2, 40... 60 Hz at:								Breaking capacity I_{cn} Coordination according to IEC 947-2, 40... 60 Hz at							
		230/240 V		400/415 V		500 V		690 V		230/240 V		400/415 V		500 V		690 V	
Setting range	Pick-up current	I_{cu}	I_{cs}	I_{cu}	I_{cs}	I_{cu}	I_{cs}	I_{cu}	I_{cs}	I_{cu}	I_{cs}	I_{cu}	I_{cs}	I_{cu}	I_{cs}	I_{cu}	I_{cs}
[A]	[A]	[kA]	[kA]	[kA]	[kA]	[kA]	[kA]	[kA]	[kA]	[kA]	[kA]	[kA]	[kA]	[kA]	[kA]	[kA]	[kA]
0.1 ... 0.16	1.8	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
0.16 ... 0.25	2.8	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
0.25 ... 0.4	4.4	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
0.4 ... 0.63	6.9	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
0.63 ... 1.0	11	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
1.0 ... 1.6	18	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
1.6 ... 2.5	28	100	100	100	100	100	100	4.5	4.5	100	100	100	100	100	100	4.5	4.5
2.5 ... 4.0	44	100	100	100	100	100	100	8	6	100	100	100	100	100	100	8	6
4.0 ... 6.3	69	100	100	100	100	30	20	8	6	100	100	100	100	50	50	8	6
6.3 ... 10	110	100	100	20	16	6	6	4.5	3	100	100	50	50	50	50	4.5	3
10 ... 16	176	30	20	10	6	6	4.5	3	3	50	50	50	50	20	20	3	3
16 ... 20	220	20	16	8	6	6	4.5	3	3	50	50	50	50	10	4.5	3	3
20 ... 25	275	20	16	8	6	6	4.5	3	3	50	50	50	50	10	4.5	3	3

Terminal parts

Type of terminals

			No. 2, 4, 6 (top)	No. 1, 3, 5 (bottom)
	fine stranded	[mm ²]	 1 x 0.75... 4	 1 x 4... 16
	coarse stranded	[mm ²]	1 x 0.75... 6	1 x 6... 25
	Tightening torque	[Nm]	2.5	2.5
	coarse stranded	[AWG]	No.. 14... 10	No.. 14... 6
	Tightening torque	[lb-in]	25... 29	20... 26
Weights	[g]		210	

I_{cs} Rated Short-circuit-breaking capacity

I_{cu} Short-circuit breaking capacity limit

Performance categories coordination according to IEC 947-2:

I_{cu} still able to function following test O-t-CO

I_{cs} Fully serviceable following test O-t-CO-t-CO

O = Open

CO = Reclose and open

t = Defined interval

Accessories

		Terminal blocks 140-LD (KT 3-25-A2)		Terminal blocks 140-L2 (KT 3-25-A3)
Terminal parts		No.. 2, 4, 6 (oben)	No.. 1, 3, 5 (bottom)	No.. 1, 3, 5
Type of terminals				
	fine stranded [mm ²]	1 x 0.75... 4	1 x 4... 16	1 x 4... 16
	coarse stranded [mm ²]	1 x 0.75... 6	1 x 6... 25	
	Tightening torque [Nm]	2.5	2.5	4
	coarse stranded [AWG]	No.. 14... 10	No.. 14... 6	No.. 14... 6
	Tightening torque [lb-in]	25... 29	20... 26	36
Weights [g]		151		36

		Compact bus-bars 140-L45... (KT 3-25-DB-45-...)		Compact bus-bars 140-L1... (KT 3-25-DB-54-...)	
Rated isolation voltage		690 V		690 V	
Rated thermal current I_{th}		63 A		63 A	
Weights [g]		42	140-L452 (KT 3-25-DB-45-2)	45	140-L12 (KT 3-25-DB-54-2)
		69	140-L453 (KT 3-25-DB-45-3)	76	140-L13 (KT 3-25-DB-54-3)
		94	140-L454 (KT 3-25-DB-45-4)	104	140-L11 (KT 3-25-DB-54-4)
		119	140-L455 (KT 3-25-DB-45-5)	135	140-L1 (KT 3-25-DB-54-5)

		Blank space cover 140-L3 (KT 3-25-DBA)	
Weight [g]		3.3	

		Enclosure 140-E41 (KT 3-25-KA)	Enclosure 140-E55 (KT 3-25-KAZ)
Protection class		IP41	IP55 (with seal and protective diaphragm)
Ambient temperature		- 25 ...+ 40 °C	- 25 ...+ 40 °C
Weights [g]		250	258

		Button membrane 140-N18 (KT 3-25-DM)	
Weight [g]		8	

		Indicator light 140-L... (KT 3-25-DL...)	
Protection class		IP54	
Ambient temperature		120 V, 240 V, 400 V	
Weight [g]		10	

		Locking arrangement 140-N22 (KT 3-25-DS)	Locking arrangement 140-N24 (KT 3-25-DSC)	Screw adapter 140-N12 (KT 3-25-AS)
Weights [g]		19	11	16

		Lockable rotary handle 140-K... (KT 3-100-K..)	Lockable rotary handle 140-..K. (KT 3-...H..)
Weights [g]		20	400

		Complete door coupling assembly 140M-K-D54N (KT 3-160-HRB)	Complete door coupling assembly 140M-P-D54N (KT 3-400-HRB)
Weights [g]		1000	1100

		Replacement shaft 140M-P-DS (KT 3-400-HTA)	
Weight [g]		290	

		Locking arrangement for toggle for 140M-K5F (KTA 3-160S) 140M-K-M (KT 3-160-DSA)	Locking arrangement for toggle for 140M-M5F and 140M-P5F (KTA 3-250S and KTA 3-400S) 140M-P-M (KT 3-400-DS)
Weights [g]		30	30

Accessories

2

	Remote operators for 140M-K5F (KTA 3-160S) 140M-K-PF (KT 3-160-FA)	Remote operators for 140M-M5F (KTA 3-250S) 140M-M-PF (KT 3-250-FA)	Remote operators for 140M-P5F (KTA 3-400S) 140M-P-PF (KT 3-400-FA)
Rated actuating voltage U_s			
AC	110... 125 V, 230 V	110... 125 V, 230 V	110... 125 V, 230 V
DC	110... 125 V, 230 V	110... 125 V, 230 V	110... 125 V, 230 V
Operating range			
Making operation	0.85... 1.1 x U_s	0.85... 1.1 x U_s	0.85... 1.1 x U_s
Power input			
AC	1200 VA	1200 VA	2000 VA
DC	1200 W	1200 W	2000 W
Total closing time	≤ 100 ms	≤ 100 ms	≤ 100 ms
Total breaking time	≤ 50 ms	≤ 50 ms	≤ 50 ms
Reset time	≤ 50 ms	≤ 50 ms	≤ 50 ms
Weights	[g] 2300	2500	5100
Locking arrangement for all remote operators 140M-P-Q (KT 3-400-FA-DS)			
Weight	[g] 10		
	Terminal cover for 140M-K5F (KTA 3-160S) 140M-K-C (KT 3-160-HA)	Terminal cover for 140M-M5F (KTA 3-250S) 140M-M-C (KT 3-250-HA)	Terminal cover for 140M-P5F (KTA 3-400S) 140M-P-C (KT 3-400-HA)
Weights	[g] 30	30	30

Circuit-Breaker (Bulletin 140) / Contactor (Bulletin 100-M, Bulletin 100-C, Bulletin CAB6) Coordination Table

Type “1” Coordination according to IEC 947-4-1

Possible Short-circuit Current $I_q = 50$ kA

Voltage: 400/415 V, 50 Hz

Standard motors AC-3 at 400/415 V		Circuit-breaker	Thermal overload release Setting range	Magnetic release Response current	Current limiter	Mini-contactor	I_{AC-3}	Contactor	I_{AC-3}
[kW]	[A]	Cat. No.	[A]	[A]	Cat. No.	Cat. No.	[A]	Cat. No.	[A]
0.06	0.30	140-MN-0040	0.25... 0.40	4.4		100-M05	5.3	100-C09	9.0
0.09	0.40	140-MN-0040	0.25... 0.40	4.4		100-M05	5.3	100-C09	9.0
0.12	0.50	140-MN-0063	0.40... 0.63	6.9		100-M05	5.3	100-C09	9.0
0.19	0.70	140-MN-0100	0.63... 1.00	11.0		100-M05	5.3	100-C09	9.0
0.25	0.90	140-MN-0100	0.63... 1.00	11.0		100-M05	5.3	100-C09	9.0
0.37	1.20	140-MN-0160	1.00... 1.60	18.0		100-M05	5.3	100-C09	9.0
0.55	1.60	140-MN-0160	1.00... 1.60	18.0		100-M05	5.3	100-C09	9.0
0.75	2.00	140-MN-0250	1.60... 2.50	28.0		100-M05	5.3	100-C09	9.0
1.10	2.80	140-MN-0400	2.50... 4.00	44.0		100-M05	5.3	100-C09	9.0
1.50	3.70	140-MN-0400	2.50... 4.00	44.0		100-M05	5.3	100-C09	9.0
2.20	5.30	140-MN-0630	4.00... 6.30	69.0		100-M09	9.0	100-C09	9.0
3.00	7.00	140-MN-1000	6.30... 10.00	110.0				100-C09	9.0
4.00	9.00	140-MN-1000	6.30... 10.00	110.0				100-C09	9.0
5.50	12.00	140-MN-1600	10.00... 16.00	176.0	140-CL2			100-C12	12.0
7.50	16.00	140-MN-1600	10.00... 16.00	176.0	140-CL2			100-C16	16.0
9.00	20.00	140-MN-2000	16.00... 20.00	220.0	140-CL2			100-C23	23.0
11.00	23.00	140-MN-2500	20.00... 25.00	275.0	140-CL2			100-C23	23.0
15.00	30.00	140-CMN-4000 ①	25.00... 40.00	560.0				100-C30	30.0
18.50	37.00	140-CMN-4000 ①	25.00... 40.00	560.0				100-C37	37.0
22.00	43.00	140-CMN-6300 ①	40.00... 63.00	882.0				100-C43	43.0
30.00	59.00	140-CMN-6300 ①	40.00... 63.00	882.0				100-C60	59.0
37.00	72.00	140-CMN-9000 ①	63.00... 90.00	1260.0				100-C72	72.0
45.00	85.00	140-CMN-9000 ①	63.00... 90.00	1260.0				100-C85	85.0
45.00	85.00	140M-K5F-D10 ①	80.00... 100.00	600.0... 1200.0				CAB6-85	85.0
55.00	105.00	140M-K5F-D12 ①	100.00... 125.00	750.0... 1500.0				CAB6-105 (-EI)	105.0
75.00	140.00	140M-K5F-D16 ①	125.00... 160.00	950.0... 1900.0				CAB6-140-EI	140.0
90.00	170.00	140M-M5F-D20	160.00... 200.00	1200.0... 2400.0				CAB6-170-EI	170.0
110.00	210.00	140M-M5F-D25	200.00... 250.00	1500.0... 3000.0				CAB6-210-EI	210.0
132.00	250.00	140M-M5F-D25	200.00... 250.00	1500.0... 3000.0				CAB6-250-EI	250.0
160.00	300.00	140M-P5F-D32	250.00... 320.00	1900.0... 3800.0				CAB6-300-EI	300.0
200.00	380.00	140M-P5F-D40	320.00... 400.00	2400.0... 4800.0				CAB6-420-EI	420.0

① $I_q = 65$ kA

Definition of Type “1” Coordination according to IEC 947-4-1:

- The contactor or the starter must not endanger persons or systems in the event of a short-circuit.
- The contactor or the starter need not be suitable for continued operation without repairs and parts replacement.
- Damage to the contactor and the overload relay are permissible.

Type “2” Coordination according to IEC 947-4-1

Possible Short-circuit Current $I_q = 50 \text{ kA}$

Voltage: 400/415 V, 50 Hz

Standard motors AC-3 at 400/415 V		Circuit-breaker	Thermal overload release Setting range	Magnetic release Response current	Current Limiter	Mini-contactor	I_{AC-3}	Contactor	I_{AC-3}
[kW]	[A]	Cat. No.	[A]	[A]	Cat. No.	Cat. No.	[A]	Cat. No.	[A]
0.06	0.30	140-MN-0040	0.25... 0.40	4.4		100-M05	5.3	100-C09	9.0
0.09	0.40	140-MN-0040	0.25... 0.40	4.4		100-M05	5.3	100-C09	9.0
0.12	0.50	140-MN-0063	0.40... 0.63	6.9		100-M05	5.3	100-C09	9.0
0.19	0.70	140-MN-0100	0.63... 1.00	11.0		100-M05	5.3	100-C09	9.0
0.25	0.90	140-MN-0100	0.63... 1.00	11.0		100-M05	5.3	100-C09	9.0
0.37	1.20	140-MN-0160	1.00... 1.60	18.0		100-M05	5.3	100-C09	9.0
0.55	1.60	140-MN-0160	1.00... 1.60	18.0		100-M05	5.3	100-C09	9.0
0.75	2.00	140-MN-0250	1.60... 2.50	28.0		100-M05	5.3	100-C09	9.0
1.10	2.80	140-MN-0400	2.50... 4.00	44.0				100-C16	16.0
1.50	3.70	140-MN-0400	2.50... 4.00	44.0				100-C16	16.0
2.20	5.30	140-MN-0630	4.00... 6.30	69.0				100-C30	30.0
3.00	7.00	140-MN-1000	6.30... 10.00	110.0	140-CL2			100-C16	16.0
3.00	7.00	140-MN-1000	6.30... 10.00	110.0				100-C30	30.0
4.00	9.00	140-MN-1000	6.30... 10.00	110.0	140-CL2			100-C16	16.0
4.00	9.00	140-MN-1000	6.30... 10.00	110.0				100-C30	30.0
5.50	12.00	140-MN-1600	10.00... 16.00	176.0	140-CL2			100-C30	30.0
7.50	16.00	140-MN-1600	10.00... 16.00	176.0	140-CL2			100-C30	30.0
9.00	20.00	140-MN-2000	16.00... 20.00	220.0	140-CL2			100-C30	30.0
11.00	23.00	140-MN-2500	20.00... 25.00	275.0	140-CL2			100-C30	30.0
15.00	30.00	140-CMN-4000 ①	25.00... 40.00	560.0				100-C30	30.0
18.50	37.00	140-CMN-4000 ①	25.00... 40.00	560.0				100-C37	37.0
22.00	43.00	140-CMN-6300 ①	40.00... 63.00	882.0				100-C43	43.0
30.00	59.00	140-CMN-6300 ①	40.00... 63.00	882.0				100-C60	60.0
37.00	72.00	140-CMN-9000 ①	63.00... 90.00	1260.0				100-C72	72.0
45.00	85.00	140-CMN-9000 ①	63.00... 90.00	1260.0				100-C85	85.0
45.00	85.00	140M-K5F-D10 ①	80.00... 100.00	600.0... 1200.0				CAB6-85	85.0
55.00	105.00	140M-K5F-D12 ①	100.00... 125.00	750.0... 1500.0				CAB6-105 (-EI)	105.0
75.00	140.00	140M-K5F-D16 ①	125.00... 160.00	950.0... 1900.0				CAB6-140-EI	140.0
90.00	170.00	140M-M5F-D20	160.00... 200.00	1200.0... 2400.0				CAB6-170-EI	170.0
110.00	210.00	140M-M5F-D25	200.00... 250.00	1500.0... 3000.0				CAB6-210-EI	210.0
132.00	250.00	140M-M5F-D25	200.00... 250.00	1500.0... 3000.0				CAB6-250-EI	250.0
160.00	300.00	140M-P5F-D32	250.00... 320.00	1900.0... 3800.0				CAB6-300-EI	300.0
200.00	380.00	140M-P5F-D40	320.00... 400.00	2400.0... 4800.0				CAB6-420-EI	420.0

① $I_q = 65 \text{ kA}$

Definition Type “2” Coordination according to IEC 947-4-1:

- The contactor or the starter must not endanger persons or systems in the event of a short-circuit.
- The contactor or the starter must be suitable for further use.
- No damage to the overload relay or other parts may occur with the exception of welding of the contactor or starter contacts provided that these can be easily separated without significant deformation (such as with a screwdriver).

In the event of short-circuit, fast opening, current limiting 140 / KTA 3 circuit breakers make it possible to build economical, fully short-circuit coordinated starter combinations in accordance with IEC 947-4-1, coordination type “2”. In many cases equipment is usually selected according to the rated motor current (without overrating the contactor).

Circuit-breaker (KTA 3) / Contactor (Bulletin 100-M, Bulletin 100-C, CA 6) Coordination Table

Type “1” Coordination according to IEC 947-4-1

Possible Short-circuit Current $I_q = 50$ kA

Voltage: 400/415 V, 50 Hz

Standard motors AC-3 at 400/415 V		Circuit-breaker	Thermal overload release Setting range	Magnetic release Response current	Current Limiter	Mini-Contactor	I_{AC-3}	Contactor	I_{AC-3}
[kW]	[A]	Type Ref.	[A]	[A]	Type Ref.	Cat. No.	[A]	Cat. No. / Type Ref.	[A]
0.06	0.30	KTA 3-25-0.4A	0.25... 0.40	4.4		100-M05	5.0	100-C09	9.0
0.09	0.40	KTA 3-25-0.4A	0.25... 0.40	4.4		100-M05	5.0	100-C09	9.0
0.12	0.50	KTA 3-25-0.63A	0.40... 0.63	6.9		100-M05	5.0	100-C09	9.0
0.19	0.70	KTA 3-25-1A	0.63... 1.00	11.0		100-M05	5.0	100-C09	9.0
0.25	0.90	KTA 3-25-1A	0.63... 1.00	11.0		100-M05	5.0	100-C09	9.0
0.37	1.20	KTA 3-25-1.6A	1.00... 1.60	18.0		100-M05	5.0	100-C09	9.0
0.55	1.60	KTA 3-25-1.6A	1.00... 1.60	18.0		100-M05	5.0	100-C09	9.0
0.75	2.00	KTA 3-25-2.5A	1.60... 2.50	28.0		100-M05	5.0	100-C09	9.0
1.10	2.80	KTA 3-25-4A	2.50... 4.00	44.0		100-M05	5.0	100-C09	9.0
1.50	3.70	KTA 3-25-4A	2.50... 4.00	44.0		100-M05	5.0	100-C09	9.0
2.20	5.30	KTA 3-25-6.3A	4.00... 6.30	69.0		100-M09	9.0	100-C09	9.0
3.00	7.00	KTA 3-25-10A	6.30... 10.00	110.0				100-C09	9.0
4.00	9.00	KTA 3-25-10A	6.30... 10.00	110.0				100-C09	9.0
5.50	12.00	KTA 3-25-16A	10.00... 16.00	176.0	KTL-3-65-N			100-C12	12.0
7.50	16.00	KTA 3-25-16A	10.00... 16.00	176.0	KTL-3-65-N			100-C16	16.0
9.00	20.00	KTA 3-25-20A	16.00... 20.00	220.0	KTL-3-65-N			100-C23	23.0
11.00	23.00	KTA 3-25-25A	20.00... 25.00	275.0	KTL-3-65-N			100-C23	23.0
15.00	30.00	KTA 3-100-40A ❶	25.00... 40.00	560.0				100-C30	30.0
18.50	37.00	KTA 3-100-40A ❶	25.00... 40.00	560.0				100-C37	37.0
22.00	43.00	KTA 3-100-63A ❶	40.00... 63.00	882.0				100-C43	43.0
30.00	59.00	KTA 3-100-63A ❶	40.00... 63.00	882.0				100-C60	59.0
37.00	72.00	KTA 3-100-90A ❶	63.00... 90.00	1260.0				100-C72	72.0
45.00	85.00	KTA 3-100-90A ❶	63.00... 90.00	1260.0				100-C85	85.0
45.00	85.00	KTA 3-160S-100A ❶	80.00... 100.00	600.0... 1200.0				CA 6-85	85.0
55.00	105.00	KTA 3-160S-125A ❶	100.00... 125.00	750.0... 1500.0				CA 6-105 (-EI)	105.0
75.00	140.00	KTA 3-160S-160A ❶	125.00... 160.00	950.0... 1900.0				CA 6-140-EI	140.0
90.00	170.00	KTA 3-250S-200A	160.00... 200.00	1200.0... 2400.0				CA 6-170-EI	170.0
110.00	210.00	KTA 3-250S-250A	200.00... 250.00	1500.0... 3000.0				CA 6-210-EI	210.0
132.00	250.00	KTA 3-250S-250A	200.00... 250.00	1500.0... 3000.0				CA 6-250-EI	250.0
160.00	300.00	KTA 3-400S-320A	250.00... 320.00	1900.0... 3800.0				CA 6-300-EI	300.0
200.00	380.00	KTA 3-400S-400A	320.00... 400.00	2400.0... 4800.0				CA 6-420-EI	420.0

❶ $I_q = 65$ kA

Definition of Type “1” Coordination according to IEC 947-4-1:

- The contactor or the starter must not endanger persons or systems in the event of a short-circuit.
- The contactor or the starter need not be suitable for continued operation without repairs and parts replacement.
- Damage to the contactor and the overload relay are permissible.

Type “2” Coordination according to IEC 947-4-1

Possible Short-circuit Current $I_q = 50 \text{ kA}$

Voltage: 400/415 V, 50 Hz

Standard motors AC-3 at 400/415 V		Circuit-breaker	Thermal overload release Setting range	Magnetic release Response current	Current Limiter	Mini-contactor	I_{AC-3}	Contactor	I_{AC-3}
[kW]	[A]	Type Ref.	[A]	[A]	Type Ref.	Type Ref.	[A]	Type Ref.	[A]
0.06	0.30	KTA 3-25-0.4A	0.25... 0.40	4.4		100-M05	5.3	100-C09	9.0
0.09	0.40	KTA 3-25-0.4A	0.25... 0.40	4.4		100-M05	5.3	100-C09	9.0
0.12	0.50	KTA 3-25-0.63A	0.40... 0.63	6.9		100-M05	5.3	100-C09	9.0
0.19	0.70	KTA 3-25-1A	0.63... 1.00	11.0		100-M05	5.3	100-C09	9.0
0.25	0.90	KTA 3-25-1A	0.63... 1.00	11.0		100-M05	5.3	100-C09	9.0
0.37	1.20	KTA 3-25-1.6A	1.00... 1.60	18.0		100-M05	5.3	100-C09	9.0
0.55	1.60	KTA 3-25-1.6A	1.00... 1.60	18.0		100-M05	5.3	100-C09	9.0
0.75	2.00	KTA 3-25-2.5A	1.60... 2.50	28.0		100-M05	5.3	100-C09	9.0
1.10	2.80	KTA 3-25-4A	2.50... 4.00	44.0				100-C16	16.0
1.50	3.70	KTA 3-25-4A	2.50... 4.00	44.0				100-C16	16.0
2.20	5.30	KTA 3-25-6.3A	4.00... 6.30	69.0				100-C30	30.0
3.00	7.00	KTA 3-25-10A	6.30... 10.00	110.0	KTL-3-65-N			100-C16	16.0
3.00	7.00	KTA 3-25-10A	6.30... 10.00	110.0				100-C30	30.0
4.00	9.00	KTA 3-25-10A	6.30... 10.00	110.0	KTL-3-65-N			100-C16	16.0
4.00	9.00	KTA 3-25-10A	6.30... 10.00	110.0				100-C30	30.0
5.50	12.00	KTA 3-25-16A	10.00... 16.00	176.0	KTL-3-65-N			100-C30	30.0
7.50	16.00	KTA 3-25-16A	10.00... 16.00	176.0	KTL-3-65-N			100-C30	30.0
9.00	20.00	KTA 3-25-20A	16.00... 20.00	220.0	KTL-3-65-N			100-C30	30.0
11.00	23.00	KTA 3-25-25A	20.00... 25.00	275.0	KTL-3-65-N			100-C30	30.0
15.00	30.00	KTA 3-100-40A ①	25.00... 40.00	560.0				100-C30	30.0
18.50	37.00	KTA 3-100-40A ①	25.00... 40.00	560.0				100-C37	37.0
22.00	43.00	KTA 3-100-63A ①	40.00... 63.00	882.0				100-C43	43.0
30.00	59.00	KTA 3-100-63A ①	40.00... 63.00	882.0				100-C60	60.0
37.00	72.00	KTA 3-100-90A ①	63.00... 90.00	1260.0				100-C72	72.0
45.00	85.00	KTA 3-100-90A ①	63.00... 90.00	1260.0				100-C85	85.0
45.00	85.00	KTA 3-160S-100A ①	80.00... 100.00	600.0... 1200.0				CA 6-85	85.0
55.00	105.00	KTA 3-160S-125A ①	100.00... 125.00	750.0... 1500.0				CA 6-105 (-EI)	105.0
75.00	140.00	KTA 3-160S-160A ①	125.00... 160.00	950.0... 1900.0				CA 6-140-EI	140.0
90.00	170.00	KTA 3-250S-200A	160.00... 200.00	1200.0... 2400.0				CA 6-170-EI	170.0
110.00	210.00	KTA 3-250S-250A	200.00... 250.00	1500.0... 3000.0				CA 6-210-EI	210.0
132.00	250.00	KTA 3-250S-250A	200.00... 250.00	1500.0... 3000.0				CA 6-250-EI	250.0
160.00	300.00	KTA 3-400S-320A	250.00... 320.00	1900.0... 3800.0				CA 6-300-EI	300.0
200.00	380.00	KTA 3-400S-400A	320.00... 400.00	2400.0... 4800.0				CA 6-420-EI	420.0

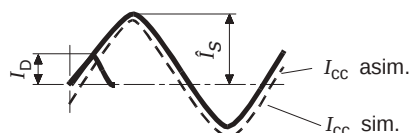
① $I_q = 65 \text{ kA}$

Definition Type “2” Coordination according to IEC 947-4-1:

- The contactor or the starter must not endanger persons or systems in the event of a short-circuit.
- The contactor or the starter must be suitable for further use.
- No damage to the overload relay or other parts may occur with the exception of welding of the contactor or starter contacts provided that these can be easily separated without significant deformation (such as with a screwdriver).

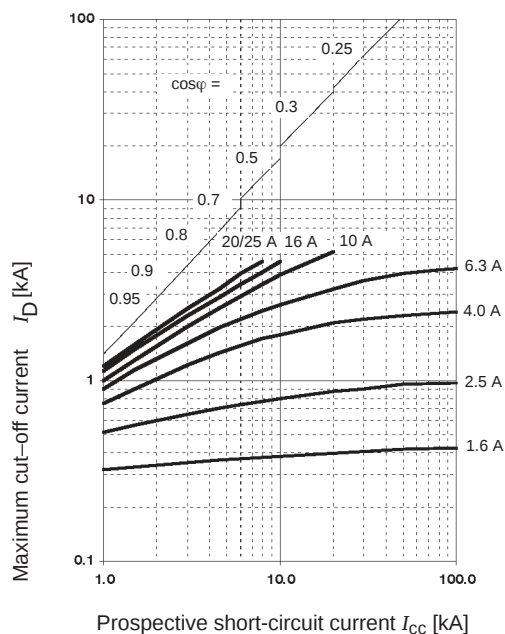
In the event of short-circuit, fast opening, current limiting 140 / KTA 3 circuit breakers make it possible to build economical, fully short-circuit coordinated starter combinations in accordance with IEC 947-4-1, coordination type “2”. In many cases equipment is usually selected according to the rated motor current (without overrating the contactor).

Cut-off Current



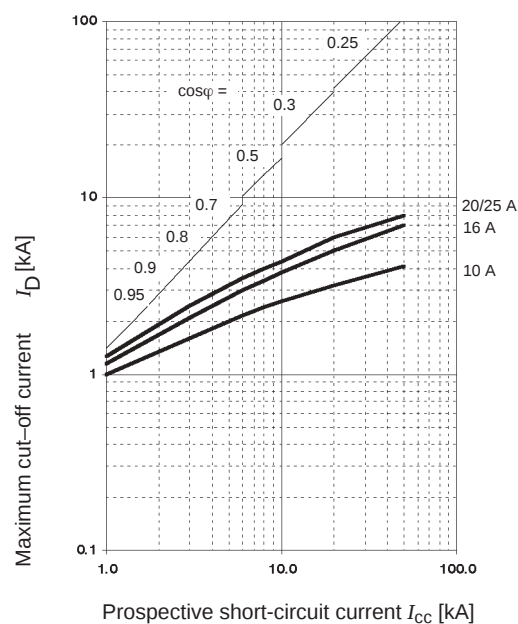
Circuit-breaker 140-MN (KTA 3-25)

Maximum cut-off current
 Rated operating voltage 400 V



Circuit-breaker 140-MN (KTA 3-25) with current limiter 140-CL2 (KTL 3-65-N)

Maximum cut-off current
 Rated operating voltage 400 V

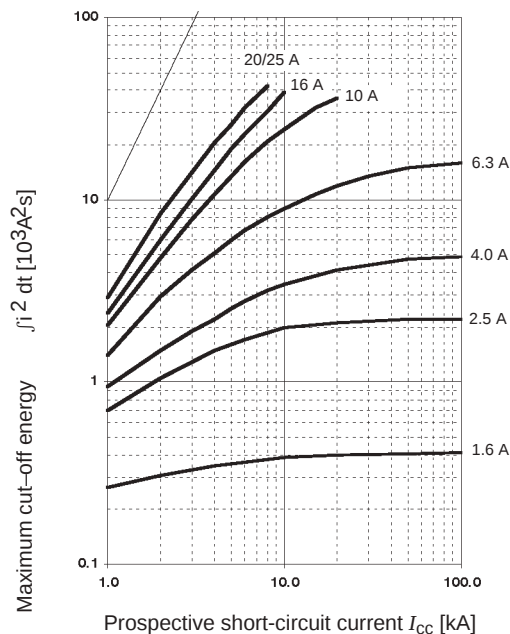


The prospective short-circuit current I_{cc} is effectively limited by the 140-MN (KTA 3-25) circuit-breaker.

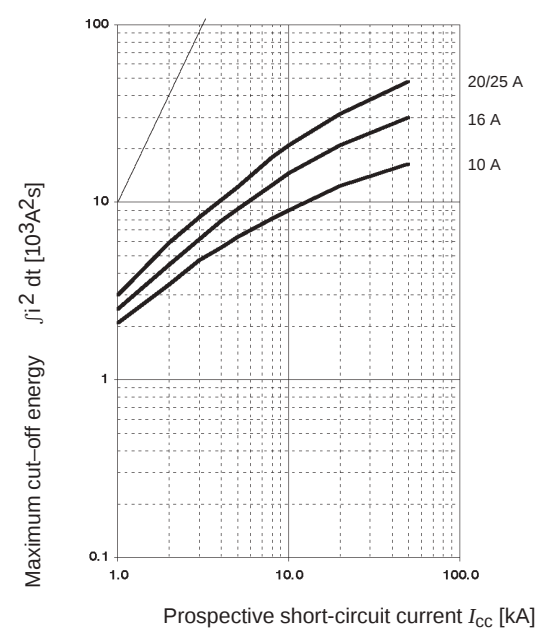
I_D is the maximum value of the cut-off current (instantaneous peak value of the limited let-through current).

The value as a function of the prospective short-circuit current is shown in the diagrams

Maximum cut-off energy
 Rated operating voltage 400 V

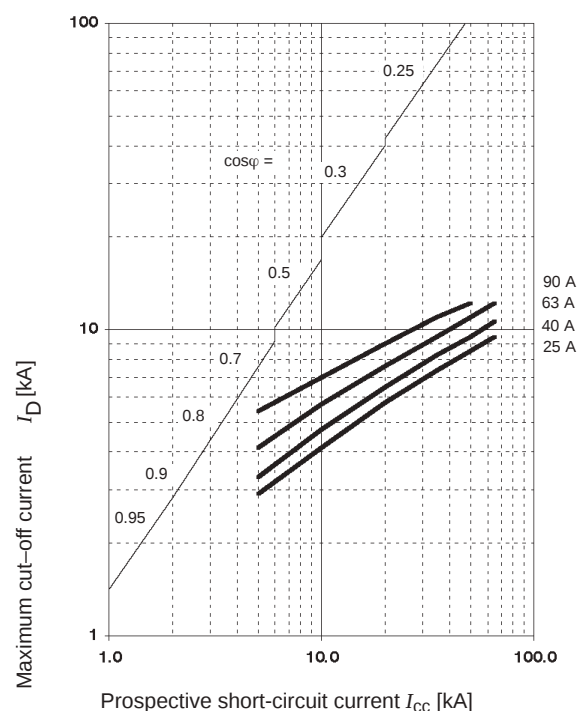


Maximum cut-off energy
 Rated operating voltage 400 V

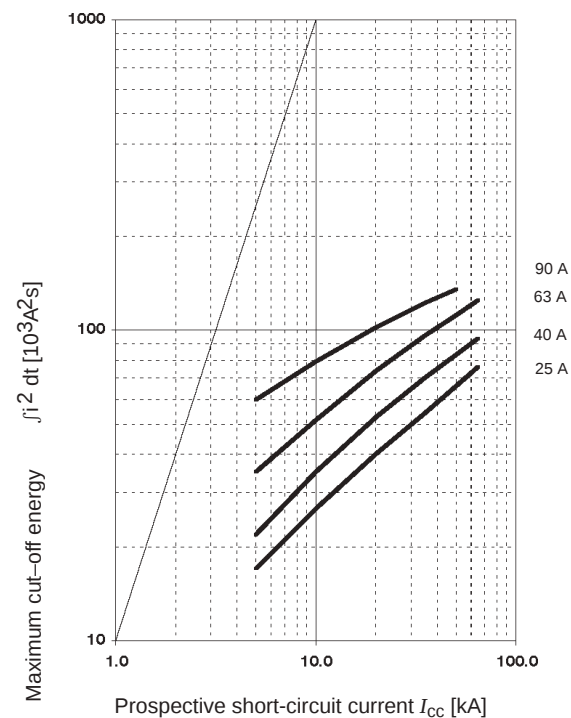


Circuit-breaker 140-CMN (KTA 3-100)

Maximum cut-off current
 Rated operating voltage 415 V

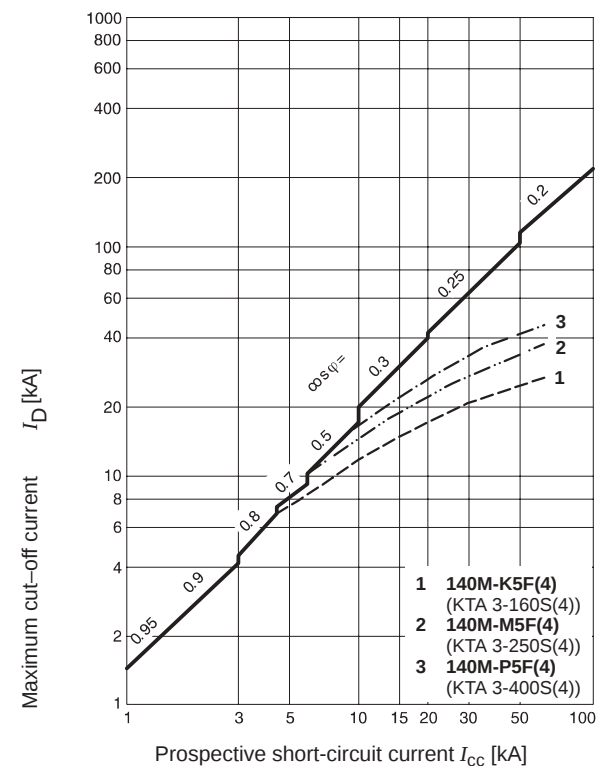


Maximum cut-off energy
 Rated operating voltage 415 V

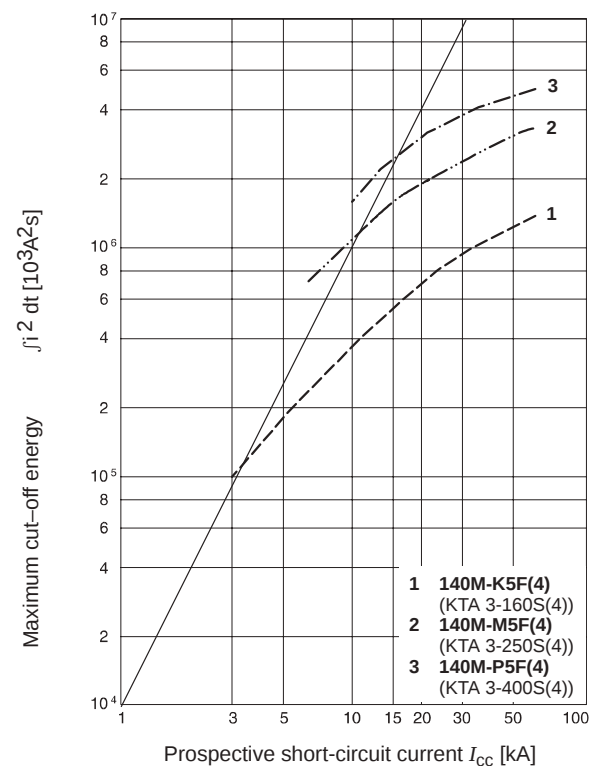


Circuit-breaker 140M-K5F... 140-P5F (KTA 3-160S... KTA 3-400S)

Maximum cut-off current
 Rated operating voltage 400 V

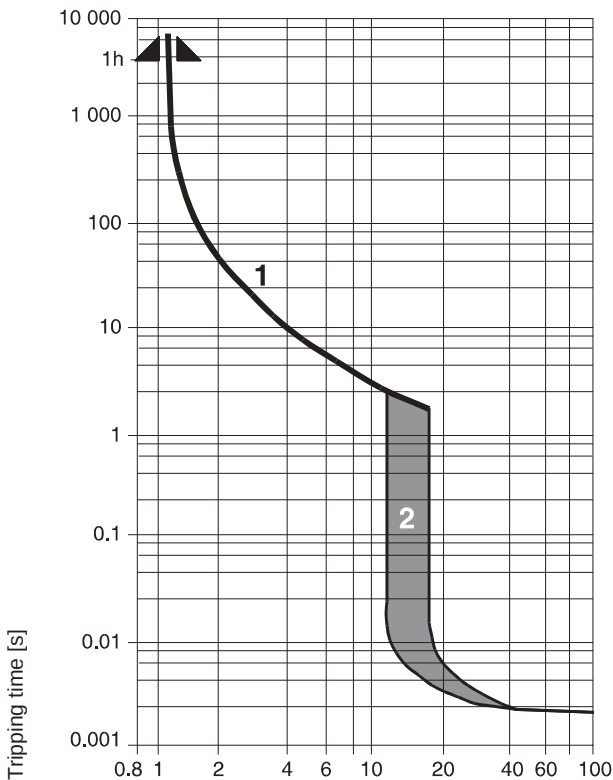


Maximum cut-off energy
 Rated operating voltage 400 V



Time / Current Characteristic

Circuit-breaker 140-MN (KTA 3-25)



Multiple of the set current I_{eF}

1) Thermal release trip current:

The adjustable inverse bimetal trip reliably protects motors against overloads. The curve shows the mean operating current at an ambient of 20 °C starting from cold. Careful testing and setting ensures effective motor protection even in the case of single-phasing.

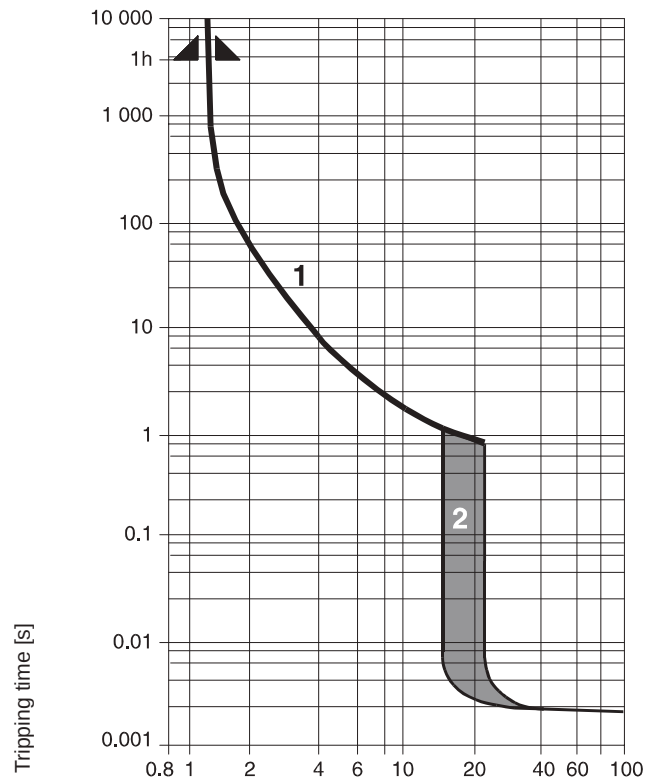
Protection of EEx ell motors:

A requirement of the German standard VDE 0165/83 is that the operating time of a thermal overload trip starting from cold must be less than the permissible heating time t_E of the motor.

The relevant time / current characteristics must be available at the place of installation. If necessary, they can be obtained from the local sales office. According to VDE 0165/83, clause 6.1.4.3.3., motor protection devices in new installations must provide protection even if one of the external connections is interrupted.

140-MN (KTA 3-25) circuit-breaker fulfils this requirement for motors with ratings up to 3 kW. Additional protection must be provided to comply with it and also the requirement relating to the interruption of an external connection for motors with ratings higher than 3 kW. 140-CMN (KTA 3-100) circuit-breakers fulfill both requirements for all motor ratings.

Circuit-breaker 140-CMN (KTA 3-100)



Multiple of the set current I_{eF}

2) Magnetic release trip current:

The instantaneous magnetic trip has a fixed operating current setting. This corresponds to 11 times the highest setting of the thermal overload trip.

At the upper thermal release setting, this tripping current is 11 times (140-MN / KTA 3-25 circuit-breaker) or 14 times (140-CMN / KTA 3-100 circuit-breaker) the set current; at a lower setting it is correspondingly higher.

Current setting I_{eF} :

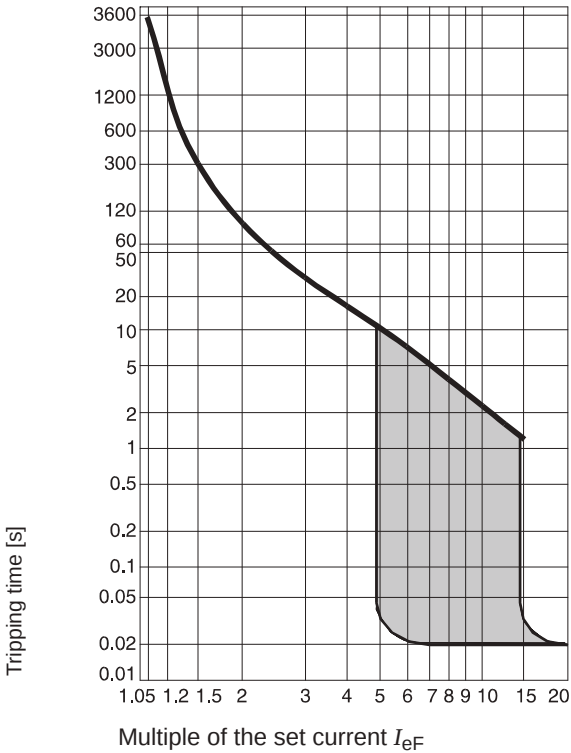
The overload trip corresponds to a thermal overload relay in a motor starter conforming to IEC 292-1. If a different value is prescribed (e.g. reduced I_e for cooling medium having a temperature higher than 40 °C or a place of installation higher than 2000 m above sea level), the setting current is equal to the reduced rated current I_e of the motor.

Note:

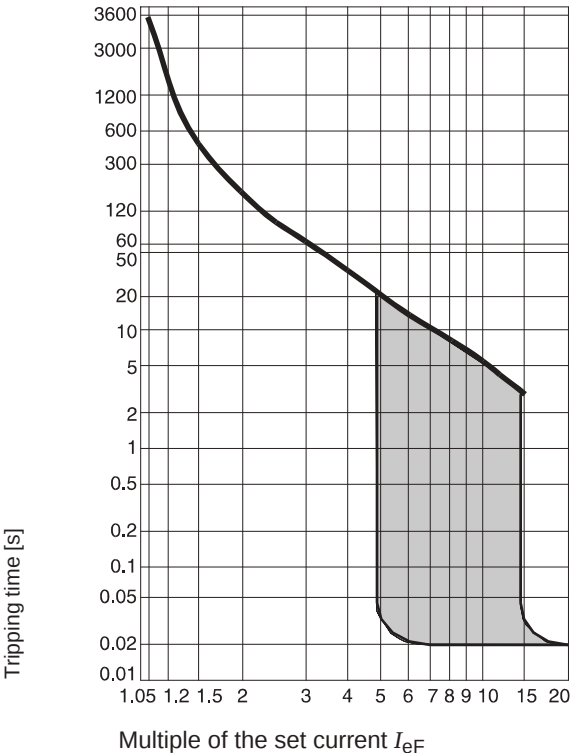
The Bulletin 140 is only used for short-circuit protection in certain applications. The overload protection is provided by a thermal overload relay. Typical examples are variable speed motors, star / delta starters for heavy duty (high inertia) starting and / or an inadequately rated motor feeder.

To ensure that only the downstream thermal overload relay trips, the set current I_{eF} on the Bulletin 140 must be increased by 20 %.

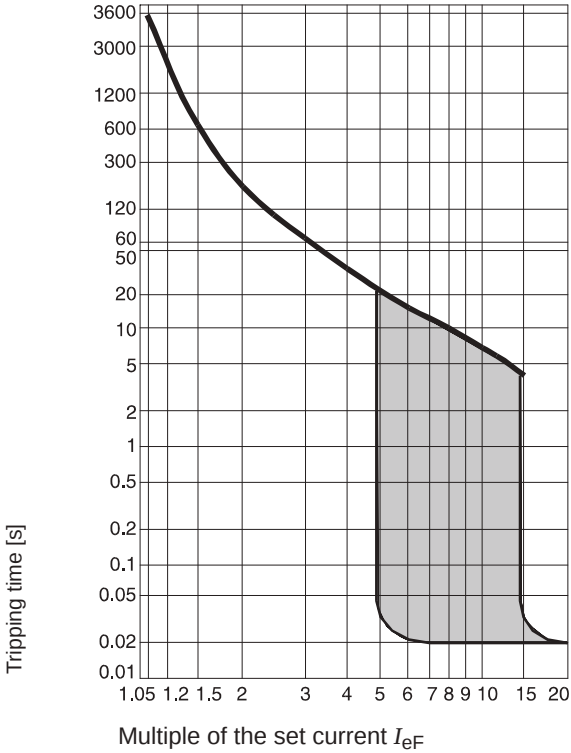
140M-K5F(4) (KTA 3-160S(4))



140M-M5F(4) (KTA 3-250S(4))



140M-P5F(4) (KTA 3-400S(4))



The time / current characteristic curves showing the mean value at an ambient temperature of 25 °C starting from cold. The permissible variation is $\pm 25\%$ of the mean value.

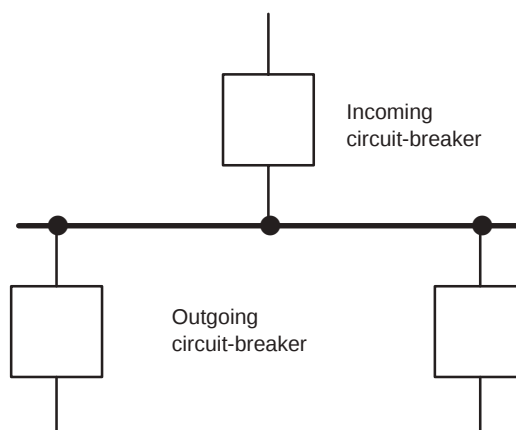
Protection of PVC Insulated Cables against Overload and Short-Circuits

	Minimum Cu cross-section protected at 400 V 50 Hz							Conforming to IEC 364 and CENELEC-harmonisation document 384-3 und 384-4.
	10 mm ²	6 mm ²	4 mm ²	2.5 mm ²	1.5 mm ²	1 mm ²	0.75 mm ²	
140-MN-0400 (KTA 3-25-4A)		●	●	●	●	●	●	The overload protection on Bulletin 140 circuit-breakers is an adjustable thermal trip. The maximum trip current is considerably lower than when using fuses for overload protection. Short-circuit protection is provided by a magnetic trip having a fixed setting. It opens the main contacts at high speed. The lower total rupture time reduces the temperature rise of the conductors due to the fault.
140-MN-0630 (KTA 3-25-6.3A)		●	●	●	●	●	●	
140-MN-1000 (KTA 3-25-10A)		●	●	●	●	●	–	
140-MN-1600 (KTA 3-25-16A)		●	●	●	●	–	–	
140-MN-2000 (KTA 3-25-20A)		●	●	●	–	–	–	
140-MN-2500 (KTA 3-25-25A)		●	●	●	–	–	–	
140-CMN-2500 (KTA 3-100-25A)	●	●	●	●				
140-CMN-4000 (KTA 3-100-40A)	●	●	●	–				
140-CMN-6300 (KTA 3-100-63A)	●	●	–	–				
140-CMN-9000 (KTA 3-100-90A)	●	–	–	–				

Selectivity of Circuit-Breakers

Incoming circuit-breaker: **140-CMN** (KTA 3-100)
Outgoing circuit-breaker: **140-MN (+ 140-CL2)**
(KTA 3-25 (+ KTL 3-65-N))

U_e : **400 V, 50 Hz**



Outgoing circuit-breaker: 140-MN (KTA 3-25)		Incoming circuit-breaker: 140-CMN (KTA 3-100)			
Current range [A]	Current limiter	16...25 A	25...40 A	40...63 A	63...90 A
		Max. setting of the magnetic releases (14x)			
		350 A	560 A	882 A	1260 A
		Selective to [kA]			
0.10...0.16	—	65	65	65	50
0.16...0.25	—	65	65	65	50
0.25...0.40	—	65	65	65	50
0.40...0.63	—	65	65	65	50
0.63...1.0	—	65	65	65	50
1.0...1.6	—	2	65	65	50
1.6...2.5	—	Not selective (series connection)	1	10	50
2.5...4.0	—		1	2	
4.0...6.3	—		1		
6.3...10	—				
10...16	—				
16...20	—				
20...25	—				

Incoming feeder circuit-breaker: **140M-K5F** (KTA 3-160S)

Outgoing feeder circuit-breaker: **140-MN (+ 140-CL2)** (KTA 3-25 (+ KTL 3-65-N))

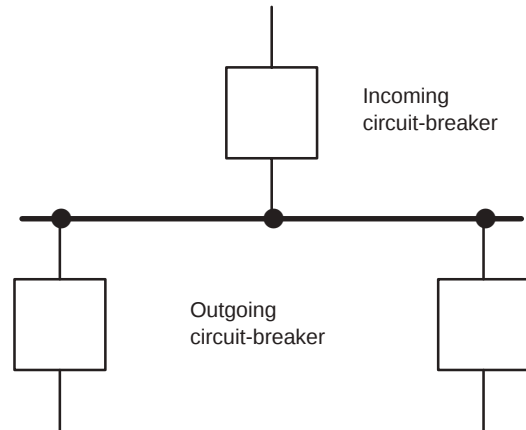
U_e : **400 V, 50 Hz**

Outgoing circuit-breaker: 140-MN (KTA 3-25)		Incoming circuit-breaker: 140M-K5F (KTA 3-160S)		
Current range [A]	Current limiter	80...100 A	100...125 A	125...160 A
		Max. setting of the magnetic releases		
		1200 A	1500 A	1900 A
		Selective to [kA]		
0.10...0.16	—	65	65	65
0.16...0.25	—	65	65	65
0.25...0.40	—	65	65	65
0.40...0.63	—	65	65	65
0.63...1.0	—	65	65	65
1.0...1.6	—	65	65	65
1.6...2.5	—	65	65	65
2.5...4.0	—	2	3	8
4.0...6.3	—	1	2	3
6.3...10	+ 140-CL2 (+ KTL 3-65-N)	1	2	3
10...16	+ 140-CL2 (+ KTL 3-65-N)	Not selective	1	3
16...20	+ 140-CL2 (+ KTL 3-65-N)		1	1
20...25	+ 140-CL2 (+ KTL 3-65-N)			1

Selectivity of Circuit-Breakers

Incoming circuit-breaker: **140M-M5F** (KTA 3-250S)
 Outgoing circuit-breaker: **140-MN (+ 140-CL2)**
 (KTA 3-25 (+ KTL 3-65-N))

U_e : **400 V, 50 Hz**



Outgoing circuit-breaker: 140-MN (KTA 3-25)		Incoming circuit-breaker: 140M-M5F (KTA 3-250S)		
Current range [A]	Current limiter	160...200 A	200...250 A	-
		Max setting of the pick-up current of magnetic trip		
		2400 A	3000 A	-
		Selective to [kA]		
0.10...0.16	—	65	65	—
0.16...0.25	—	65	65	—
0.25...0.40	—	65	65	—
0.40...0.63	—	65	65	—
0.63...1.0	—	65	65	—
1.0...1.6	—	65	65	—
1.6...2.5	—	65	65	—
2.5...4.0	—	65	65	—
4.0...6.3	—	6	20	—
6.3...10	+ 140-CL2 (+ KTL 3-65-N)	6	20	—
10...16	+ 140-CL2 (+ KTL 3-65-N)	3	5	—
16...20	+ 140-CL2 (+ KTL 3-65-N)	2	4	—
20...25	+ 140-CL2 (+ KTL 3-65-N)	2	4	—

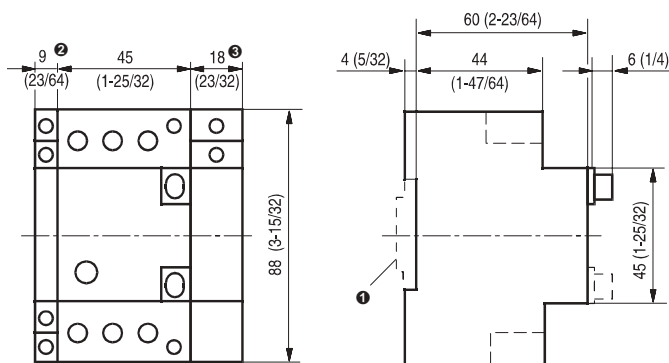
Incoming feeder circuit-breaker: **140M-P5F** (KTA 3-400S)

Outgoing feeder circuit-breaker: **140-MN (+ 140-CL2)** (KTA 3-25 (+ KTL 3-65-N))

U_e : **400 V, 50 Hz**

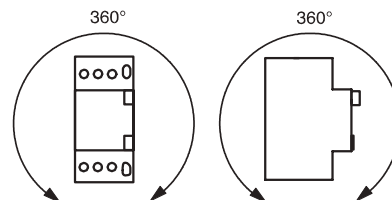
Outgoing circuit-breaker: 140-MN (KTA 3-25)		Incoming circuit-breaker: 140M-P5F (KTA 3-400S)		
Current range [A]	Current limiter	250...320 A	320...400 A	-
		Max setting of the pick-up current of magnetic trip		
		3800 A	4800 A	-
		Selective to [kA]		
0.10...0.16	—	65	65	—
0.16...0.25	—	65	65	—
0.25...0.40	—	65	65	—
0.40...0.63	—	65	65	—
0.63...1.0	—	65	65	—
1.0...1.6	—	65	65	—
1.6...2.5	—	65	65	—
2.5...4.0	—	65	65	—
4.0...6.3	—	40	65	—
6.3...10	+ 140-CL2 (+ KTL 3-65-N)	30	50	—
10...16	+ 140-CL2 (+ KTL 3-65-N)	8	15	—
16...20	+ 140-CL2 (+ KTL 3-65-N)	6	10	—
20...25	+ 140-CL2 (+ KTL 3-65-N)	6	10	—

Dimensions in mm (inches)

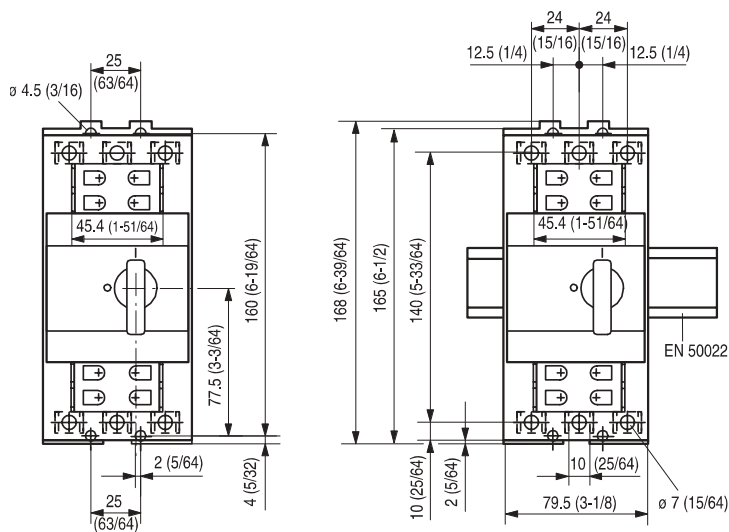


- ① Can be attached to DIN-rail EN 50 022-35
- ② Auxiliary contact block for side mounting 140-A (KT 3-25-PA)
- ③ 140-RT (KT 3-25-AA) shunt release or 140-UV (KT 3-25-UA) undervoltage release

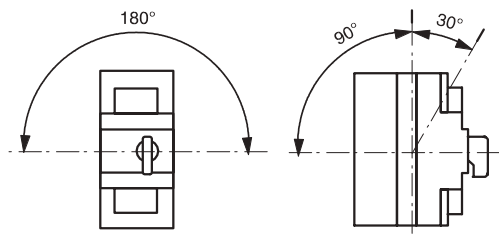
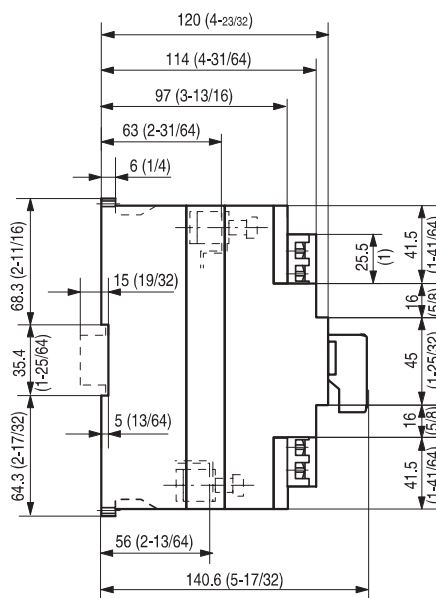
140-MN (KTA 3-25)



Mounting position 140-MN (KTA 3-25)

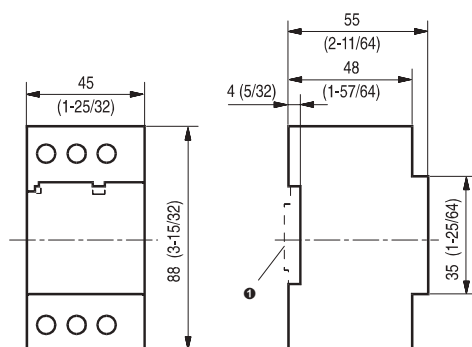


140-CMN (KTA 3-100)

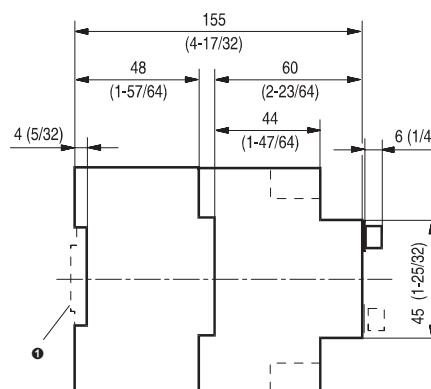


Mounting position 140-CMN (KTA 3-100)

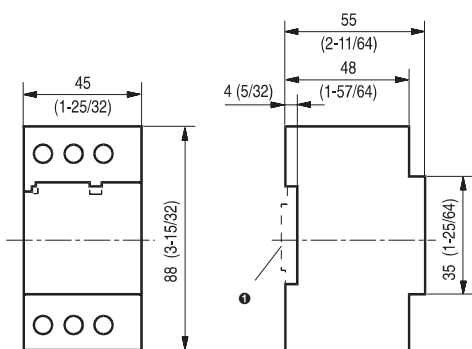
Dimensions in mm (inches)



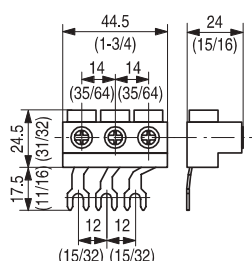
140-CL2 (KTL 3-65-N)



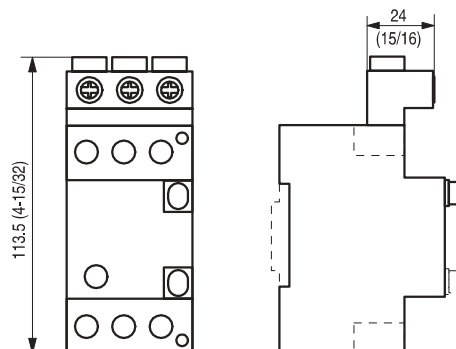
140-MN (KTA 3-25) mounted to 140-CL2 (KTL 3-65-N)



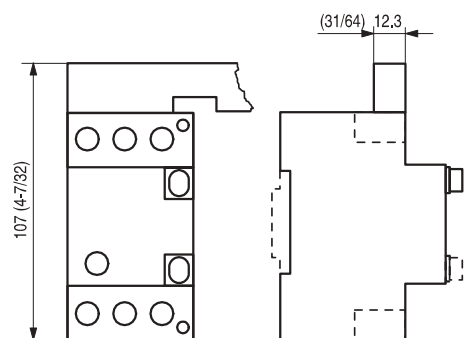
140-LD (KT 3-25-A2)



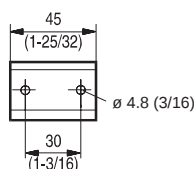
140-L2 (KT 3-25-A3)



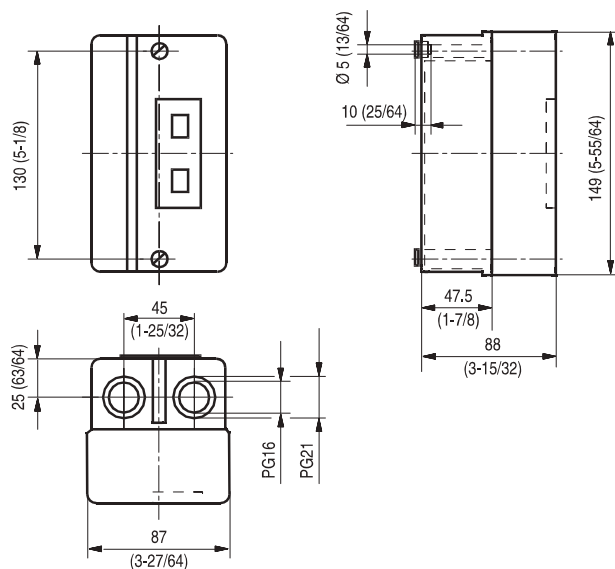
140-MN (KTA 3-25) with 140-L2 (KT 3-25-A3)



140-MN (KTA 3-25) with 140-L... (KT 3-25-DB...)



140-N12 (KT 3-25-AS)

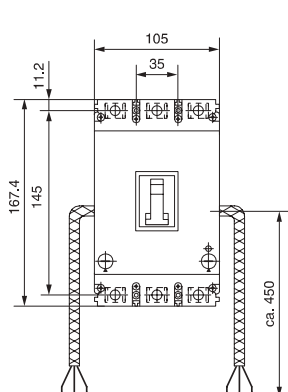


140-E41 (KT 3-25-KA)

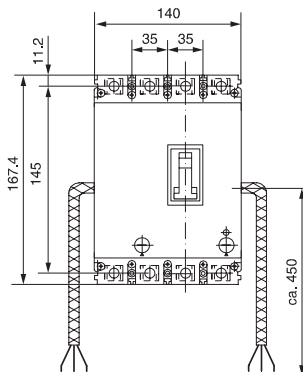
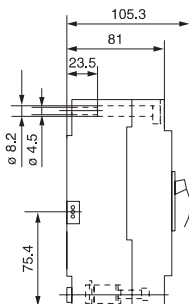
❶ Can be attached to DIN rail EN 50 022-35

Dimensions in mm

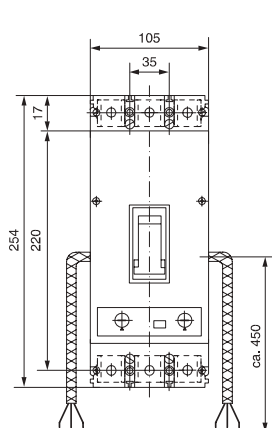
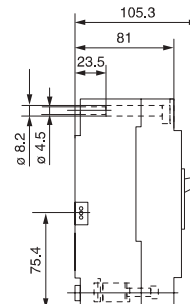
2



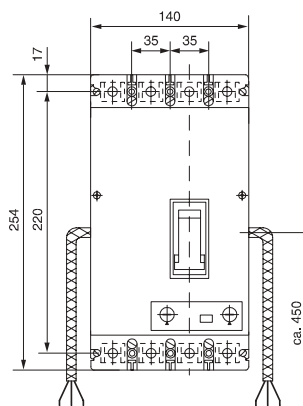
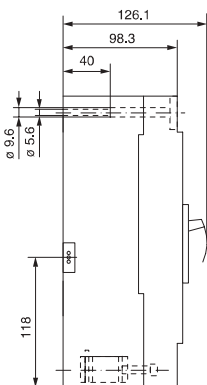
140M-K5F (KTA 3-160S)



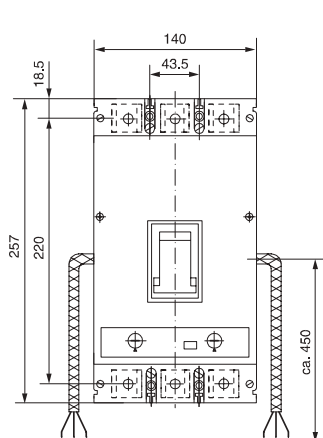
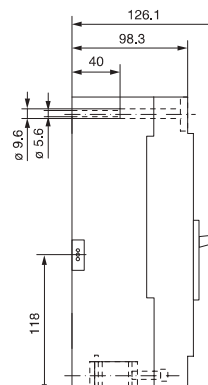
140M-K5F4 (KTA 3-160S4)



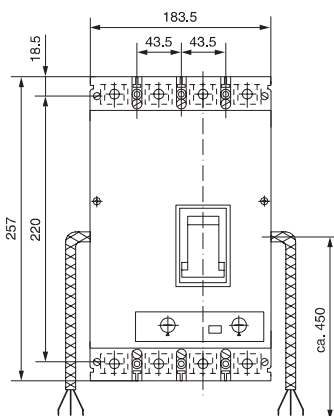
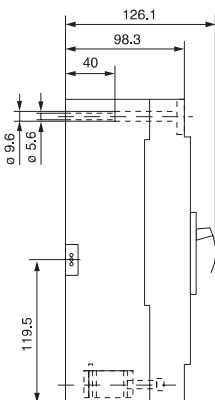
140M-M5F (KTA 3-250S)



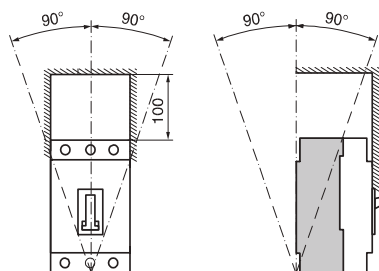
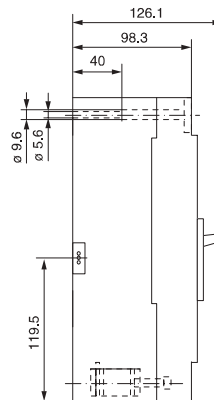
140M-M5F4 (KTA 3-250S4)



140M-P5F (KTA 3-400S)

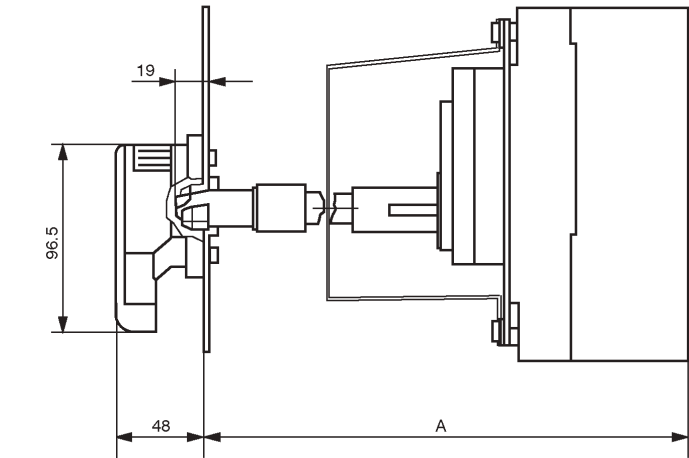


140m-P5F4 (KTA 3-400S4)



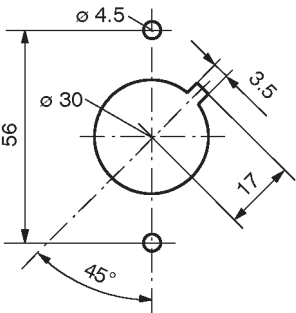
Mounting position / Safety Clearance 140M-K5F... 140M-P5F (KTA 3-160S... KTA 3-400S)

Dimensions in mm

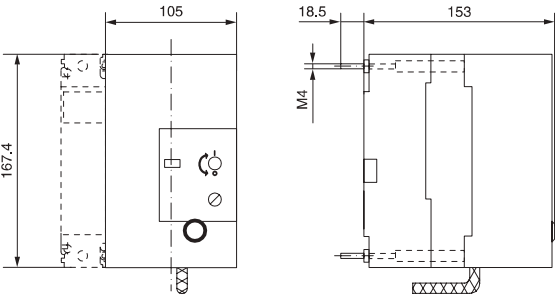


Type	A min.	A max.
140M-K5F (KTA 3-160S)	170	286
140M-M5F (KTA 3-250S)	188	304
140M-P5F (KTA 3-400S)	188	304

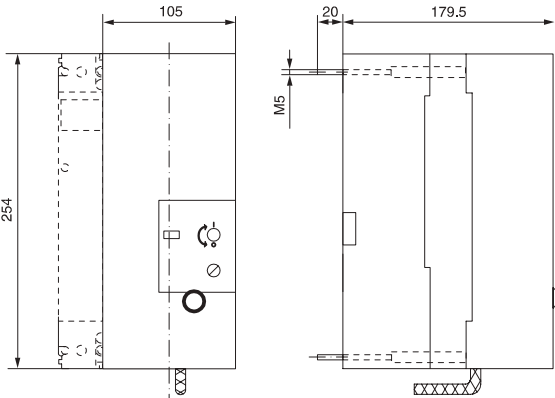
140M-.-D54N (KT 3-160/400-HRB)



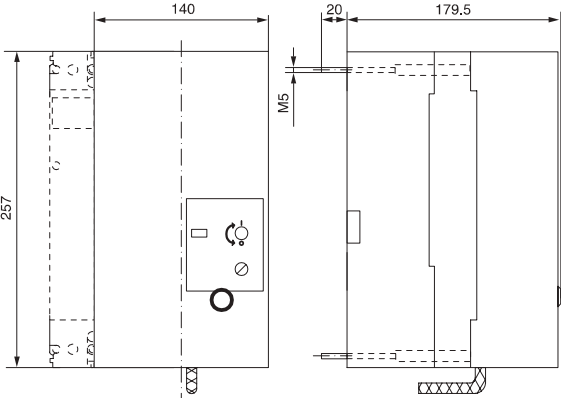
Notch



140M-K-PF (KT 3-160-FA)



140M-M-PF (KT 3-250-FA)



140M-P-Pf (KT 3-400-FA)