

Series KT7 Motor Circuit Controllers

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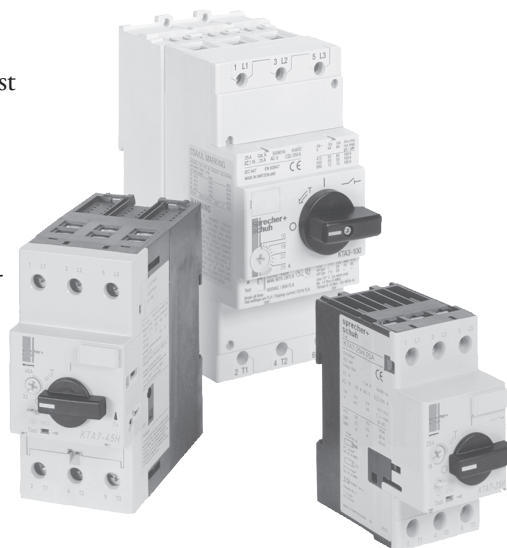
Versatile, convenient
and space saving...
for a variety of
applications

Sprecher+Schuh's KT7 series of Motor Circuit Controllers are some of the most versatile and technologically advanced control products available today.

In one small package, KT7s combine the functions of:

- Current limiting short circuit protection
- Class 10 thermal overload protection
- Switching and
- Signaling

These devices can be used in a wide variety of control schemes that reduce panel space, simplify installation and eliminate the need for more expensive equipment.



Designed for multiple applications

UL rules allow KT7 Motor Circuit Controllers to be used in a wide variety of applications including:

- Manual Starter Applications
- Traditional Group Motor Applications with compliance to the Tap Conductor Ratings
- Motor Disconnect Applications
- Self-Protected Manual Combination Starter Applications (Type E)
- Individual Combination Starter Applications (Type E/F)
- Multi-motor Starter Combination Applications (Type E/F)



Increased ratings...

Sprecher+Schuh's KT7 controller family offers higher interrupting capacities (KAIC ratings) and improved Type 2 Coordination and Type E (life after short-circuit). The KTA7-25H/32H offers the option of higher short-circuit current ratings (SCCR) than the standard interrupting capacity of the KTA7-25S/32S Motor Controllers. KTA7 is also available in frames up to 45A. KTC7 can be used with High Efficiency motors. KTB7 Magnetic Only controllers can be combined with CA7 contactors and CEP7 overloads to provide additional features. KTV7 series motor controllers are suitable for application at the output of variable frequency drive (VFD) in multi-motor installations.

See our online white paper

Methods
of Applying

KT7

Motor Circuit Controllers



45mm
(≈ 1 3/4")

25...32A
Standard Interrupting Capacity



45mm
(≈ 1 3/4")

25...32A
High Interrupting Capacity



54mm
(≈ 2 1/8")

45A
High Interrupting Capacity

Construction Type E Listing

Advanced current limiting and breaking capacity has allowed KT7s to be UL / CSA listed as self-protected (Construction Type E) manual combination motor controllers. This eliminates the need for an upstream fuse or circuit breaker when using the KT7 as a manual motor starter. In addition, KT7s *also* meet

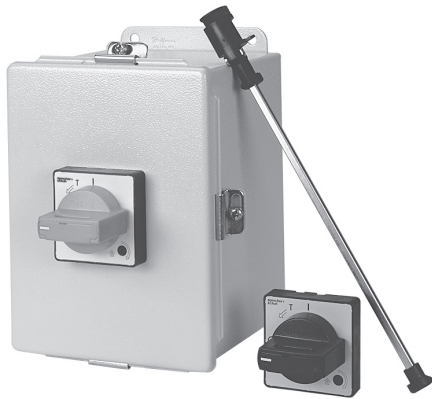
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UL requirements for “at-motor disconnects,” which means they can be used in an enclosure with a lockable handle as a manual motor starter for individual circuits, and are also an approved means of motor disconnect.

Type E + Combo starter + Economy = “Ecombo” starter

When the KT7 self-protected manual combination starter is combined with Sprecher + Schuh’s CA7 contactor to provide remote operation, we now have an alternative to the classic combination starter. We call these “Ecombo” starters, which save significant dollars and panel space over conventional combo starters. Ecombo starters are available for applications up to 45 Amperes (30 HP @ 460V).

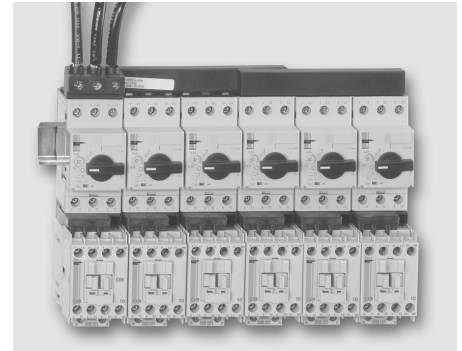
See a complete explanation of Ecombo starters beginning on page F58 of this catalog.



KT7s meet UL requirements for Type E manual motor controllers and “at-motor disconnects”

Multi-motor applications... Popular and money saving

Because of the KT7’s Construction Type E – UL Rating as a self-protected combination starter, many group motor installations can utilize an even simpler design and less expensive equipment. The result is minimum panel size and maximum flexibility while avoiding cumbersome NEC group motor installation rules.



Using KT7s in Multi-Motor Starter applications can replace classic Branch Circuit Protection Devices and reduce panel space up to 60%

Excellent short circuit protection characteristics

In the event of a short-circuit, the contacts are opened by magnetic, non-adjusting tripping elements in times approaching 2/1000 of a second. This results in the extremely rapid buildup of an arc voltage which limits the current of the short-circuit to a very low level. Because of this superb current limiting capability, KTA Motor Circuit Controllers have a short circuit capacity of up to 65kA at 480Y/277V and up to 47kA at 600Y/347V (see illustration below).

Superb thermal overload protection

Every KT7 device is individually calibrated at the factory for the smallest and largest current it can handle. When coupled with automatic ambient temperature compensation over a range of -25°C to +60°C, very accurate thermal overload protection is obtained. In addition, the KT7 is a Class 10 device... it trips within 10 seconds under locked rotor conditions (6 x FLA). This better protects today’s T-Frame motors.

Only model is available *without* the thermal trip feature for special applications where a separate motor overload is required.

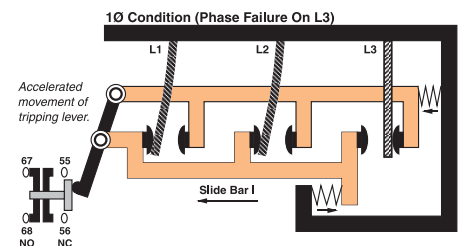
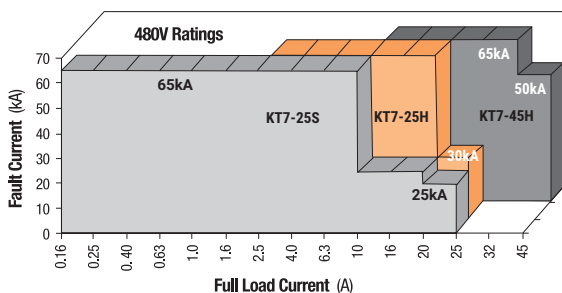
Other protection features

All KT7 Motor Circuit Controllers provide accelerated tripping under single phase conditions. This is accomplished with a special “differential tripping” mechanism built into each device.

Special units for special applications

KTC7 controllers are available with a fixed magnetic trip set at 16...20x the maximum value of the current adjustment range (as opposed to 13x for the KTA7). This prevents nuisance tripping in applications utilizing high efficiency motors for example. The KTB7 Magnetic

Manual Motor Starter Ratings



All KT7 Motor Circuit Controllers offer accelerated tripping under single phase conditions

KTA7 Base Unit

Maximum Horsepower						Current Adjustment Range [A]	Magnetic Release Response Current [A]	Catalog Number
Typical Single Phase		Typical Three Phase [HP]						
115V	230V	200V	230V	460V	575V			
KTA7-25...32S — Standard Interrupting Capacity								
~	~	~	~	~	~	0.10...0.16	2.1	KTA7-25S-0.16A
~	~	~	~	~	~	0.16...0.25	3.3	KTA7-25S-0.25A
~	~	~	~	~	1/4	0.25...0.40	5.2	KTA7-25S-0.4A
~	~	~	~	1/4	1/3	0.40...0.63	8.2	KTA7-25S-0.63A
~	~	~	~	1/2	3/4	0.63...1.0	13	KTA7-25S-1A
~	1/10	1/4	1/3	1	1	1.0...1.6	21	KTA7-25S-1.6A
1/10	1/6	1/2	3/4	1-1/2	2	1.6...2.5	33	KTA7-25S-2.5A
1/8	1/3	1	1	3	3	2.5...4	52	KTA7-25S-4A
1/4	3/4	1-1/2	2	5	5	4...6.3	82	KTA7-25S-6.3A
1/2	1-1/2	3	3	7-1/2	10	6.3...10	130	KTA7-25S-10A
1	3	5	5	10	15	10...16	208	KTA7-25S-16A
1-1/2	3	5	7-1/2	15	20	14.5...20	260	KTA7-25S-20A
2	3	7-1/2	7-1/2	20	20	18...25	325	KTA7-25S-25A
2	5	7-1/2	10	20	25	24...29	406	KTA7-32S-29A
3	5	7-1/2	10	25	30	27...32	448	KTA7-32S-32A
KTA7-25...32H — High Interrupting Capacity								
1/10	1/6	1/2	3/4	1-1/2	2	1.6...2.5	33	KTA7-25H-2.5A
1/8	1/3	1	1	3	3	2.5...4	52	KTA7-25H-4A
1/4	1/2	1-1/2	2	5	5	4...6.3	82	KTA7-25H-6.3A
1/2	1-1/2	3	3	7-1/2	10	6.3...10	130	KTA7-25H-10A
1	3	5	5	10	15	10...16	208	KTA7-25H-16A
1-1/2	3	5	7-1/2	15	20	14.5...20	260	KTA7-25H-20A
2	3	7-1/2	7-1/2	20	20	18...25	325	KTA7-25H-25A
2	5	7-1/2	10	20	25	24...29	406	KTA7-32H-29A
3	5	7-1/2	10	25	30	27...32	448	KTA7-32H-32A
KTA7-45H — High Interrupting Capacity								
1/2	1-1/2	3	3	7-1/2	7-1/2	6.3...10	130	KTA7-45H-10A
1	3	5	5	10	10	10...16	208	KTA7-45H-16A
1-1/2	3	5	7-1/2	15	15	14.5...20	260	KTA7-45H-20A
2	3	7-1/2	10	20	20	18...25	325	KTA7-45H-25A
3	5	7-1/2	10	25	30	23...32	416	KTA7-45H-32A
3	7-1/2	10	15	30	40	32...45	585	KTA7-45H-45A



Catalog Number KTA7-25S



Catalog Number KTA7-25H



Catalog Number KTA7-45H

**Horsepower ratings shown in the table are for reference only.
The final selection of the controller depends on the actual
motor full load current and service factor.**

- For motor with service factor less than 1.15. Use motor nameplate full load current times 0.9 and choose the motor starter with the appropriate current range. Example: Motor F.L.C. = 4.2A; S.F. = 1.0. — 4.2A x 0.9 = 3.78A. Select Catalog Number KTA7-25S-4A.

KTA7 UL Ratings Application Chart

Device	Manual Motor Starter		Manual Controller for Group Installation ❶			Manual Controller as Motor Disconnect ❷❸		Suitable for Tap Conductor Protection		Self-Protected Type E Manual Combination Controller ❹❺❻	
	Max. Short Circuit Current [kA]		Max. Fuse or Circuit Breaker	Max. Short Circuit Current [kA]		Max. Short Circuit Current [kA]		Max. Short Circuit Current [kA]		Max. Short Circuit Current [kA]	
	480V	600V		480V	600V	480V	600V	480Y/277V	600Y/347V	480Y/277V	600Y/347V
KTA7-25...32S — Standard Interrupting Capacity											
KTA7-25S-0.16A	65	47	450	65	47	65	47	65	47	65	47
KTA7-25S-0.25A	65	47	450	65	47	65	47	65	47	65	47
KTA7-25S-0.4A	65	47	450	65	47	65	47	65	47	65	47
KTA7-25S-0.63A	65	47	450	65	47	65	47	65	47	65	47
KTA7-25S-1A	65	47	450	65	47	65	47	65	47	65	47
KTA7-25S-1.6A	65	47	450	65	47	65	47	65	47	65	47
KTA7-25S-2.5A	65	30	450	65	30	65	30	65	30	65	30
KTA7-25S-4A	65	25	450	65	25	65	25	65	25	65	25
KTA7-25S-6.3A	65	30	450	65	30	65	30	65	~	65	~
KTA7-25S-10A	65	30	450	65	30	65	30	65	~	65	~
KTA7-25S-16A	30	30	450	30	30	30	30	30	~	30	~
KTA7-25S-20A	30	30	450	30	30	10	10	10	~	10	~
KTA7-25S-25A	25	10	450	25	10	10	5	~	~	~	~
KTA7-32S-29A	25	30	450	25	30	10	~	~	~	~	~
KTA7-32S-32A	25	30	450	25	30	10	~	~	~	~	~
KTA7-25...32H — High Interrupting Capacity											
KTA7-25H-2.5A	65	30	450	65	30	65	30	65	30	65	30
KTA7-25H-4A	65	30	450	65	30	65	30	65	30	65	30
KTA7-25H-6.3A	65	30	450	65	30	65	30	65	30	65	30
KTA7-25H-10A	65	30	450	65	30	65	30	65	30	65	30
KTA7-25H-16A	65	30	450	65	30	65	30	65	30	65	30
KTA7-25H-20A	65	30	450	65	30	65	30	65	~	65	~
KTA7-25H-25A	30	30	450	30	30	30	30	30	~	30	~
KTA7-32H-29A	30	30	450	30	30	30	18	~	~	~	~
KTA7-32H-32A	30	30	450	30	30	30	18	~	~	~	~
KTA7-45H — High Interrupting Capacity											
KTA7-45H-10A	65	30	600	65	30	65	30	65	30	65	30
KTA7-45H-16A	65	30	600	65	30	65	30	65	30	65	30
KTA7-45H-20A	65	30	600	65	30	65	30	65	30	65	30
KTA7-45H-25A	65	30	600	65	30	65	30	65	30	65	30
KTA7-45H-32A	65	30	600	65	30	65	30	65	30	65	30
KTA7-45H-45A	65	18	600	65	18	65	18	65	~	65	~

- ❶ UL 508, CSA 22.2 No. 14 for group installation, in connection with short-circuit protection device.
- ❷ UL 508 Part III.
- ❸ UL 508 Part IV.
- ❹ Type E applications require use of the KT7-xx-TE terminal adaptor on KT7s. Alternatively, compact busbar supply block KT7-_-A2E or -A3E meet Type E requirements for terminal spacing.
- ❺ Requires lockable twist knob (KT7-KN1 or KT7-KRY1 page 16) or lockable door coupling handle (KT7-HTN or KT7-HTRY page 15).

It should be noted that the KT7 Manual Motor Circuit Controller, when listed as a self-protected (Type E) device, is rated for Wye-connected power systems for voltages above 240 volts (i.e. 480Y/277 volts common in the United States or 600Y/347 volts common in Canada).

KTC7 Base Unit ❶

Maximum Horsepower						Current Adjustment Range [A]	Magnetic Release Response Current [A]	Catalog Number
Typical Single Phase		Typical Three Phase [HP]						
115V	230V	200V	230V	460V	575V			
KTC7-25S — Standard Interrupting Capacity								
~	~	~	~	~	~	0.10...0.16	3.2	KTC7-25S-0.16A
~	~	~	~	~	~	0.16...0.25	5.2	KTC7-25S-0.25A
~	~	~	~	~	1/4	0.25...0.40	8.2	KTC7-25S-0.4A
~	~	~	~	1/4	1/3	0.40...0.63	13	KTC7-25S-0.63A
~	~	~	~	1/2	3/4	0.63...1.0	21	KTC7-25S-1A
~	1/10	1/4	1/3	1	1	1.0...1.6	33	KTC7-25S-1.6A
1/10	1/6	1/2	3/4	1-1/2	2	1.6...2.5	52	KTC7-25S-2.5
1/8	1/3	1	1	3	3	2.5...4	82	KTC7-25S-4A
1/4	3/4	1-1/2	2	5	5	4...6.3	130	KTC7-25S-6.3A
1/2	1-1/2	3	3	7-1/2	10	6.3...10	208	KTC7-25S-10A
1	3	5	5	10	15	10...16	260	KTC7-25S-16A
KTC7-25H — High Interrupting Capacity								
1	3	5	5	10	10	10...16	260	KTC7-25H-16A
1-1/2	3	5	7-1/2	15	20	14.5...20	325	KTC7-25H-20A
KTC7-45H — High Interrupting Capacity								
2	3	7-1/2	10	20	25	18...25	416	KTC7-45H-25A
3	5	7-1/2	10	25	30	23...32	585	KTC7-45H-32A


KTC7-25S
Description

The KTC7 has a fixed magnetic trip set at 16...21x the maximum value of the current adjustment range (as opposed to the KTA7s magnetic trip of approximately 13x current adjustment range). KTC7 are typically used in applications where nuisance tripping might occur, as with some high efficiency motors.

Horsepower ratings shown in the table are for reference only.

The final selection of the controller depends on the actual motor full load current and service factor.

- For motor with service factor less than 1.15. Use motor nameplate full load current times 0.9 and choose the motor starter with the appropriate current range. Example: Motor F.L.C. = 4.2A; S.F. = 1.0. — 4.2A x 0.9 = 3.78A. Select Catalog Number KTC7-25S-4A.

❶ Magnetic trip is fixed at 16...21x the maximum value of the current adjustment range.

KTC7 UL Ratings Application Chart

Device	Manual Motor Starter		Manual Controller for Group Installation ❶			Manual Controller as Motor Disconnect ❷❸		Suitable for Tap Conductor Protection		Self-Protected Type E Manual Combination Controller ❹❺❻	
	Max. Short Circuit Current [kA]		Max. Fuse or Circuit Breaker	Max. Short Circuit Current [kA]		Max. Short Circuit Current [kA]		Max. Short Circuit Current [kA]		Max. Short Circuit Current [kA]	
	480V	600V		480V	600V	480V	600V	480Y/277V	600Y/347V	480Y/277V	600Y/347V
KTC7-25S — Standard Interrupting Capacity											
KTC7-25S-0.16A	65	47	450	65	47	65	47	65	47	65	47
KTC7-25S-0.25A	65	47	450	65	47	65	47	65	47	65	47
KTC7-25S-0.4A	65	47	450	65	47	65	47	65	47	65	47
KTC7-25S-0.63A	65	47	450	65	47	65	47	65	47	65	47
KTC7-25S-1A	65	47	450	65	47	65	47	65	47	65	47
KTC7-25S-1.6A	65	47	450	65	47	65	47	65	30	65	30
KTC7-25S-2.5A	65	25	450	65	25	65	25	65	25	65	25
KTC7-25S-4A	65	30	450	65	30	65	30	65	~	65	~
KTC7-25S-6.3A	65	30	450	65	30	65	30	65	~	65	~
KTC7-25S-10A	30	30	450	30	30	30	30	30	~	30	~
KTC7-25S-16A	30	30	450	30	30	10	10	10	~	10	~
KTC7-25H — High Interrupting Capacity											
KTC7-25H-16A	65	30	450	65	30	65	30	65	30	65	30
KTC7-25H-20A	30	30	450	30	30	30	30	30	~	30	~
KTC7-45H — High Interrupting Capacity											
KTC7-45H-25A	65	30	600	65	30	65	30	65	30	65	30
KTC7-45H-32A	65	30	600	65	18	65	18	65	18	65	18

- ❶ UL 508, CSA 22.2 No. 14 for group installation, in connection with short-circuit protection device.
- ❷ UL 508 Part III.
- ❸ UL 508 Part IV.
- ❹ Type E applications require use of the KT7-xx-TE terminal adaptor on KT7s. Alternatively, compact busbar supply block KT7-_-A2E or -A3E meet Type E requirements for terminal spacing.
- ❺ Requires lockable twist knob (KT7-KN1 or KT7-KRY1 page 16) or lockable door coupling handle (KT7-HTN or KT7-HTRY page 15).

It should be noted that the KT7 Manual Motor Circuit Controller, when listed as a self-protected (Type E) device, is rated for Wye-connected power systems for voltages above 240 volts (i.e. 480Y/277 volts common in the United States or 600Y/347 volts common in Canada).

KT7 Motor Circuit Controllers

KT7 Base Unit ②

Maximum Horsepower						① Rated Operational Current [A]	Magnetic Release Response Current [A]	Catalog Number
Typical Single Phase		Typical Three Phase [HP]						
115V	230V	200V	230V	460V	575V			
KTB7-25S — Standard Interrupting Capacity								
~	~	~	~	~	1/4	0.40	5.2	KTB7-25S-0.4A
~	~	~	~	1/2	3/4	1.0	13	KTB7-25S-1A
1/10	1/6	1/2	3/4	1-1/2	2	2.5	33	KTB7-25S-2.5A
KTB7-25...32H — High Interrupting Capacity								
1/10	1/6	1/2	3/4	1-1/2	2	2.5	33	KTB7-25H-2.5A
1/8	1/3	1	1	3	3	4	52	KTB7-25H-4A
1/2	1-1/2	3	3	7-1/2	10	10	130	KTB7-25H-10A
1	3	5	5	10	15	16	208	KTB7-25H-16A
2	3	7-1/2	7-1/2	20	20	25	325	KTB7-25H-25A
3	5	7-1/2	10	25	30	32	448	KTB7-32H-32A
KTB7-45H — High Interrupting Capacity								
2	3	7-1/2	10	20	25	25	325	KTB7-45H-25A
3	5	7-1/2	10	25	30	32	416	KTB7-45H-32A
3	7-1/2	10	15	30	40	45	585	KTB7-45H-45A



KT7-25S

Description

The KTB7 is designed without a thermal trip element (i.e., current adjustment range). It should be selected for applications where a separate motor overload protection device is used, such as on CLT7 Three Component Starters on page F76. Magnetic trip is the same as the KTA7 (approximately 13x operational current).

① APPLICATION NOTE: Product Selection for Heavy Duty Starting Applications using KTB7-25S, KTB7-25H/32H and KTB7-45H Motor Circuit Controllers

The KTB7 Motor Circuit Controller is designed and tested to protect a motor circuit in case of a short circuit. A separate Sprecher + Schuh CEP7-EE_ overload relay with selectable trip class should be used to protect the motor against overload.

In Applications with motor starting times exceeding 10 seconds (heavy duty starting) the rated operational current (I_e) of the motor FLA must be multiplied by the following factors for selection of the KTB7 Motor Circuit Controller KTB7-25S, KTB7-25H/32H and KTB7-45H.

Trip classes according to UL 508 Section 52 and IEC 60947-4-1

CLASS 10 = 1.00 CLASS 15 = 1.22 CLASS 20 = 1.42

CLASS 25 = 1.58 CLASS 30 = 1.73

The maximum number of motor starts in 25 cycles/hour with a minimum OFF-time of 120 seconds between cycles. This additional calculation and selecting a larger frame size is necessary to compensate (dissipate) the

increased heat resulting from long acceleration applications effecting the rated operational current of the KTB7.

Application Example:

Motor 480 VAC, 10 HP, I_e 14 FLA

Heavy duty starting application with start time of up to 18 seconds

Solution:

Starting time up to 18 seconds requires dimensioning for CLASS 20.

- Selection of the Motor Circuit Controller for Short Circuit Protection: Multiply the rated operational current I_e with factor for CLASS 20:

$$I_e(20) = 14 \text{ A} \times 1.42 = 19.9 \text{ A}$$

- Select corresponding Sprecher + Schuh KTB7-25S, KTB7-25H/32H or KTB7-45H from catalog using next higher current rating: KTB7-25H-25A

② Horsepower ratings shown in the table are for reference only. The final selection of the controller depends on the actual motor full load current and service factor.

- For motor with service factor less than 1.15. Use motor nameplate full load current times 0.9 and choose the motor starter with the appropriate current range. Example: Motor F.L.C. = 4.2A; S.F. = 1.0. – (4.2A x 0.9 = 3.78A). Select Catalog Number KTB7-25S-4A.

KTB7 UL Ratings Application Chart

Device	Manual Motor Starter		Manual Controller for Group Installation ❶			Manual Controller as Motor Disconnect ❷	
	Max. Short Circuit Current [kA]		Max. Fuse or Circuit Breaker	Max. Short Circuit Current [kA]		Max. Short Circuit Current [kA]	
	480V	600V		480V	600V	480V	600V
KTA7-25S — Standard Interrupting Capacity							
KTb7-25S-0.4A	65	47	450	65	47	65	47
KTb7-25S-1A	65	47	450	65	47	65	47
KTb7-25S-2.5A	65	30	450	65	30	65	30
KTA7-25...32H — High Interrupting Capacity							
KTb7-25H-2.5A	65	30	450	65	30	65	30
KTb7-25H-4A	65	30	450	65	30	65	30
KTb7-25H-10A	65	30	450	65	30	65	30
KTb7-25H-16A	65	30	450	65	30	65	30
KTb7-25H-25A	30	30	450	30	30	30	30
KTb7-32H-32A	30	30	450	30	30	30	18
KTA7-45H — High Interrupting Capacity							
KTb7-45H-25A	65	30	600	65	30	65	30
KTb7-45H-32A	65	30	600	65	30	65	30
KTb7-45H-45A	65	18	600	65	18	65	18

❶ UL 508, CSA 22.2 No. 14 for group installation, in connection with short-circuit protection device.

❷ UL 508 Part III.

KTV7 Base Unit

Rated Operational Current (I _e)	Current Adjustment Range [A]	Nominal Magnetic Trip Current	Maximum Short Circuit Current [kA]		Maximum Horsepower Typi- cal ①② Three Phase [HP]				Catalog Number
			480Y/277V Type E	480V (group motor)	200V	230V	460V	575V	
KTV7-25H...32H — High Interrupting Capacity									
1.6	1.0...1.6	82	65	65	1/4	1/3	1	~	KTV7-25H-1.6A
2.5	1.6...2.5	82	65	65	1/2	3/4	1-1/2	~	KTV7-25H-2.5A
4.0	2.5...4.0	82	65	65	1	1	3	~	KTV7-25H-4A
6.3	4.0...6.3	82	65	65	1-1/2	2	5	~	KTV7-25H-6.3A
10	6.3...10	130	65	65	3	3	7-1/2	~	KTV7-25H-10A
16	10...16	208	65	65	5	5	10	~	KTV7-25H-16A
20	14.5...20	260	65	65	5	7-1/2	15	~	KTV7-25H-20A
25	18...25	325	30	30	7-1/2	7-1/2	20	~	KTV7-25H-25A
29	24...29	406	~	30	7-1/2	10	20	~	KTV7-32H-29A
32	27...32	448	~	30	7-1/2	10	25	~	KTV7-32H-32A



KTV7-25H

Description

The Sprecher+Schuh KTV7 series motor controllers are suitable for two types of applications under cULus listings:

- (1) as a Manual, Self-protected Motor Controller or
- (2) as a Manual Motor Controller with approval for group installation (and as a motor disconnect)

When UL/CSA listed as a manual, self-protected combination motor controller, the KTV7 provides all of the necessary NEC requirements for protection and control of individual motor branch circuits without additional protective devices (per NEC 430-52C option 6).

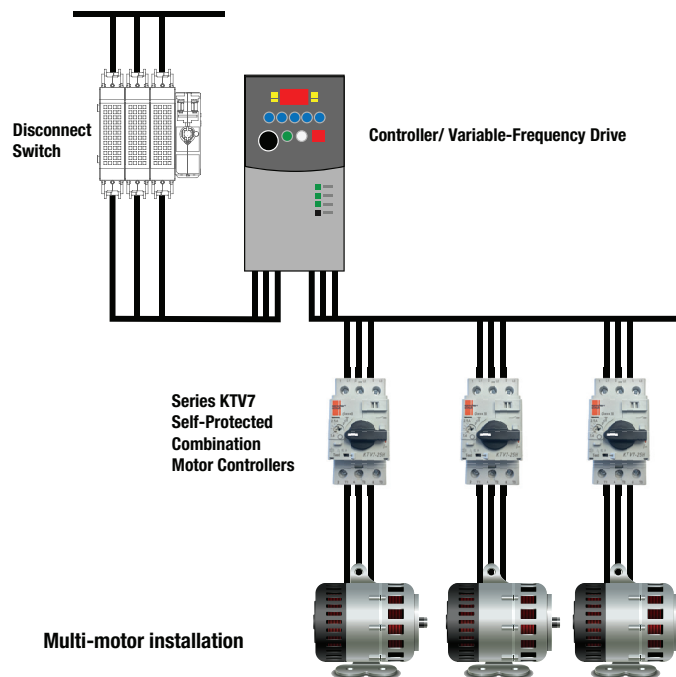
When KTV7 devices are applied a manual motor controllers in group installations, then NEC group installation rules state these devices must be applied per the appropriate rules, which require the use of an upstream BCPD-branch circuit protection device (per NEC 430-53C option 2).

The output frequency of the VFD must be limited to 400Hz or less to prevent thermal degradation. Various models of the KTV7 series self-protected combination motor controllers provide disconnection for motor branch circuits, branch-circuit and short-circuit protection (including magnetic protection), overload/thermal protection and manual switching.

The KTV7 self-protected combination motor controllers are current limiting and have a fixed magnetic trip. Interrupt ratings at 400V and 480V are available up to 65kAIC. The VFD output pulse-width modulation frequency must be limited to 4 kilohertz or less. The circuit breakers provide motor overload protection with a trip class 10 characteristic.

Horsepower ratings shown in the table are for reference only. The final selection of the controller depends on the actual motor full load current and service factor.

- For motor with service factor less than 1.15. Use motor nameplate full load current times 0.9 and choose the motor starter with the appropriate current range. Example: Motor F.L.C. = 4.2A; S.F. = 1.0. – 4.2A x 0.9 = 3.78A. Select Catalog Number KTV7-25H-4A.



① HP ratings shown are for reference. Final selection of MPCB is determined by actual motor full load current.

② Not applicable at 575V.

KTV7 UL Ratings Application Chart

Device	Manual Controller for Group Installation ❶			Manual Controller as Motor Disconnect ❷❸		Suitable for Tap Conductor Protection		Self-Protected Type E Manual Combination Controller ❹❺❻	
	Max. Fuse or Circuit Breaker	Max. Short Circuit Current [kA]		Max. Short Circuit Current [kA]		Max. Short Circuit Current [kA]		Max. Short Circuit Current [kA]	
		480V	600V	480V	600V	480Y/277V	600Y/347V	480Y/277V	600Y/347V
KTV7-25H...32H — High Interrupting Capacity									
KTV7-25H-1.6A	450	65	~	65	~	65	~	65	~
KTV7-25H-2.5A	450	65	~	65	~	65	~	65	~
KTV7-25H-4A	450	65	~	65	~	65	~	65	~
KTV7-25H-6.3A	450	65	~	65	~	65	~	65	~
KTV7-25H-10A	450	65	~	65	~	65	~	65	~
KTV7-25H-16A	450	65	~	65	~	65	~	65	~
KTV7-25H-20A	450	65	~	65	~	65	~	65	~
KTV7-25H-25A	450	30	~	30	~	30	~	30	~
KTV7-32H-29A	450	30	~	30	~	~	~	~	~
KTV7-32H-32A	450	30	~	30	~	~	~	~	~

❶ UL 508, CSA 22.2 No. 14 for group installation, in connection with short-circuit protection device.

❷ UL 508 Part III.

❸ UL 508 Part IV.

❹ Type E applications require use of the KT7-xx-TE terminal adaptor on KT7s. Alternatively, compact busbar supply block KT7-_-A2E or -A3E meet Type E requirements for terminal spacing.

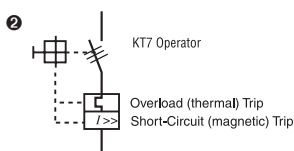
❺ Requires lockable twist knob (KT7-KN1 or KT7-KRY1 page 16) or lockable door coupling handle (KT7-HTN or KT7-HTRY page 15).

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Accessories for KT7

Accessory	Description	Operator Position ❶			Type	Connection Diagram and Terminal Markings ❷	For Use With	Catalog Number
		OFF	ON	Tripped				
		O	X	O	1 NO		KTA7/CTB7/ KTC7/KTV7 KTU7 ❸	KT7-PE1-10
		X	O	X	1 NC		KTA7/CTB7/ KTC7/KTV7 KTU7 ❸	KT7-PE1-01
	Front-Mounted Auxiliary Contact • 1-pole or 2-pole • No additional space required • 300V max.	O	X	O	1 NO		KTA7/CTB7/ KTC7/KTV7 KTU7 ❸	KT7-PE1-11
		X	O	X	1 NC			
		O	X	O	1 NO		KTA7/CTB7/ KTC7/KTV7 KTU7 ❸	KT7-PE1-20
		O	X	O	1 NO			
		X	O	X	1 NC		KTA7/CTB7/ KTC7/KTV7 KTU7 ❸	KT7-PE1-02
		X	O	X	1 NC			
	Right Side-Mounted Auxiliary Contact • 2-pole • Adds 9 mm to the width of the device • 600V max.	O	X	O	1 NO		KTA7 CTB7 KTC7 KTV7	KT7-PA1-20
		O	X	O	1 NO			
		X	O	X	1 NC		KTA7 CTB7 KTC7 KTV7	KT7-PA1-02
		X	O	X	1 NC			
		O	X	O	1 NO		KTA7 CTB7 KTC7 KTV7	KT7-PA1-11
		X	O	X	1 NC			

❶ X=Contact Closed
O=Contact Open

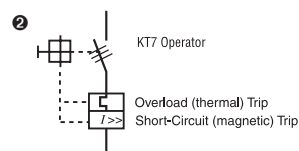


❸ When KT7-PE₁ is used with KTU7 Circuit Breakers, KT7-PEFC Load Terminal Cover is required to comply with UL489 terminal clearance standards.

Accessories for KT7

Accessory	Description	Operator Position ❶			Type	Connection Diagram and Terminal Markings ❷	For Use With	Catalog Number
		OFF	ON	Tripped				
	Front-Mounted Trip Contact • 2-pole • Indicates tripping of device • No additional space required • 300V max.	0	X	0	1 NO		KTA7/ KTB7/ KTC7/ KTV7 KTU7 ❸	KT7-PEF1-S10-N10
		0	0	X	NO Trip (Short-Circuit & Overload)			
		X	0	X	1 NC		KTA7/ KTB7/ KTC7/ KTV7 KTU7 ❸	KT7-PEF1-S10-N01
		0	0	X	NO Trip (Short-Circuit & Overload)			
	Right Side-Mounted Trip Contact • 2-pole • Indicates tripping of motor protector • Adds 9 mm to the width of the device • 600V max.	0	0	X	NO Trip (Short-Circuit & Overload)		KTA7 KTB7 KTC7 KTV7	KT7-PAF1-S10-M10
		0	0	X	NO Trip (Short-Circuit)			
		0	0	X	NO Trip (Short-Circuit & Overload)		KTA7 KTB7 KTC7 KTV7	KT7-PAF1-S10-M01
		X	X	0	NC Trip (Short-Circuit)			
		X	X	0	NC Trip (Short-Circuit & Overload)		KTA7 KTB7 KTC7 KTV7	KT7-PAF1-S01/M10
		0	0	X	NO Trip (Short-Circuit)			
		X	X	0	NC Trip (Short-Circuit & Overload)		KTA7 KTB7 KTC7 KTV7	KT7-PAF1-S01-M01
		X	X	0	NC Trip (Short-Circuit)			
		0	0	X	NO Trip (Short-Circuit)		KTA7 KTB7 KTC7 KTV7	KT7-PAF1-M11
		X	X	0	NC Trip (Short-Circuit)			

❶ X=Contact Closed
0=Contact Open



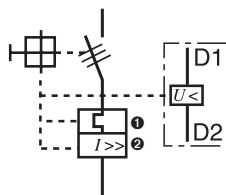
❸ When KT7-PE_ is used with KTU7 Circuit Breakers, KT7-PEFC Load Terminal Cover is required to comply with UL489 terminal clearance standards.

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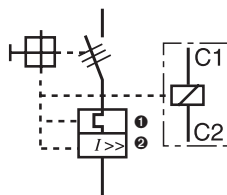
Accessories for KT7

Accessory	Description	For Use With	AC Coil Voltage		Catalog Number	
			50 HZ	60 HZ	Shunt Trip	Undervoltage
	Undervoltage Trip - Left-side mounted - Adds 18 mm to the width of the KT7 device - Automatically trips motor protector when voltage falls below 35...70%	KTA7 KTB7 KTC7 KTV7	12V	14V	KT7-AA-14V	KT7-UA-14V
			21V	24V	KT7-AA-24V	KT7-UA-24V
			24V	28V	KT7-AA-28V	KT7-UA-28V
			42V	48V	KT7-AA-48V	KT7-UA-48V
			110V	120V	KT7-AA-120V	KT7-UA-120V
			110V	127V	KT7-AA-127V	KT7-UA-127V
			220...230V		KT7-AA-230V	KT7-UA-230V
				240...260V	KT7-AA-240V	KT7-UA-240V
			240V	277V	KT7-AA-277V	KT7-UA-277V
			380V	460V	KT7-AA-460V	KT7-UA-460V
	Shunt Trip - Left-side mounted - Adds 18 mm to the width of the KT7 device - Trips motor protector when voltage is applied remotely	KTU7	415V	480V	KT7-AA-480V	KT7-UA-480V
			525V	600V	KT7-AA-600V	KT7-UA-600V
			DC Coil Voltage		Shunt Trip	Undervoltage
			9V DC		KT7-AA-9D	KT7-UA-9D
			12V DC		KT7-AA-12D	KT7-UA-12D
			24V DC		KT7-AA-24D	KT7-UA-24D
			36V DC		KT7-AA-36D	KT7-UA-36D
			48V DC		KT7-AA-48D	KT7-UA-48D
			60V DC		KT7-AA-60D	KT7-UA-60D
			64V DC		KT7-AA-64D	KT7-UA-64D
			72V DC		KT7-AA-72D	KT7-UA-72D
			80V DC		KT7-AA-80D	KT7-UA-80D

Undervoltage Trip
Connection Diagram



Shunt Trip
Connection Diagram



① For Overload (thermal) Trip of KT7.
② For Short-Circuit (magnetic) Trip of KT7.

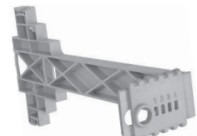
Classic Handle Assembly, Type 1/4/4X/12

Accessory	Description	Color	Legend ②	For use with...	Frame Size (Length)	Catalog Number
	Classic Door Coupling Handle ①②③ - For 3 padlocks 4...8 mm (5/16") diameter - Type 1/3/3R/4/4X/12 and IP66 - Interlock override capability - Can be modified for locking in ON position - Ships with coupling — order extension shaft and legend plate separately - See Technical Section for mounting depth information	Gray/Black	0 - I OFF - ON Trip	KTA7, KTB7, KTC7, KTV7 ①② KTU7 ③	65 x 65mm	KT7-HTN
		Red/Yellow	0 - I OFF - ON Trip		65 x 65mm	KT7-HTRY
	Extension Shaft ① - Cut to required length for mounting depth (adapter-door) - See Technical Section for mounting depth information			KT7-HTN KT7-HTRY	250 mm	KT7-HT
					400 mm	KT7-HTL

Contemporary Handle Assembly, Type 3R/3/4/4X

Accessory	Description	Color	Legend ②	For use with...	Frame Size (Length)	Catalog Number
	Contemporary Door Coupling Handle ⑤ • Screw Fixing • Type 3R, 3, 12, 4, 4X, IP66 • Field configurable for defeatable or non-defeatable • Ships with coupling — order extension shaft and legend plate separately • Requires 30mm hole for mounting • For up to 2 padlocks	Black/Black	0 - I OFF - ON Trip	KTA7 KTB7 KTC7 KTV7 KTU7	48.7 x 47mm	KT7-SB
		Red/Yellow	0 - I OFF - ON Trip		48.7 x 47mm	KT7-SY
	Extension Shaft • Cut to required length for mounting depth (adapter-door) • See Technical Section for mounting depth information			KT7-SB KT7-SY	305mm (12")	KT7-S1
					533mm (21")	KT7-S2

Handle Accessories

Accessory	Description	For use with...	Catalog Number
	Extension Shaft Support ④ - Provides consistent alignment of the KT7 shafts with handle or door coupling - Recommended for shaft lengths >200mm (7.8 in) 9mm in width and snaps on right side of KT_7 devices - Allows for one side-mount auxiliary	KT7-HT_ KT7-S_ KT7-N_ 	KT7-SHS
	Legend Plate - Marking: "Hauptschalter" and "Main Switch" (Black/Gray) - Marking: "Not-Aus" and "Emergency Off" (Black/Yellow)	KT7-HT_ KT7-S_ 	KT7-HTFCN KT7-HTFCRY

① See Dimensions and Technical data in this section for design compatibility.

② KTA7, KTB7 and KTC7 can be used with Series D or later KT7-H_ Handle mechanism with "I-O" markings or Series E with "ON-OFF" markings.

③ KTU7 requires Series E or later to comply with UL489 "ON-OFF" Trip

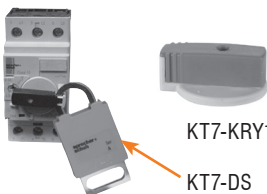
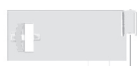
markings.

④ See page 41 for assembly example and dimensions.

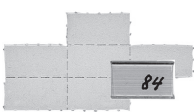
⑤ See page 42 for KT7-S_ handle dimensions.

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Accessories for KT_7

Accessory	Description	Color	For Use With	Catalog Number
 KT7-KRY1 KT7-DS	Lockable Twist Knob - For 1 padlock 4...5 mm (1/4") dia. shackle - Can be locked in OFF position	Black	KTA7, KTB7, KTC7, KTV7, KTU7	KT7-KN1
		Red/Yellow		KT7-KRY1
	Locking Tag - Padlock attachment to the lockable handles - Up to three padlocks 4...8 mm (5/16") shackle	Red	KT7-KN1 KT7-KRY1 KT7-45-KRY	KT7-DS
	Terminal Adapter for Type E Applications ❶ - Required on all KT7s used in UL Type E applications - May not be used with Bus Bars	KTA/B/C7/V7-25/32		KT7-25-TE1
		KTA/B/C7-45		KT7-45-TE
	Anti-Tamper Shield - Provides protection against inadvertent adjustment of the current setting 10 pieces per package (price per piece)	KTA7 KTB7 KTC7 KTV7		KT7-25-CA
	Screw Adaptor - For screw fixing of KT7 Motor Circuit Controller 10 pieces per package (price per piece)	KTA7 KTB7 KTC7 KTV7 KTU7		KT7-45-AS

Marking Systems

Component	Description	Pkg. Qty.	Catalog Number
	Label Sheet - 1 sheet with 105 self-adhesive paper labels each, 6 x 17mm	1	CA7-FMS
	Marking Tag Sheet - 1 sheet with 160 perforated paper labels each, 6 x 17mm. To be used with transparent cover	1	CA7-FMP
	Transparent Cover - To be used with Marking Tag Sheets	100 ❷	CA7-FMC
	Tag Carrier - For marking with marker cards and tags. See page N6 for complete listing of available cards and tabs.	100 ❷	CA7-FMA2

❶ Terminal Adaptors are supplied as standard on enclosed KT7 and CX7 starters, as well as, CL8, CL7 and CK7 assembled products, assuring they can be used in Type E applications. Alternatively, compact busbar supply block KT7- _A2E or -A3E meet Type E requirements for terminal spacing.

❷ Minimum quantity is one package of 100. Price is each x 100 = total price.

Connecting Modules (for connecting KTA7, KTB7 or KTC7 to CA8, CA7 AC coil, or CA7 Electronic DC coil contactors) ②

Module	Description	For Connecting. . .	To Contactor. . .	Catalog Number ①
	Connecting Modules (forms Ecombo Starter) - ① - Provides electrical and mechanical interconnection of KT7 and CA8 (with AC or DC coils), CA7 (with AC coils) or CA7- _E (with Electronic DC coils). - Suitable for reversing and wye-delta kits - Ecombo starter (with KT7-25/32) mounts on a single DIN-rail (KT7 mounts on DIN-rail) - Ecombo starter (with KT7-45) can be mounted on two DIN-rails or on Mounting Modules (see selection table below) - Contactor coil mounted on load side	KT_7-25S..32S or RF7	CA8-9...12 12A max.	KT7-25S-PEK12
		KT_7-25S..32S or RF7	CA7-9...23 CA7-9E...23E	KT7-25S-PEC23
		KT_7-25H..32H	CA7-9...23 CA7-9E...23E	KT7-25H-PEC23
		KT_7-25H..32H	CA7-30...37 CA7-30E...37E	KT7-25H-PNC37
		KT_7-45H	CA7-30...37 CA7-30E...37E	KT7-45H-PNC37
		KT_7-45H	CA7-43 CA7-43E	KT7-45H-PNC43

Connecting Modules (for connecting KTA7, KTB7 or KTC7 to CA7 to make CLT7 type assemblies) ②

Module	Description	For Connecting...	To Contactor. . .	Use Connector. . . ①	With Coil Module. . .
 KT7-25S-PNC23  KT7-25S-PSC23	Connecting Modules - Provides electrical interconnection of KT7 and CA7 contactors - Contactor Coil Module extends A1/A2 Line Side terminals forward to facilitate wiring - Contactor and motor protector must be mounted on two DIN-rails or on Mounting Module (see selection table below)	KT_7-25S..32S or RF7	CA7-9..23	KT7-25S-PNC23	KT7-25S-PSC23
		KT_7-25H..32H		KT7-25H-PNC23	
		KT_7-25H..32H	CA7-30..37	KT7-25H-PNC37	KT7-45H-PSC43
		KT_7-45H		KT7-45H-PNC37	
		KT_7-45H	CA7-43	KT7-45H-PNC43	

Type W Mounting Modules

Module	Description	Width (mm)	Catalog Number
	Short Mounting Module - Requires Connecting Module from tables above - Provides support for KT7 + CA7 or CA8 - Top rail is specifically designed for KT7 - Bottom rail is movable for easy assembly and disassembly - Complete unit mounts to two 35mm DIN-rails or one 70mm DIN-rail or screw mounts 228 mm long	45	W-32489
		54	W-32490
	Long Mounting Module - See Section D for Connecting Modules - Provides support for KT7 + PCS Softstarter, CA7 + PCS Softstarter or KTB7 + CA7+CEP7 - Top rail is specifically designed for KT7 - Bottom rail is movable for easy assembly and disassembly - Complete unit mounts to two 35mm DIN-rails or one 70mm DIN-rail or screw mounts 283 mm long	45	W-32496
		54	W-32497
	Spacer for Mounting Module - Fits between 45mm and 54mm for Reversing applications (228 mm long)	9	W-32955
	Dovetail Joints - Used to connect two mounting modules together. (Sold in packages of 50)		W-32954

① cURus Approved (File # E33916).

② Not for use with KTU7 Circuit Breakers

Compact Busbar System for KTA7, KTB7 and KTC7 Motor Controllers ①②④

Accessory	Description	For Use With	Catalog Number
	Compact Busbar — 45 mm Spacing (Rated 64 A) - For use with front-mounted auxiliary contact on KT_7 Motor Controllers - Connects 2 Motor Controllers - Connects 3 Motor Controllers - Connects 4 Motor Controllers - Connects 5 Motor Controllers	KT_7-25...32S KT_7-25...32H ③	KT7-32-DB-45-2 KT7-32-DB-45-3 KT7-32-DB-45-4 KT7-32-DB-45-5
	Compact Busbar — 54 mm Spacing (Rated 64 A) - For use with side-mounted auxiliary contact on KT_7 Motor Controllers - Connects 2 Motor Controllers - Connects 3 Motor Controllers - Connects 4 Motor Controllers - Connects 5 Motor Controllers	KT_7-25...32S KT_7-25...32H ③	KT7-32-DB-54-2 KT7-32-DB-54-3 KT7-32-DB-54-4 KT7-32-DB-54-5
	Compact Busbar — 54mm Spacing (Rated 120 A) - For use with front-mounted auxiliary contact on KT_7 Motor Controllers - Connects 2 Motor Controllers - Connects 3 Motor Controllers - Connects 4 Motor Controllers	KT_7-45H	KT7-45-DB-54-2 KT7-45-DB-54-3 KT7-45-DB-54-4
	Compact Busbar — 63 mm Spacing (Rated 120 A) - For use with side-mounted auxiliary contact on KT_7 Motor Controllers - Connects 2 Motor Controllers - Connects 3 Motor Controllers - Connects 4 Motor Controllers	KT_7-45H	KT7-45-DB-63-2 KT7-45-DB-63-3 KT7-45-DB-63-4
 KTA7-25S to 25H KBH2	Spacer for KT_7-25...32H to KT_7-25...32S - Accommodates difference in depth from KT_7-25H...32H to KT_7-25S...32S - Aligns terminals for compact bus bar connection	KT_7-25...32S to KT_7-25...32H ③	KBH2
 A2E A3E	Supply Block and Terminal - For power connection to Compact Busbar — 600V, KT_7-25/32...63A max. / KT_7-45...120A maximum - Top feed — overlaps commoning link - Meets requirements for terminal spacing from source in Type E applications - KT7-25-A2E and KT7-45-A2E are primarily used for bottom cable feed	KT_7-25...32S or KT_7-25...32H ③	KT7-25-A2E KT7-32-A3E
		KT_7-45H	KT7-45-A2E KT7-45-A3E
	Terminal Cover - For covering of unused connection terminals - IP2X finger protection	KT_7-25...32 KT_7-45H	KT7-32-DBA KT7-45-DBA

① UL Approved (File #E33916); CSA Approved (File #13908).

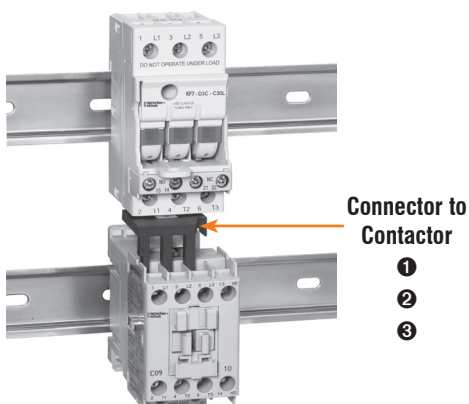
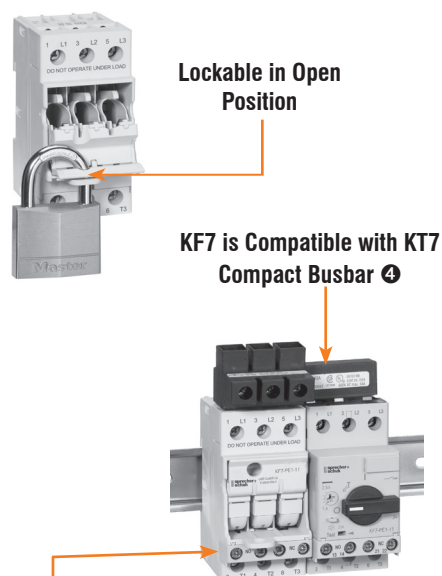
② Compact busbar may not be applied with KT7-25-TE1 or KT7-45-TE Terminal Adaptors. Either Terminal Adaptors or Bus Bar may be used, not both.

③ KT7-25...32S and KT7-25...32H may not be combined without KBH2.

④ Not for use with KTU7 Circuit Breakers

KF7 Fuse Holder to be used with KT7 or CA8/CA7 ⑤

Accessory	Description	Approvals		Catalog Number
		IEC/CE	UL/CSA	
	KF7 Fuse Holder, CC - 30A	Yes	Yes	KF7-D3C-C30
 Blown Fuse Indicator	KF7 Fuse Holder with Blown Fuse Indication, CC - 30A	Yes	Yes	KF7-D3C-C30L

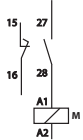


Applying KF7 with KTA7 Motor Circuit Controllers and CA7 Contactors

KF7 can be applied on the line side of a multiple small KTA7 motor circuit controller or a single KTA7 controller and CA7 contactors to increase the short-circuit protection of the group or a single branch circuit. KF7 is compatible with the KT7 compact bus bars (as shown in Section F), which reduces the space requirement as well as installation time.

Applying KF7 with CA7 Contactors

KF7 can be applied on the line side of CA7 contactors to increase the short-circuit withstand rating. The cUL withstand rating of CA7 when protected by Type "CC" fuses is increased to 100KAIC as shown on page A72.

Accessory	Connection Diagram	Description	Catalog Number
		Auxiliary Contact for KF7 Fuse Holder (1 NO Late Make + NC Early Break) • NO Late Make, provides positive indication that power circuit is open • NC Early Break, provides capability for dropping out contactor before breaking current on fuse	KF7-PE1-11

- ① The KF7 terminal spacing and height are the same as KT_7-25S. Reference page 17 tables to select a connector.
- ② If using a KT7-25S-PEK12 (with CA8) or KT7-25S-PEC23 (with CA7), close couple connector, then the pair mounts on a single DIN rail under the KF7.
- ③ Using a KT7-25S-PNC23 to mount a KF7 with a standard CA7 with AC Coil requires two DIN rails.
The A1-A2 terminals of a standard CA7 with AC Coil can be turned to the load side. In this case a KT7-25S-PSC23 would not be required.
- ④ KF7 can not be mounted directly to a KT_7 using a PEK, PEC or PNC Connector. KF7, used in connection with a Compact Bus Bar, can provide Group Fusing protection for multiple bus bar connected KT_7.
- ⑤ For dimensions and wiring diagrams see page 44.

IEC Performance Data

Catalog Number KTA7-25S...32S																
		0.16A	0.25A	0.4A	0.63A	1A	1.6A	2.5A	4A	6.3A	10A	16A	20A	25A	29A	32A
Rated Operational Current, I_e	[A]	0.16	0.25	0.4	0.63	1	1.6	2.5	4	6.3	10	16	20	25	29	32
Magnetic Release Current	[A]	2.1	3.3	5.2	8.2	13	21	33	52	82	130	208	260	325	406	448
Switching of Standard Three-Phase Motors																
AC-2, AC-3																
230/240V	[kW]	~	~	0.06	0.09	0.18	0.25	0.37	0.75	1.5	2.2	4.0	5.5	5.5	7.5	7.5
400/415V	[kW]	0.02	0.04	0.09	0.18	0.25	0.55	0.75	1.5	2.2	4.0	7.5	10	11	13	15
500V	[kW]	0.06	0.09	0.12	0.18	0.37	0.75	1.1	2.2	3.0	6.3	10	11	15	18.5	20
690V	[kW]	0.06	0.09	0.18	0.25	0.55	1.1	1.8	3.0	4.0	7.5	13	17	22	25	25
Back-up Fuses																
gG, gL, only if $I_{cc} \geq I_{cu}$																
230/240V	[A]	1	1	1	1	1	1	1	1	1	1	1	100	100	125	125
400/415V	[A]	1	1	1	1	1	1	1	1	1	1	80	100	100	125	125
440/460V	[A]	1	1	1	1	1	1	1	1	1	63	63	80	80	100	100
500V	[A]	1	1	1	1	1	1	1	1	1	80	80	80	80	100	100
690V	[A]	1	1	1	1	1	16	20	35	50	50	63	63	63	80	80
Ultimate Short-Circuit Breaking Capacity																
I_{cu}																
230/240V	[kA]	100	100	100	100	100	100	100	100	100	100	100	65	65	50	50
400/415V	[kA]	100	100	100	100	100	100	100	100	100	100	65	50	15	15	15
440/460V	[kA]	100	100	100	100	100	100	100	100	100	50	10	6	6	6	6
500V	[kA]	100	100	100	100	100	100	100	100	100	50	10	6	6	6	6
690V	[kA]	100	100	100	100	100	8	6	6	4	4	3	3	3	3	3
Rated Service Short-Circuit Breaking Capacity																
I_{cs}																
230/240V	[kA]	100	100	100	100	100	100	100	100	100	100	100	50	50	25	25
400/415V	[kA]	100	100	100	100	100	100	100	100	100	100	50	15	15	15	15
440/460V	[kA]	100	100	100	100	100	100	100	100	100	50	6	6	6	6	6
500V	[kA]	100	100	100	100	100	100	100	100	100	50	6	6	6	6	6
690V	[kA]	100	100	100	100	100	8	6	6	4	4	3	3	3	3	3

1 No backup fuse required.

IEC Performance Data

Catalog Number KTA7-25H...32H											Catalog Number KTA7-45H...						
		2.5A	4A	6.3A	10A	16A	20A	25A	29A	32A	10A	16A	20A	25A	32A	45A	
Rated Operational Current, I_e		[A]	2.5	4	6.3	10	16	20	25	29	32	10	16	20	25	32	45
Magnetic Release Current		[A]	33	52	82	130	208	260	325	406	448	130	208	260	325	416	585
Switching of Standard Three-Phase Motors																	
AC-2, AC-3																	
230/240V	[kW]	0.37	0.75	1.5	2.2	4.0	5.5	5.5	7.5	7.5	2.2	4.0	5.5	6.3	7.5	13	
400/415V	[kW]	0.75	1.5	2.2	4.0	7.5	10	11	13	15	4.0	7.5	10	11	15	22	
500V	[kW]	1.1	2.2	3.0	6.3	10	11	15	18.5	20	6.3	10	11	15	20	30	
690V	[kW]	1.8	3.0	4.0	7.5	13	17	22	25	25	7.5	13	17	22	30	40	
Back-up Fuses																	
gG, gL, only if $I_{cc} \geq I_{cu}$																	
230/240V	[A]	①	①	①	①	①	①	①	①	①	①	①	①	①	①	①	
400/415V	[A]	①	①	①	①	①	100	100	125	125	80	100	100	100	125	125	
440/460V	[A]	①	①	①	①	80	100	100	125	125	80	100	100	100	125	125	
500V	[A]	①	①	①	①	80	80	80	100	100	80	100	100	100	125	125	
690V	[A]	20	35	50	50	63	63	63	80	80	63	80	80	80	100	100	
Ultimate Short-Circuit Breaking Capacity																	
I_{cu}																	
230/240V	[kA]	100	100	100	100	100	100	100	65	65	100	100	100	100	100	100	
400/415V	[kA]	100	100	100	100	100	100	65	50	50	100	100	100	100	65	65	
440/460V	[kA]	100	100	100	50	50	50	50	25	25	65	65	65	65	65	50	
500V	[kA]	100	100	100	50	50	50	50	25	25	50	50	50	50	50	50	
690V	[kA]	10	10	6	6	6	6	6	6	6	10	10	10	10	10	10	
Rated Service Short-Circuit Breaking Capacity																	
I_{cs}																	
230/240V	[kA]	100	100	100	100	100	100	100	50	50	100	100	100	100	100	100	
400/415V	[kA]	100	100	100	100	50	25	25	25	25	50	50	50	50	50	50	
440/460V	[kA]	100	100	100	50	50	25	25	20	20	50	50	50	50	50	50	
500V	[kA]	100	100	100	50	50	25	25	20	20	50	50	50	50	50	50	
690V	[kA]	10	10	6	6	4	4	4	4	4	10	10	10	10	6	6	

① No backup fuse required.

IEC Performance Data

		Catalog Number KTB7-25S...						
		0.16A	0.25A	0.4A	0.63A	1A	1.6A	2.5A
Rated Operational Current, I_e	[A]	0.16	0.25	0.4	0.63	1	1.6	2.5
Magnetic Release Current	[A]	2.1	3.3	5.2	8.2	13	21	32
Switching of Standard Three-Phase Motors								
AC-2, AC-3								
230/240V	[kW]	~	~	0.06	0.09	0.18	0.25	0.37
400/415V	[kW]	0.02	0.04	0.09	0.18	0.25	0.55	0.75
500V	[kW]	0.06	0.09	0.12	0.18	0.37	0.75	1.1
690V	[kW]	0.06	0.09	0.18	0.25	0.55	1.1	1.8
Back-up Fuses								
gG, gL, only if $I_{cc} \geq I_{cu}$								
230/240V	[A]	1	1	1	1	1	1	1
400/415V	[A]	1	1	1	1	1	1	1
440/460V	[A]	1	1	1	1	1	1	1
500V	[A]	1	1	1	1	1	1	1
690V	[A]	1	1	1	1	1	16	20
Ultimate Short-Circuit Breaking Capacity								
I_{cu}								
230/240V	[kA]	100	100	100	100	100	100	100
400/415V	[kA]	100	100	100	100	100	100	100
440/460V	[kA]	100	100	100	100	100	100	100
500V	[kA]	100	100	100	100	100	100	100
690V	[kA]	100	100	100	100	100	10	6
Rated Service Short-Circuit Breaking Capacity								
I_{cs}								
230/240V	[kA]	100	100	100	100	100	100	100
400/415V	[kA]	100	100	100	100	100	100	100
440/460V	[kA]	100	100	100	100	100	100	100
500V	[kA]	100	100	100	100	100	100	100
690V	[kA]	100	100	100	100	100	8	6

1 No backup fuse required.

IEC Performance Data

		Catalog Number KTB7-25H...32H							Catalog No. KTB7-45H...		
		2.5A	4A	6.3A	10A	16A	25A	32A	25A	32A	45A
Rated Operational Current, I_e	[A]	2.5	4	6.3	10	16	25	32	25	32	45
Magnetic Release Current	[A]	32	52	82	130	208	325	448	325	416	585
Switching of Standard Three-Phase Motors											
AC-2, AC-3											
230/240V	[kW]	0.37	0.75	1.5	2.2	4.0	5.5	7.5	6.3	7.5	13
400/415V	[kW]	0.75	1.5	2.2	4.0	7.5	11	15	11	15	22
500V	[kW]	1.1	2.2	3.0	6.3	10	15	20	15	20	30
690V	[kW]	1.8	3.0	4.0	7.5	13	22	25	22	25	40
Back-up Fuses											
gG, gL, only if $I_{cc} \geq I_{cu}$											
230/240V	[A]	①	①	①	①	①	①	①	100	125	125
400/415V	[A]	①	①	①	①	①	100	125	100	125	125
440/460V	[A]	①	①	①	①	80	100	125	100	125	125
500V	[A]	①	①	①	①	80	80	100	100	125	125
690V	[A]	20	35	50	50	63	63	80	80	100	100
Ultimate Short-Circuit Breaking Capacity											
I_{cu}											
230/240V	[kA]	100	100	100	100	100	100	65	100	100	100
400/415V	[kA]	100	100	100	100	100	65	50	100	65	65
440/460V	[kA]	100	100	100	50	50	50	25	65	65	50
500V	[kA]	100	100	100	50	50	25	25	50	50	50
690V	[kA]	10	6	10	6	6	6	6	10	10	10
Rated Service Short-Circuit Breaking Capacity											
I_{cs}											
230/240V	[kA]	100	100	100	100	100	100	50	100	100	100
400/415V	[kA]	100	100	100	100	50	25	25	50	50	50
440/460V	[kA]	100	100	100	50	50	25	20	50	50	50
500V	[kA]	100	100	100	50	50	25	20	50	50	50
690V	[kA]	10	6	10	6	4	4	4	10	6	6

① No backup fuse required.

F
KT7 Motor Circuit Controllers

IEC Performance Data

		Catalog Number KTC7-25S...										
		0.16A	0.25A	0.4A	0.63A	1A	1.6A	2.5A	4A	6.3A	10A	16A
Rated Operational Current, I_e	[A]	0.16	0.25	0.4	0.63	1	1.6	2.5	4	6.3	10	16
Magnetic Release Current	[A]	3.2	5.2	8.2	13	21	32	52	82	130	208	260
Switching of Standard Three-Phase Motors												
AC-2, AC-3												
230/240V	[kW]	~	~	0.06	0.09	0.18	0.25	0.37	0.75	1.5	2.2	4.0
400/415V	[kW]	0.02	0.04	0.09	0.18	0.25	0.55	0.75	1.5	2.2	4.0	7.5
500V	[kW]	0.06	0.09	0.12	0.18	0.37	0.75	1.1	2.2	3.0	6.3	10
690V	[kW]	0.06	0.09	0.18	0.25	0.55	1.1	1.8	3.0	4.0	7.5	13
Back-up Fuses												
gG, gL, only if $I_{cc} \geq I_{cu}$												
230/240V	[A]	ⓘ	ⓘ	ⓘ	ⓘ	ⓘ	ⓘ	ⓘ	ⓘ	ⓘ	ⓘ	ⓘ
400/415V	[A]	ⓘ	ⓘ	ⓘ	ⓘ	ⓘ	ⓘ	ⓘ	ⓘ	ⓘ	ⓘ	80
440/460V	[A]	ⓘ	ⓘ	ⓘ	ⓘ	ⓘ	ⓘ	ⓘ	ⓘ	ⓘ	63	80
500V	[A]	ⓘ	ⓘ	ⓘ	ⓘ	ⓘ	ⓘ	ⓘ	ⓘ	ⓘ	80	80
690V	[A]	ⓘ	ⓘ	ⓘ	ⓘ	ⓘ	16	20	35	50	50	63
Ultimate Short-Circuit Breaking Capacity												
I_{cu}												
230/240V	[kA]	100	100	100	100	100	100	100	100	100	100	100
400/415V	[kA]	100	100	100	100	100	100	100	100	100	100	50
440/460V	[kA]	100	100	100	100	100	100	100	100	100	10	10
500V	[kA]	100	100	100	100	100	100	100	100	100	10	10
690V	[kA]	100	100	100	100	100	8	6	6	4	4	3
Rated Service Short-Circuit Breaking Capacity												
I_{cs}												
230/240V	[kA]	100	100	100	100	100	100	100	100	100	100	100
400/415V	[kA]	100	100	100	100	100	100	100	100	100	100	15
440/460V	[kA]	100	100	100	100	100	100	100	100	100	10	6
500V	[kA]	100	100	100	100	100	100	100	100	100	10	6
690V	[kA]	100	100	100	100	100	8	6	6	4	4	3

ⓘ No backup fuse required.

IEC Performance Data

		Catalog No. KTC7-25H...		Catalog No. KTC7-45H...	
		16A	20A	25A	32A
Rated Operational Current, I_o	[A]	16	20	25	32
Magnetic Release Current	[A]	260	325	416	585
Switching of Standard Three-Phase Motors					
AC-2, AC-3					
230/240V	[kW]	4.0	5.5	6.3	7.5
400/415V	[kW]	7.5	10	11	15
500V	[kW]	10	11	15	20
690V	[kW]	13	17	22	30
Back-up Fuses					
gG, gL, only if $I_{cc} \geq I_{cu}$					
230/240V	[A]	❶	❶	❶	❶
400/415V	[A]	80	100	100	125
440/460V	[A]	80	100	100	125
500V	[A]	80	80	100	125
690V	[A]	63	63	80	100
Ultimate Short-Circuit Breaking Capacity					
I_{cu}					
230/240V	[kA]	100	100	100	100
400/415V	[kA]	100	65	65	65
440/460V	[kA]	50	25	65	65
500V	[kA]	50	25	50	50
690V	[kA]	6	6	10	10
Rated Service Short-Circuit Breaking Capacity					
I_{cs}					
230/240V	[kA]	100	100	100	100
400/415V	[kA]	25	25	50	50
440/460V	[kA]	25	25	50	50
500V	[kA]	25	25	50	50
690V	[kA]	4	4	6	6

❶ No backup fuse required.

IEC Performance Data

		Catalog Number KTV7-25H...									
		1.6A	2.5A	4A	6.3A	10A	16A	20A	25A	29A	32A
Rated Operational Current, I_e	[A]	1.6	2.5	4.0	6.3	10	16	20	25	29	32
Magnetic Release Current	[A]	82	82	82	82	130	208	260	325	402	448
Switching of Standard Three-Phase Motors											
AC-3											
230/240V	[kW]	0.25	0.37	0.75	1.5	2.2	4	5.5	5.5	7.5	7.5
400/415V	[kW]	0.55	0.75	1.5	2.2	4	7.5	10	11	13	15
500V	[kW]	0.75	1.1	2.2	3	6.3	10	11	15	18.5	20
690V	[kW]	~	~	~	~	~	~	~	~	~	~
Back-up Fuses											
gG, gL, only if $I_{cc} \geq I_{cu}$											
230/240V	[A]	ⓘ	ⓘ	ⓘ	ⓘ	ⓘ	ⓘ	ⓘ	ⓘ	ⓘ	ⓘ
400/415V	[A]	ⓘ	ⓘ	ⓘ	ⓘ	ⓘ	ⓘ	100	100	125	125
440/460V	[A]	ⓘ	ⓘ	ⓘ	ⓘ	ⓘ	80	100	100	125	125
500V	[A]	ⓘ	ⓘ	ⓘ	ⓘ	ⓘ	80	80	80	100	100
690V	[A]	~	~	~	~	~	~	~	~	~	~
Ultimate Short-Circuit Breaking Capacity											
I_{cu}											
230/240V	[kA]	65	65	65	65	65	65	65	65	65	65
400/415V	[kA]	65	65	65	65	65	65	65	65	50	50
440/460V	[kA]	65	65	65	65	65	50	50	50	25	25
500V	[kA]	65	65	65	65	65	50	50	50	25	25
690V	[kA]	~	~	~	~	~	~	~	~	~	~
Rated Service Short-Circuit Breaking Capacity											
I_{cs}											
230/240V	[kA]	65	65	65	65	65	65	65	65	50	50
400/415V	[kA]	65	65	65	65	65	50	25	25	25	25
440/460V	[kA]	65	65	65	65	65	50	25	25	20	20
500V	[kA]	65	65	65	65	65	50	25	25	20	20
690V	[kA]	~	~	~	~	~	~	~	~	~	~

ⓘ No backup fuse required.

General Data

		KT7-25S/32S	KT7-25H/32H	KT7-45H
Rated Insulation Voltage IEC, SEV, VDE 0660 UL, CSA		690V 600V	690V 600V	690V 600V
Rated Impulse Withstand Voltage (main & auxiliary circuits) U_{imp} /pollution degree		6kV/3	6kV/3	6kV/3
Rated Frequency		50/60 Hz	50/60 Hz	50/60 Hz
Utilization Category • IEC 60949-2 (Motor Protector) • IEC 60949-4-1 (Motor Starter)		A AC-3	A AC-3	A AC-3
Life Span Mechanical Electrical (I_e max.)	[operations] [operations]	100,000 100,000	100,000 100,000	30,000 30,000
Switching Frequency	[operations]	max. 25/h. (motor starts)		
Ambient Temperature Storage Operation		-40° C...+80° C -25° C...+60° C		
Resistance to Climatic Change		IEC 68-2		
Moisture / Heat Resistance	(600068-2-3)	40°C, 93% relative humidity, 56 days		
Moisture / Change Resistance	(600068-2-3)	23°C, 83% relative humidity / 40°C, 92%, 56 cycles		
Dry Heat	(60086-2-2)	100°C Relative Humidity <50% 7 Days		
Site Altitude		to 2,000 m N.N.		
Protection Class		KT 7-25/32 : IP2X from all directions KT 7-45: IP2X from front with front (upper) terminal wired		
Resistance to Shock	(60068-2-2)	30 G, 11 ms All Axes		
Resistance to Vibration	(60068-2-6)	5G		
Rated Thermal Current I_{th} IEC, SEV, VDE 0660 Up to 60° C ambient temperature	[A]	0.1...32	1.6...32	6.3...45
Dependence on Temperature		40°C - 60°C No Reduction 70°C 15% Reduction of the upper rated current I_e		
Overload Protection Characteristics Ambient temperature Compensation Phase-failure protection Trip Class		IEC60947-4-1 Motor protection (except KTB7) -20° C...+60° C yes, differential release 10 (Except KTB7)		
Magnetic Release Response Current (+/- 20%)		fixed setting 13...14 x / $I_{e,max}$. (for KTA7/CTB7) 16...21 x / $I_{e,max}$. (for KTC7) $I_{e,max}$ = maximum values of setting ranges Fixed magnetic setting for KTV7, see ratings		
Total Power Loss P_v Motor protector at rated load Operating temperature	[W]	6...11.5	6...11.6	9...16
Application Conditions (KTV7)		PWM frequency ≤ 4kHz VFD output frequency ≤ 400 Hz		

Weights

Description	Catalog Number	Weight	Description	Catalog Number	Weight
Motor Protectors	KTA7-25S/32S	317 g	Lockable Twist Knob	KT7-KN1	5 g
	KTA7-25H/32H	373 g	Locking Tag	KT7-KRY1	30 g
	KTA7-45H	782 g	Door Coupling Handle	KT7-HTN	123 g
	KT7-25S/32S	315 g	Extension Shaft	KT7-HT	46 g
	KT7-25H/32H	365 g	Legend Plate	KT7-HTFC	4 g
	KT7-45H	782 g	Feeder Terminal	KT7-32-A3E	172 g
	KTC7-25S/32S	315 g		KT7-45-A3E	47 g
	KTC7-25H/32H	365 g		KT7-32-DB-45-2	80 g
	KTC7-45H	782 g		KT7-32-DB-45-3	104 g
	KT7-PE1	10 g		KT7-32-DB-45-4	132 g
Auxiliary Contacts	KT7-PA1	15 g	Commoning Links	KT7-32-DB-45-5	52 g
	KT7-PEF1	15 g		KT7-32-DB-54-2	86 g
	KT7-PAF1	15 g		KT7-32-DB-54-3	118 g
Undervoltage Trip	KT7-UA-*	108 g		KT7-32-DB-54-4	154 g
	KT7-AA-*	110 g			
	KT7-UA-L20-*	116 g			
Anti-Tamper Cover	KT7-25-CA	2 g			

General Data



KT_7-25S/32S



KT_7-25H/32H



KT_7-45H

Features and Approvals

Max. Current I_n	32 A	32 A	45 A
Current Rating	0.1...32 A	1.6...32 A	6.3...45 A
Short Circuit Protection	✓	✓	✓
Standard magnetic Trip	✓	✓	✓
High Magnetic Trip	✓	✓	✓
Magnetic Only Trip (MCP)	✓	✓	✓
Overload Protection	✓	✓	✓
Trip Class	✓	✓	✓
Application at output of VFD (multi-motor)		✓ (KTV7)	✓

Standards Compliance:

CSA22.2, No. 14	✓	✓	✓
UL508 (Group Installation)	✓ (see ratings)	✓ (see ratings)	✓ (see ratings)
UL508 Manual, Self-protected (Type E)	✓ (see ratings)	✓ (see ratings)	✓ (see ratings)
UL508 (Overload Protection)	✓	✓	✓
IEC60947-1,-2	✓	✓	✓
IEC60947-4-1	✓	✓	✓
CE	✓	✓	✓
ATEX (IEC60079-14)	✓ (up to 25 A)	✓ (up to 25 A except KTV7)	✓
CCC	✓ (up to 25 A)	✓ (up to 25 A except KTV7)	✓

Accessories

External Rotary Operator	✓	✓	✓
Auxiliary Contacts	✓	✓	✓
Trip Indicator Contacts	✓	✓	✓

KT_7-25S/32S

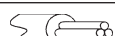
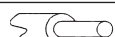
KT_7-25H/32H

KT_7-45H

Power Terminals

Terminal Type				
Screwdriver		Pozidrive No. 2/Blade No. 3		Pozidrive No. 2/Blade No. 3
	1 conductor	[mm²]/[AWG]	1...6 / No. 16...10	2.5...16 / No. 14...4
	2 conductor	[mm²]/[AWG]	1...4 / No. 16...10	2.5...10 / No. 14...4
	1 conductor	[mm²]/[AWG]	1.5...6 / No. 16...8	2.5...16 / No. 14...4
	2 conductor	[mm²]/[AWG]	1.5...6 / No. 16...8	2.5...10 / No. 14...4
	1 conductor	[mm²]/[AWG]	1...6 / No. 16...10	2.5...10 / No. 14...8
	2 conductor	[mm²]/[AWG]	1...6 / No. 16...10	2.5...10 / No. 14...8
Tightening torque		[Nm]/[lb-in.]	2...2.5 / 18...22	3...3.5 / 27...30

Accessories for KT7 Motor Circuit Controllers

Auxiliary Contact Blocks for Front Mounting Catalog Number KT7-PE1, KT7-PEF1					Auxiliary Contact Blocks for Right-Side Mounting Catalog Number KT7-PA1, KT7-PAF1				
IEC Rated Thermal Current I_{th}									
Rated Voltage	[V]	300 max.			600 max.				
at 40°C ambient temperature	[A]	5			10				
at 60°C ambient temperature	[A]	4			6				
UL/CSA Rated Thermal Current I_{th}									
Rated Voltage	[V]	300 max.			600 max.				
Continuous Thermal Current	AC	Class	Amps		Class	Amps			
According to NEMA ①	DC	B 300	5		B 600	5			
		Q 300	2.5		Q 600	2.5			
Back-Up Fuses gG, gL					10				
[A]					10				
Rated Thermal Current I_{th}									
AC-15	[V]	24	120	240	24	120	240	415	690
	[A]	4	3	1.5	6	5	3	2	0.7
DC-13	[V]	24	120	240	24	120	240	415	
	[A]	2	0.5	0.25	2	0.5	0.25	0.15	
Terminal Parts									
Terminal Type									
Screwdriver					Pozidrive No. 2/Blade No. 3				
					0.5...1.5 / No. 18...14				
1 conductor [mm²]/[AWG]					0.5...2.5 / No. 18...14				
2 conductor [mm²]/[AWG]					0.75...2.5 / No. 18...14				
					0.75...1.5 / No. 18...14				
1 conductor [mm²]/[AWG]					0.75...2.5 / No. 18...14				
2 conductor [mm²]/[AWG]					0.75...2.5 / No. 18...14				
					0.75...1.5 / No. 18...14				
1 conductor [mm²]/[AWG]					0.75...2.5 / No. 18...14				
2 conductor [mm²]/[AWG]					0.75...2.5 / No. 18...14				
Tightening torque [Nm]/[lb-in.]					1.2...1.5 / 10.6...13				
1.2...1.5 / 10.6...13					1.2...1.5 / 10.6...13				
Lockable Twist Knob (KT7-KN1 & KT7-KRY1)									
Tightening torque [Nm]/[lb-in.]					1 / 8.8 (T10)				
Mounting Depth – Door Coupling Handles (All KT7-HT...)									
Mounting Depth when using motor circuit controller:									
KT7-25S/32S [mm]/[in.]					105.5 mm ± 5 mm (4.15" ± 3/16")				
KT7-25H/32H [mm]/[in.]					114.5 mm ± 5 mm (4.5" ± 3/16")				
KT7-45H [mm]/[in.]					137.1 mm ± 5 mm (5.4" ± 3/16")				
Mounting Depth – Extension Shaft (KT7-HT)									
Mounting Depth range when using motor circuit controller:									
KT7-25S/32S [mm]/[in.]					117...338 mm (4.6" ...13.3")				
KT7-25H/32H [mm]/[in.]					126...347 mm (5.0" ...13.7")				
KT7-45H [mm]/[in.]					149...369 mm (5.9" ...14.5")				

① See page A7 for details of NEMA Contact Class.

KT7 Accessories

		Undervoltage Trip for Left-Side Mounting Cat. Number KT7-UA-*	Undervoltage Trip with 2 Auxiliary Contacts for Left-Side Mounting Cat. Number KT7-UA-L20-*	Shunt Trip for Left-Side Mounting Cat. Number KT7-AA-*
Actuating Voltage	Pull-in Drop-out	0.85...1.1 x U_s 0.7...0.35 x U_s	0.85...1.1 x U_s 0.7...0.35 x U_s	0.7...1.1 x U_s
Rated Control Voltage	minimum maximum	21V 50 Hz, 24V 60 Hz 600V 50 Hz	21V 50 Hz, 24V 60 Hz 600V 50 Hz	21V 50 Hz, 24V 60 Hz 600V 50 Hz
On-Time		100%	100%	AC - 100% DC - Max. 5 sec.
Coil Rating	Pull-in Hold	8.5 VA, 8 W 4 VA, 2 W	8.5 VA, 8 W 4 VA, 2 W	8.5 VA, 8 W 4 VA, 2 W

Terminal Parts

Terminal Type

Screwdriver



POZIDRIVE No. 2/BLADE No. 3



1 conductor

[mm²]/[AWG]

0.5...2.5 / No. 18...14

2 conductor

[mm²]/[AWG]

0.75...2.5 / No. 18...14



1 conductor

[mm²]/[AWG]

0.75...2.5 / No. 18...14

2 conductor

[mm²]/[AWG]

0.75...2.5 / No. 18...14



1 conductor

[mm²]/[AWG]

0.75...2.5 / No. 18...14

2 conductor

[mm²]/[AWG]

0.75...2.5 / No. 18...14

Tightening torque

[Nm]/[lb-in.]

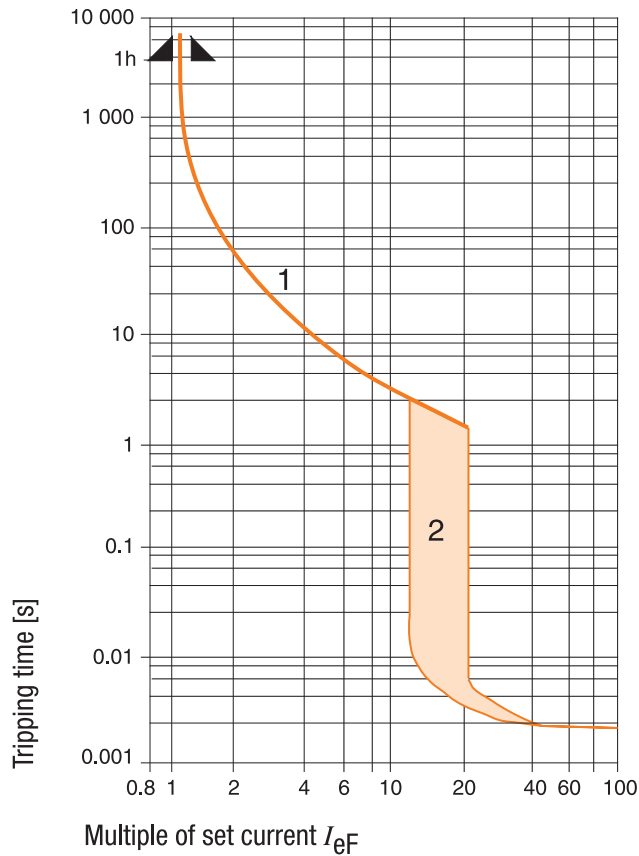
1.2...1.5 / 10.6...13.3

			Feeder Block KT7-25-A2E	Feeder Terminal KT7-32-A3E	Compact Busbar KT7-32-DB...	Feeder Terminal KT7-45-A3E	Compact Busbar KT7-45-DB...
Rated Thermal Current I_{th}		[V]	600	600	600	600	600
at 60° C ambient temperature		[A]	64	64	64	120	120
	1 conductor	[mm²]/[AWG]	4...25/No. 10...4	2.5...25/No. 14...4	~	4...50/12...1/0	~
	1 conductor	[mm²]/[AWG]	4...25/No. 10...4	2.5...25/No. 14...4	~	2.5...50/12...1/0	~
	1 conductor	[mm²]/[AWG]	2.5...25/No. 14...4	2.5...25/No. 14...4	~	2.5...50/12...1/0	~
Tightening torque		[Nm]/[lb-in.]	3...3.5 / 27...31	3...3.5 / 27...31	~	5...6/45...54	~

KF7 Fuse Holder Accessories

			KF7 Fuse Holder
Rated Thermal Current I_{th}		[V]	600
at 60° C ambient temperature		[A]	30
Short Circuit			
Withstand		[KA]	200
U_{imp}		[KV]	6
Terminal Parts			
Terminal Type			
Screwdriver			Pozidrive No. 2/ Blade No. 3
	1 conductor	[mm²]/[AWG]	1...4 / No. 16...10
	1 conductor	[mm²]/[AWG]	1...4 / No. 16...10
Tightening torque		[Nm]/[lb-in.]	1.7 / 15

Time-Current Characteristic



KTA7 Motor Protection (for KTV7, see ratings)

1. Thermal Release Trip Current

The adjustable current-dependent delayed bimetal release protects motors against overload. The curve shows the mean operating current at an ambient temperature of 20°C starting from the cold state. Careful testing and setting ensures effective motor protection even in the case of single-phasing. The overload characteristic is also valid for transformer protection.

2. Magnetic Release Trip Current

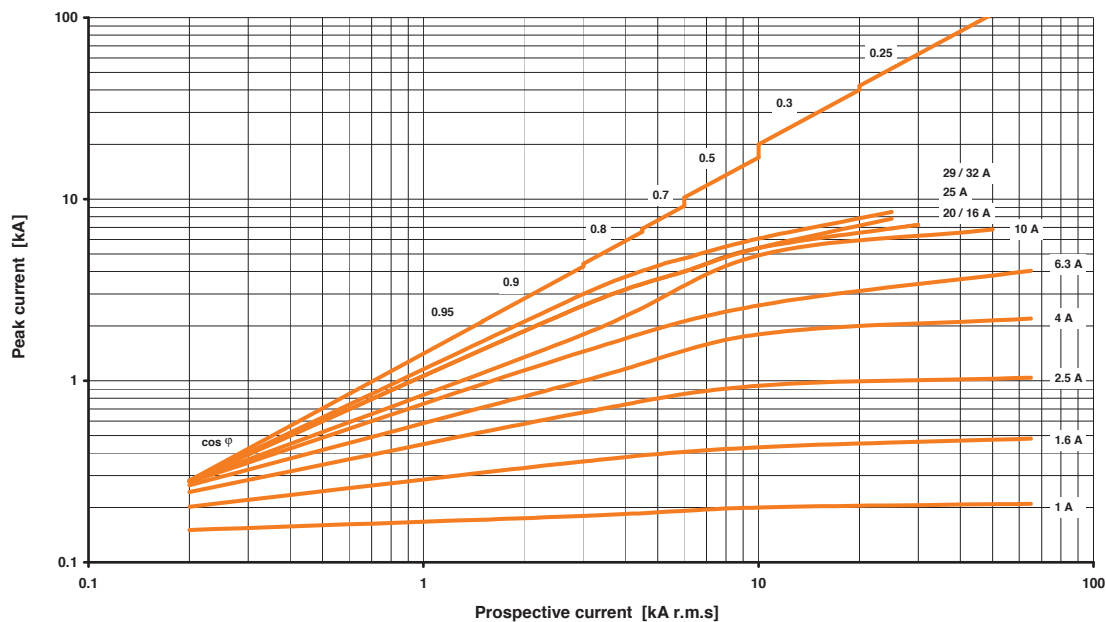
The instantaneous magnetic trip has a fixed operating current setting. This corresponds to 13 times the maximum value of setting range (high inrush protection $\sim 20 \times I_e$ maximum). At a lower overload setting the magnetic trip is correspondingly higher.

Current Setting I_{ef}

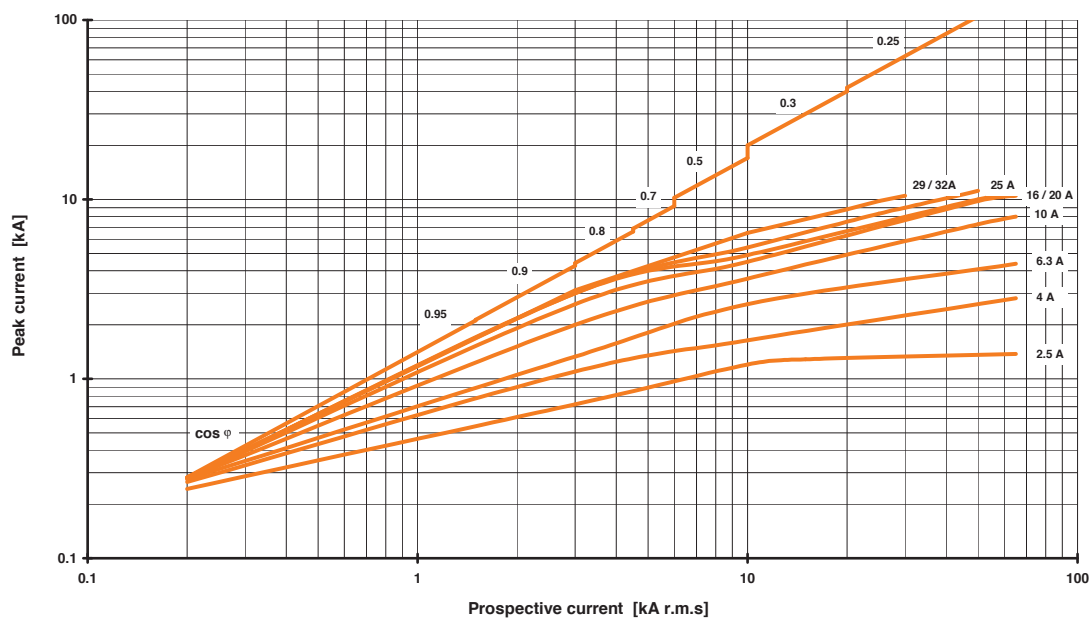
The overload trip corresponds to a thermal overload relay in a motor starter conforming to IEC 947-4-1. If a different value is prescribed (e.g., reduced I_e for cooling medium having a temperature higher than 40°C or a place of installation higher than 2000m above sea level), the setting current is equal to the reduced rated current I_e of the motor.

Cut-off Current ❶

KT A/B/C7-25/32S
Max. Cut-Off-Current, $U_e = 500V$



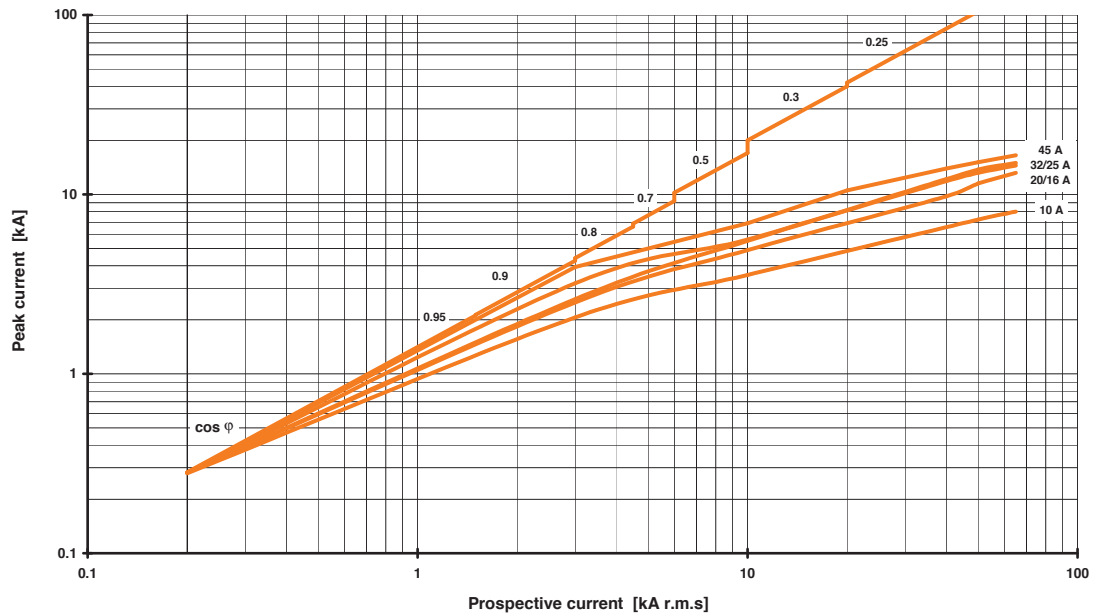
KT A/B/C7-25/32H
Max. Cut-Off Current, $U_e = 500V$



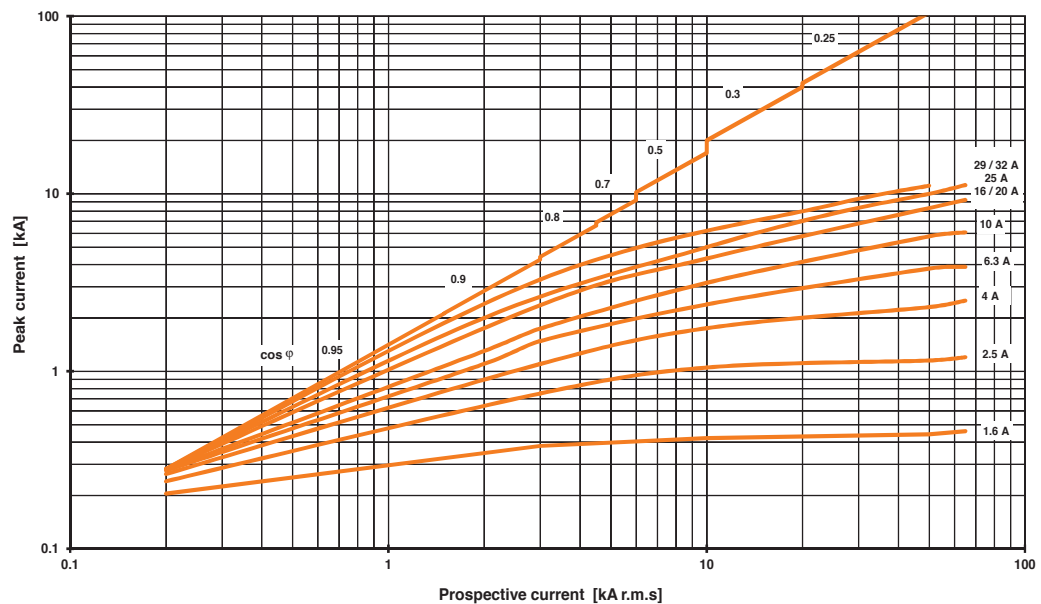
❶ A full size (8-1/2 x 11) set of "Maximum Cut-Off Current (Let-Thru Current)" and "Maximum Let-thru Energy (i^2t)" curves for 400...415V, 500V and 690V can be downloaded from <http://www.sprecherschuh.com>.

Cut-off Current ❶

KTA/B/C7-45H
Max. Cut-Off Current, $U_e = 500V$

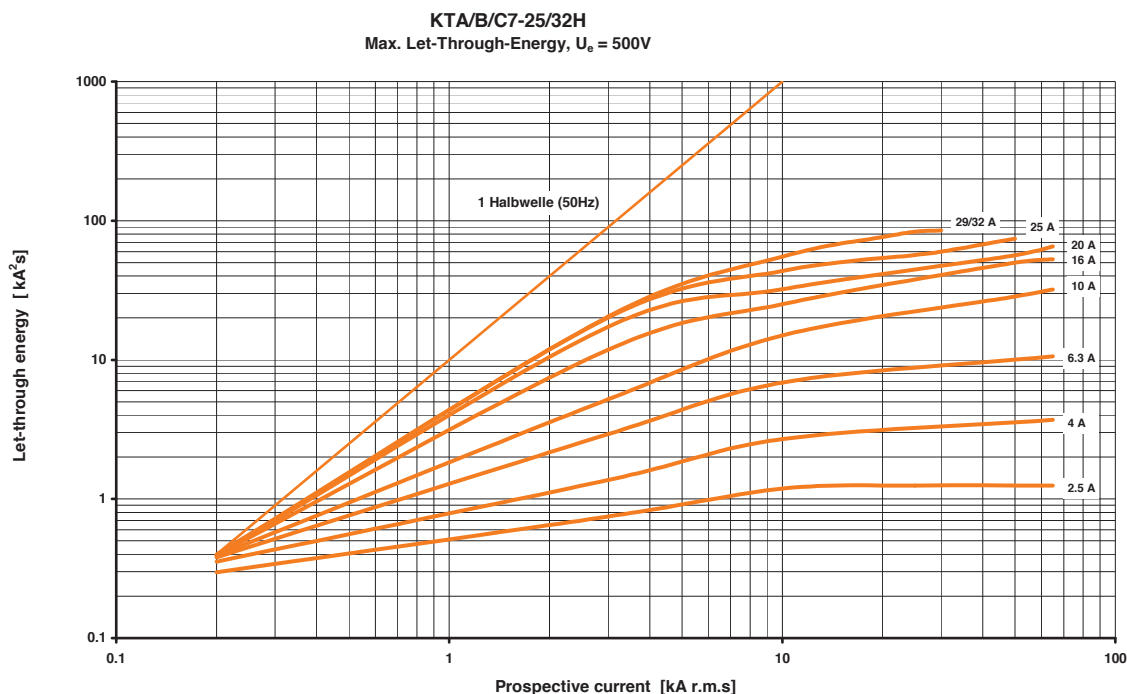
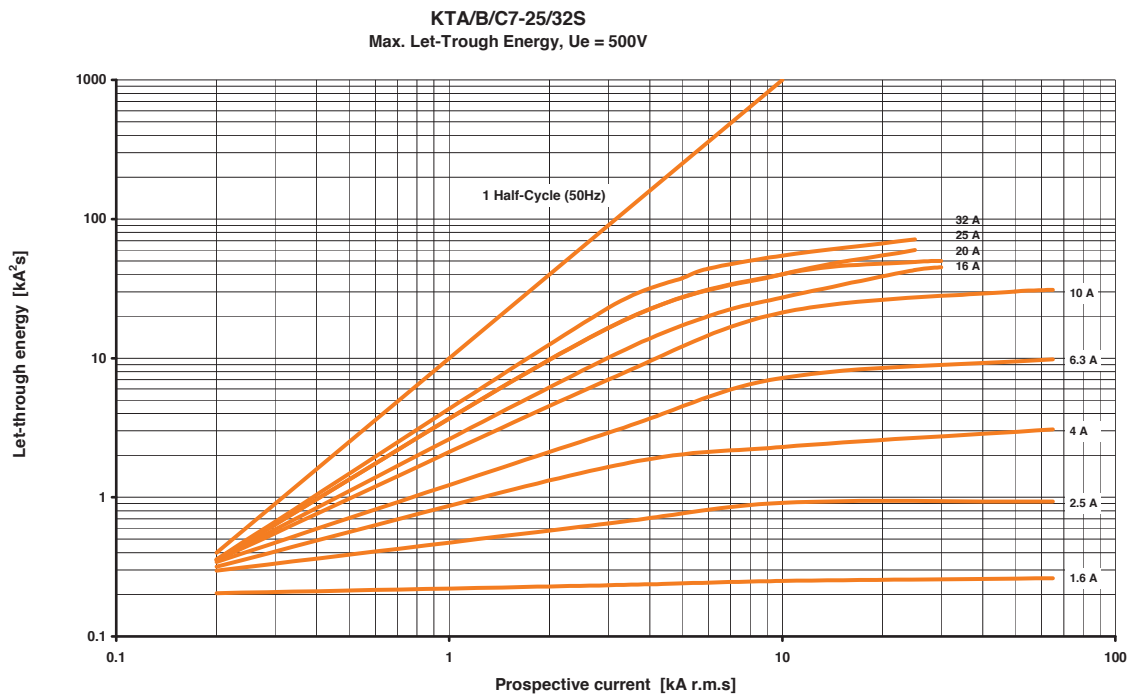


KTV7
Max. Cut-Off Current, $U_e = 400...415V$



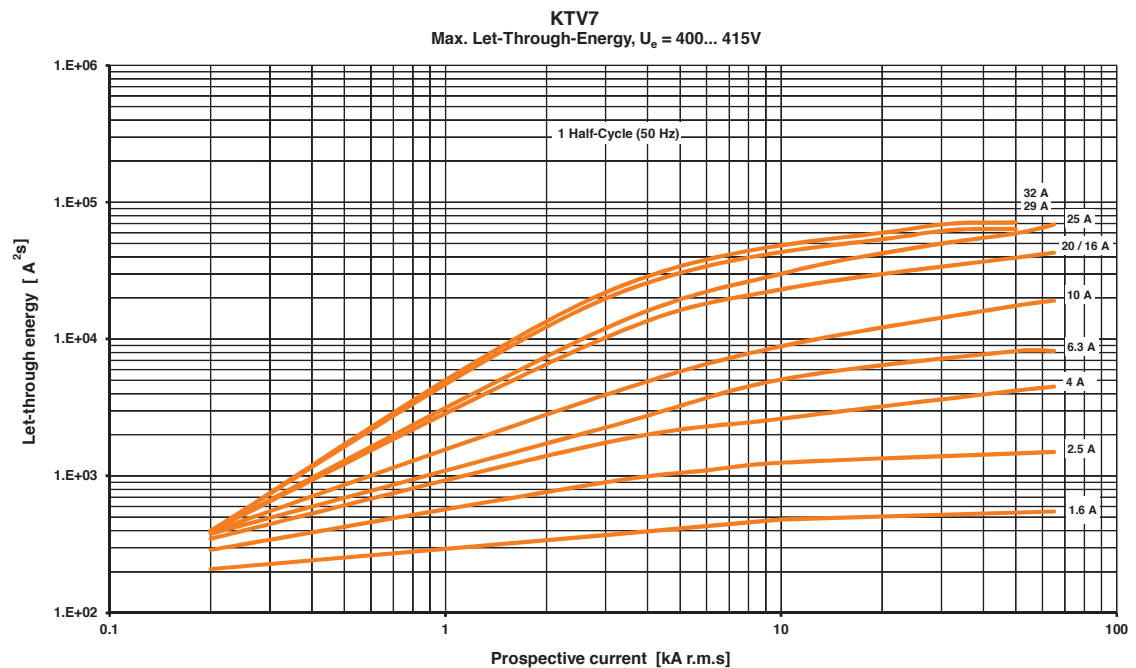
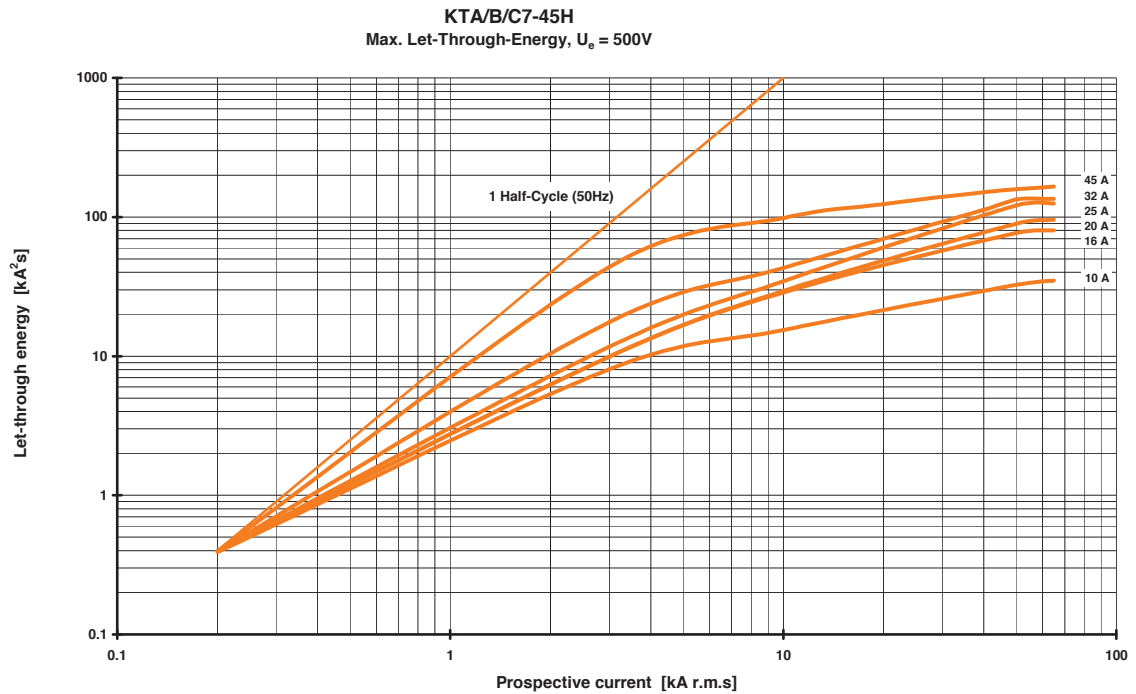
❶ A full size (8-1/2 x 11) set of "Maximum Cut-Off Current (Let-Thru Current)" and "Maximum Let-thru Energy (I^2t)" curves for 400...415V, 500V and 690V can be downloaded from <http://www.sprecherschuh.com>.

Let-Through Energy ❶



❶ A full size (8-1/2 x 11) set of "Maximum Cut-Off Current (Let-Thru Current)" and "Maximum Let-thru Energy (I²t)" curves for 400...415V, 500V and 690V can be downloaded from <http://www.sprecherschuh.com>.

Let-Through Energy ❶

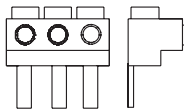


❶ A full size (8-1/2 x 11) set of "Maximum Cut-Off Current (Let-Thru Current)" and "Maximum Let-thru Energy (I^2t)" curves for 400...415V, 500V and 690V can be downloaded from <http://www.sprecherschuh.com>.

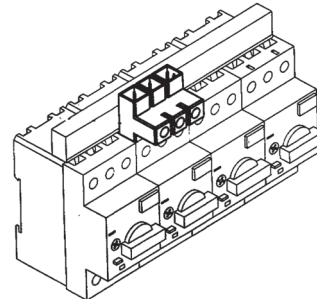
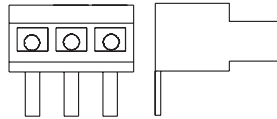
KT7/KTB7 & KTC7 Bus Bar and Supply Blocks

Dimensions are in millimeters (inches). Dimensions not intended for manufacturing purposes.

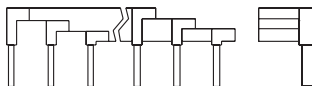
KT7-32-A3E



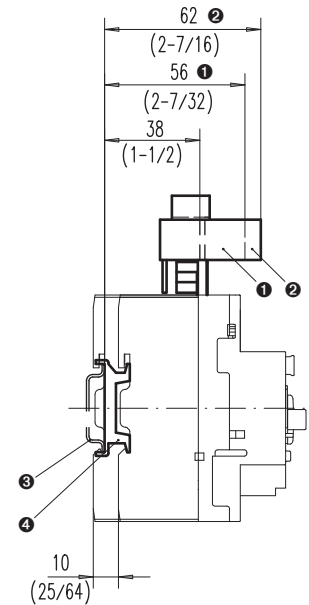
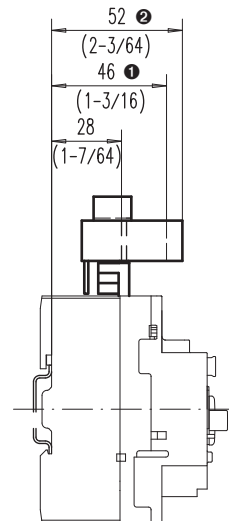
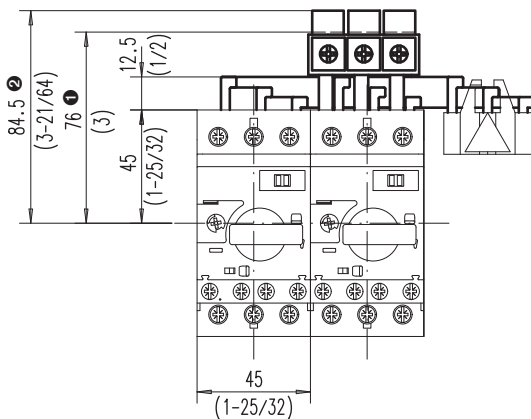
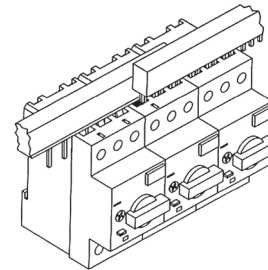
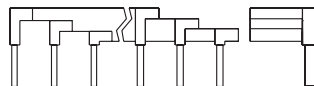
KT7-45-A3E



KT7-32-DB



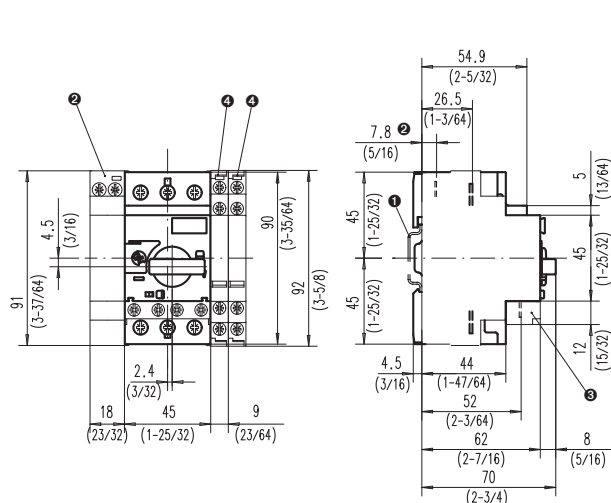
KT7-45-DB



- ① Compact Busbar Feeder Terminal IEC
- ② Compact Busbar Feeder Terminal UL type E and IEC
- ③ Mounting on 35 mm DIN Rail
- ④ Top Hat Rail Adapter 10 mm

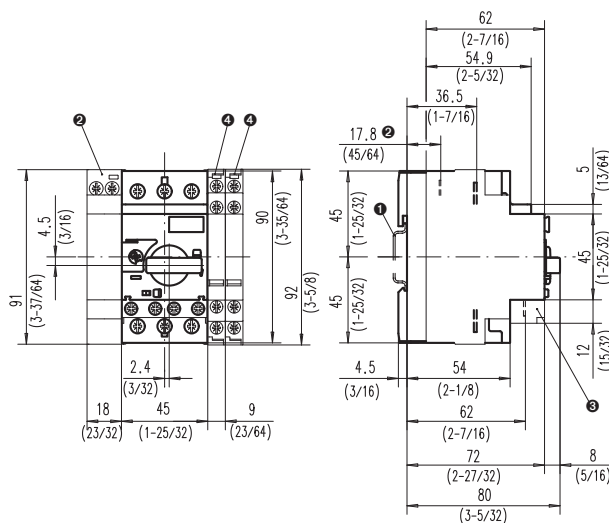
KT_7-25/32 Motor Circuit Controllers (without Terminal Adaptor KT7-25-TE1)

Dimensions are in millimeters (inches). Dimensions not intended for manufacturing purposes.



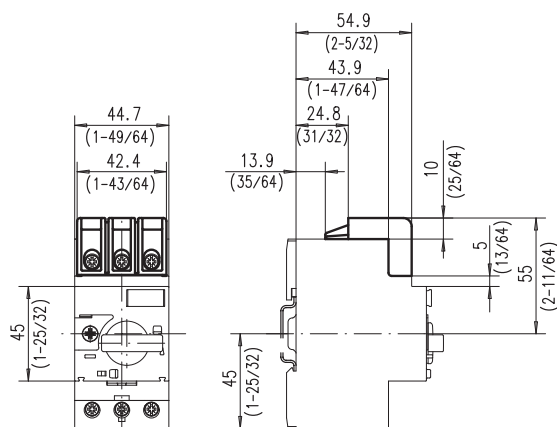
KT_7-25S/32S

- ① Mounting on 35 mm DIN rail
- ② Undervoltage/shunt trip
- ③ Auxiliary contact (front mounted)
- ④ Auxiliary contact (side mounted)

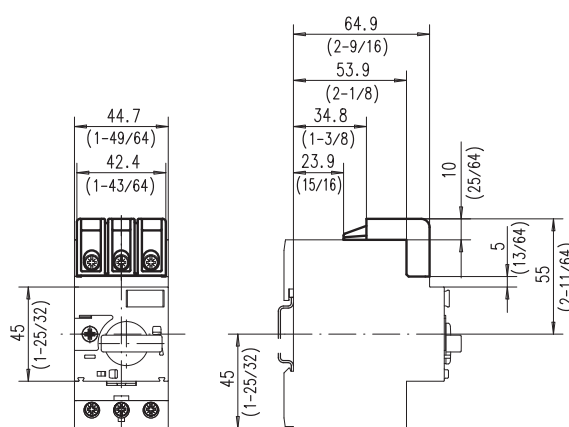


KT_7-25H/32H

KT_7-25/32 Motor Circuit Controllers (with Terminal Adaptor KT7-25-TE1)



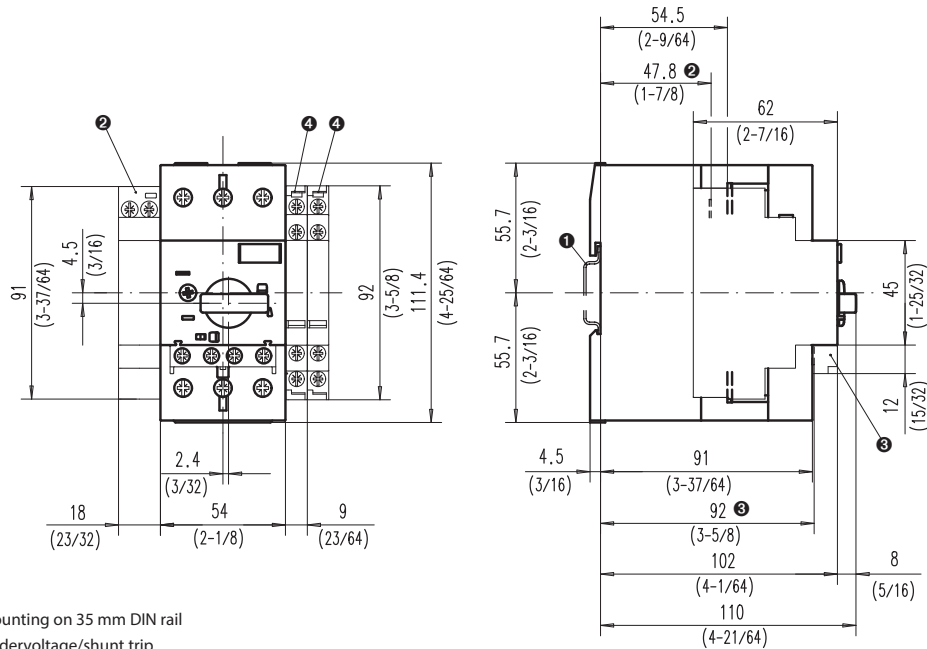
KT_7-25S/32S



KT_7-25H/32H

KT_7-45H Motor Circuit Controllers (without Terminal Adaptor KT7-45-TE)

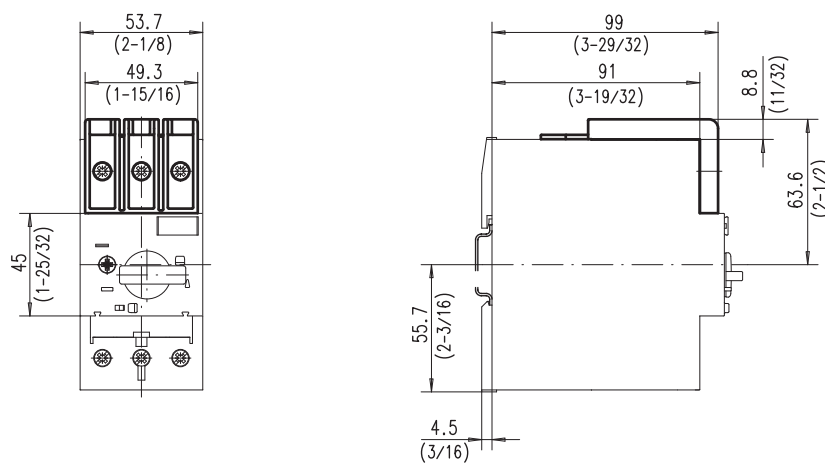
Dimensions are in millimeters (inches). Dimensions not intended for manufacturing purposes.



- ❶ Mounting on 35 mm DIN rail
- ❷ Undervoltage/shunt trip
- ❸ Auxiliary contact (front mounted)
- ❹ Auxiliary contact (side mounted)

KT_7-45H

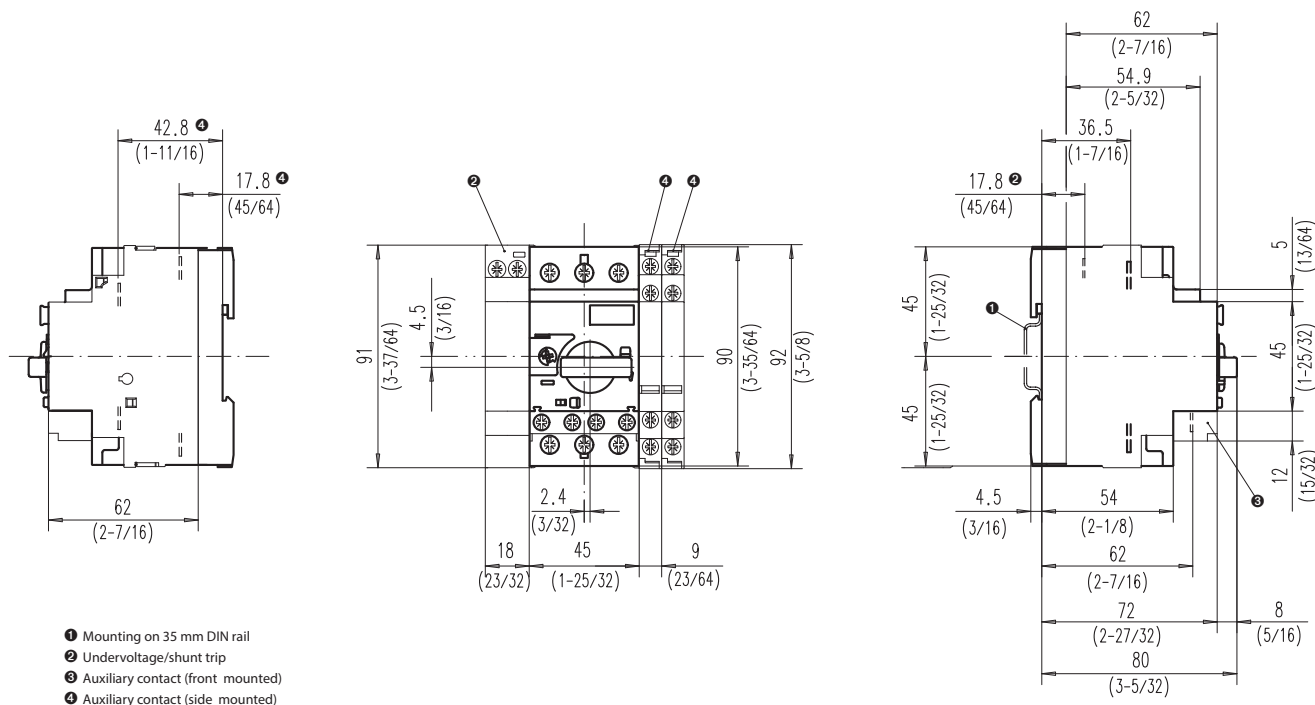
KT_7-45H Motor Circuit Controllers (with Terminal Adaptor KT7-45-TE)



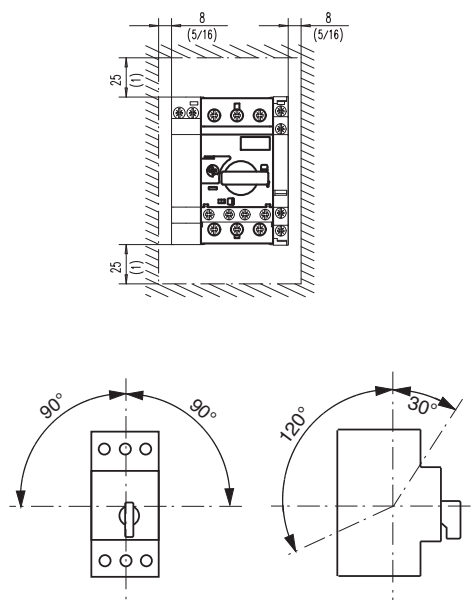
KT_7-45H

KTV7-25/32 Motor Circuit Controllers

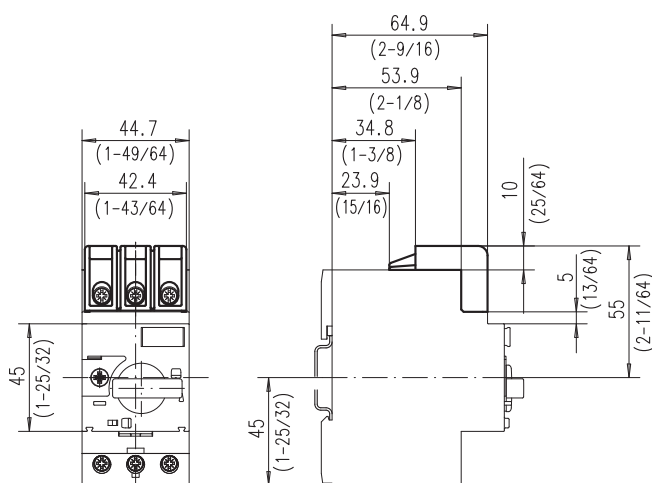
Dimensions are in millimeters (inches). Dimensions not intended for manufacturing purposes.



Minimum distance to grounded parts or walls

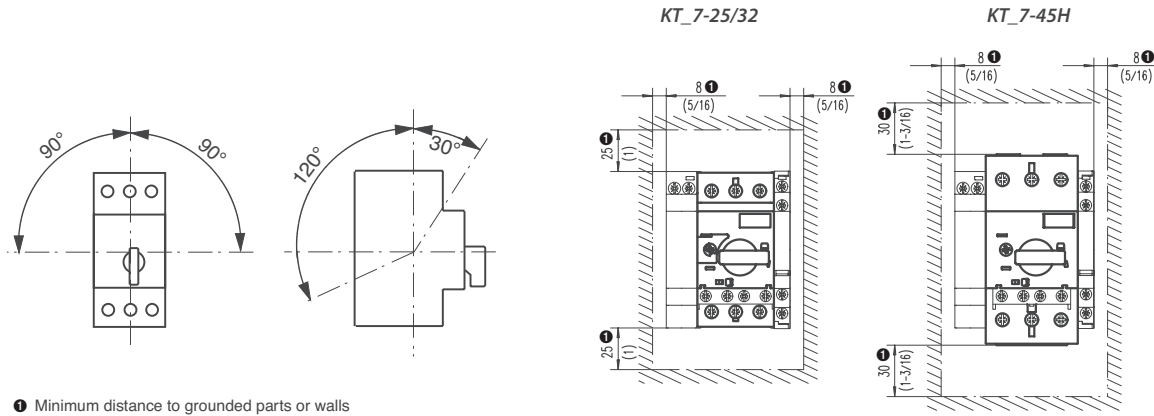


KT7-TE1 Type E adapter on KTV7

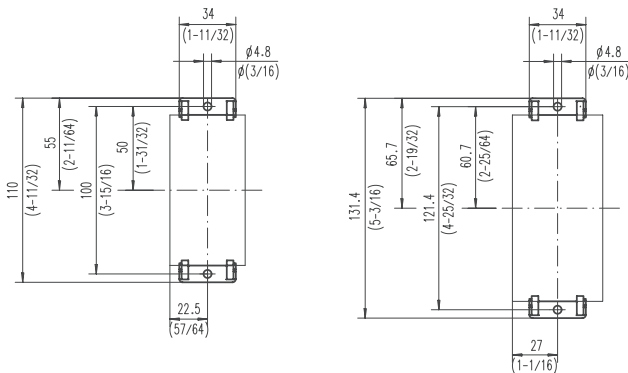


KT7 Motor Circuit Controllers Mounting/Safety Clearance

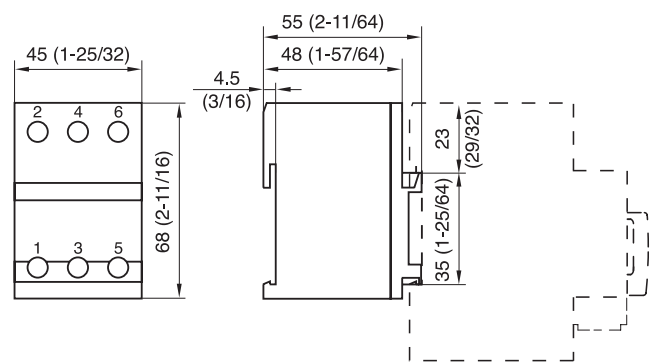
Dimensions are in millimeters (inches). Dimensions not intended for manufacturing purposes.



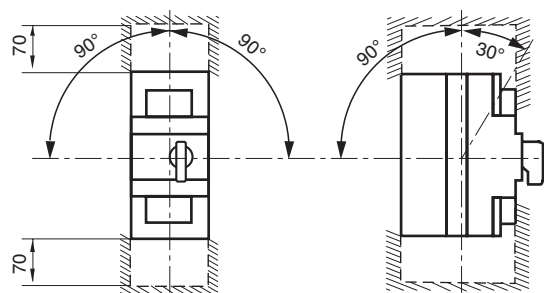
KT7-45-AS Screw Adapter



KT7-25-A2E Terminal Block



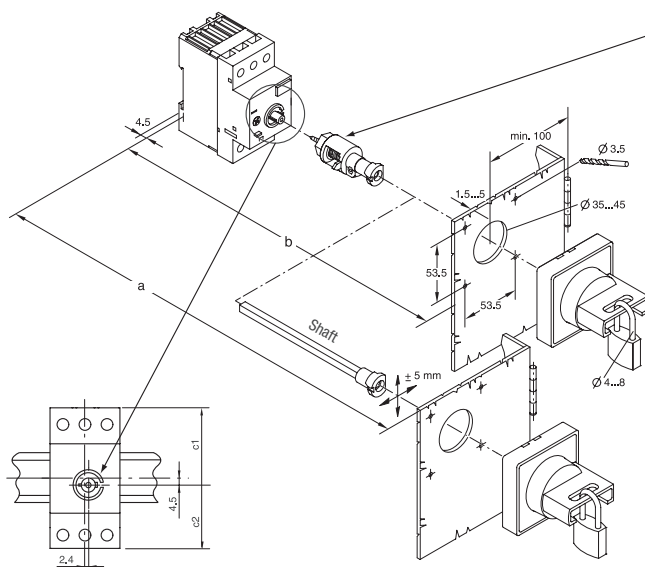
Mounting Position KT7, KTU7



Mounting position/safety clearance

KT7-HTN/HTRY Motor Circuit Controller Door Coupling Handle

Dimensions are in millimeters (inches). Dimensions not intended for manufacturing purposes.



KT7-HTC Coupling is included in Door Handle Kits KT7-HTN and KT7-HTRY. This coupling replaces the knob shipped as standard on the controller. Design "D" Door Coupling Handle Kits include an interface for the "Stops" molded into Design "C" KTA7/KTB7/KTC7 Controllers, which inhibits excessive rotation of the handle mechanism. The old Design "C" Door Handle Kits will fit new Design "C" Controllers (shipped in WHITE boxes), but will not take advantage of the "Stops". Design "D" Door Handle Kits are backward compatible.

Shaft Dimensions

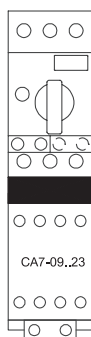
	a		b No Shaft	c1	c2
	Includes 250mm Shaft KT7-HT	Includes 400mm Shaft KT7-HTL			
KT7-25S/32S	117...338 (4.6...13.3 in)	117...488 (4.6...19.2 in)	105.5 ± 5	49.5	40.5
KT7-25H/32H	126...347 (5.0...13.7 in)	126...497 (5.0...19.6 in)	114.5 ± 5	49.5	40.5
KT7-45H	148.6...369.6 (5.9...14.5 in)	148.6...519 (5.9...20.4 in)	137.1 ± 5	59.35	50.35

If using KT7-SHS Shaft Support see page 41 for dimensions

KTA7/KTB7/KTC7 with CA7 Connection Modules and Kits

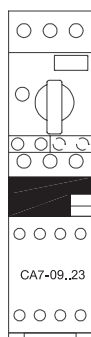
Ecombo 1)

KT7-25S-PEC23
KT7-25H-PEC23

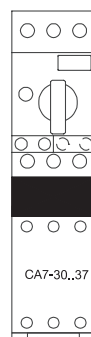


Standard Connection Modules 2)

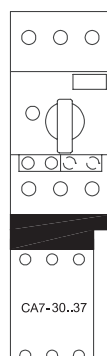
KT7-25S-PNC23
KT7-25H-PNC23



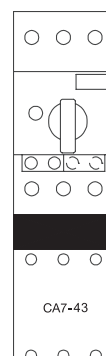
KT7-25H-PNC37



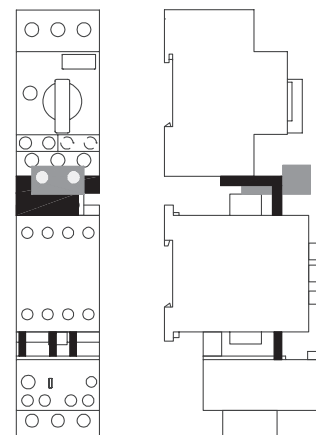
KT7-45H-PNC37



KT7-45H-PNC43



Coil Extension Modules 3)



1) Ecombo Modules

Electrical and mechanical connection between motor circuit controller and contactors with AC coil. For CA7-9...23 only. Compatible with the reversing- and WYE-delta starter components.

2) Standard Connection Modules

Electrical connection between motor circuit controller and contactors with AC coil. For CA7-9...43. Compatible with the reversing- and WYE-delta starter components.

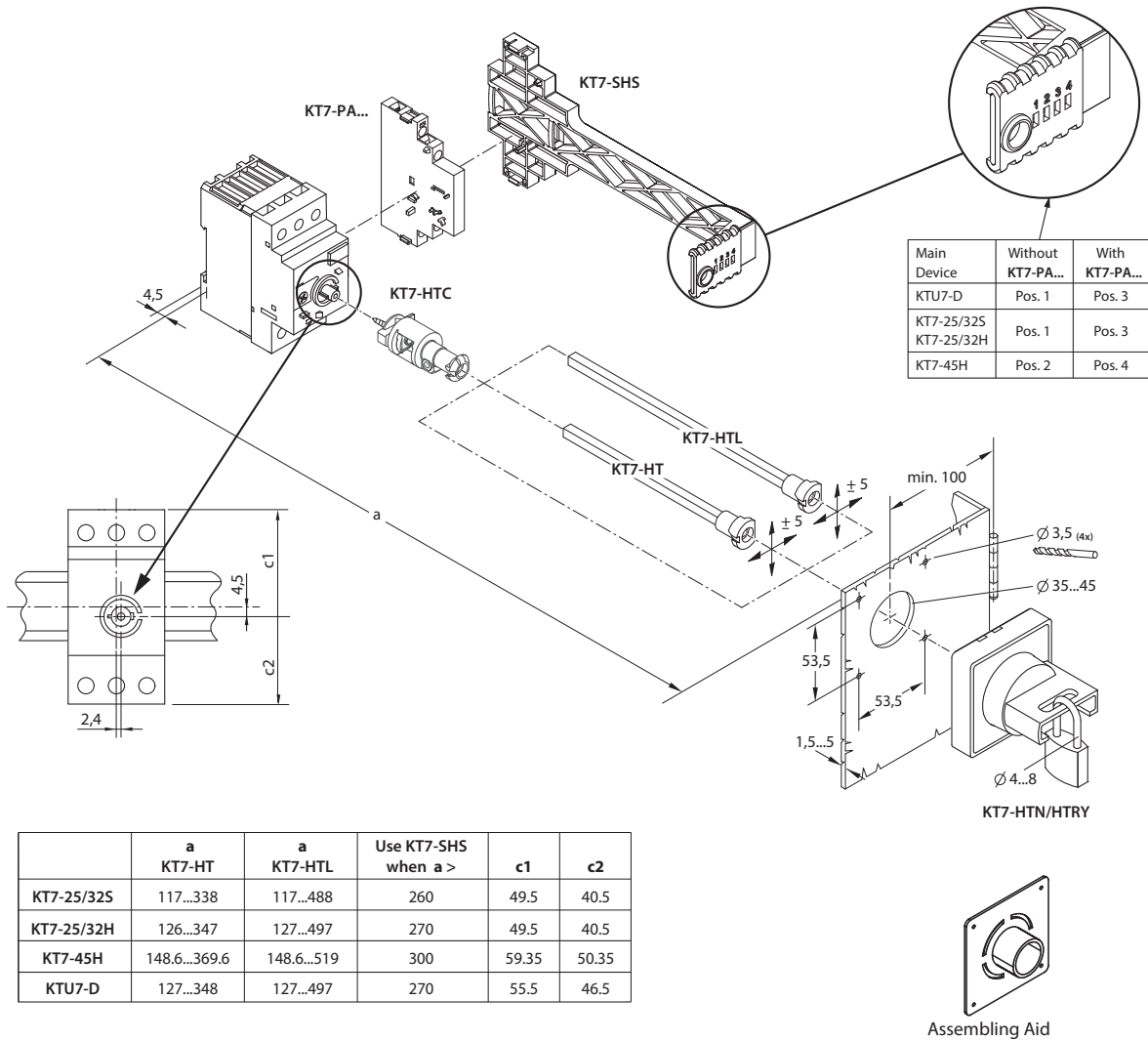
3) Coil Extension Modules

Simplifies access to the coil terminals on 3-component starters.

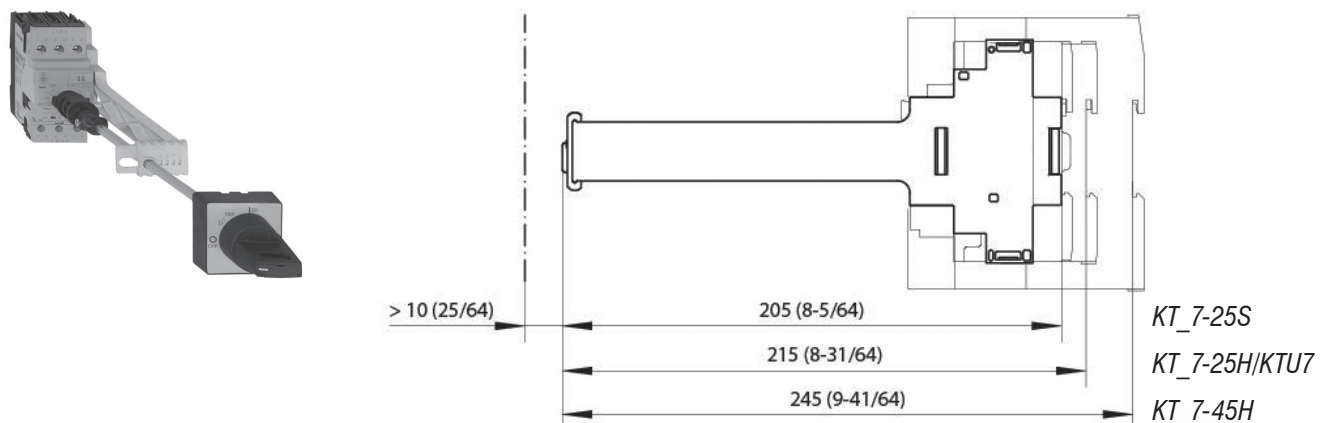
For CA7-9...23 = **KT7-25S-PSC23**

For CA7-30...43 = **KT7-45H-PSC43**

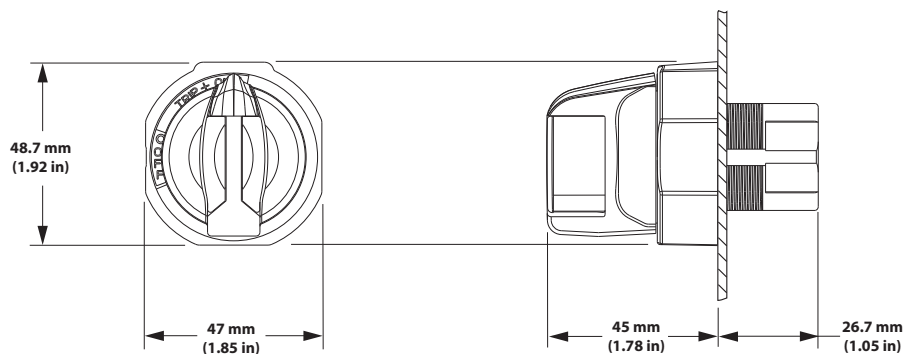
KT7 Handle Assembly with KT7-SHS Shaft Support



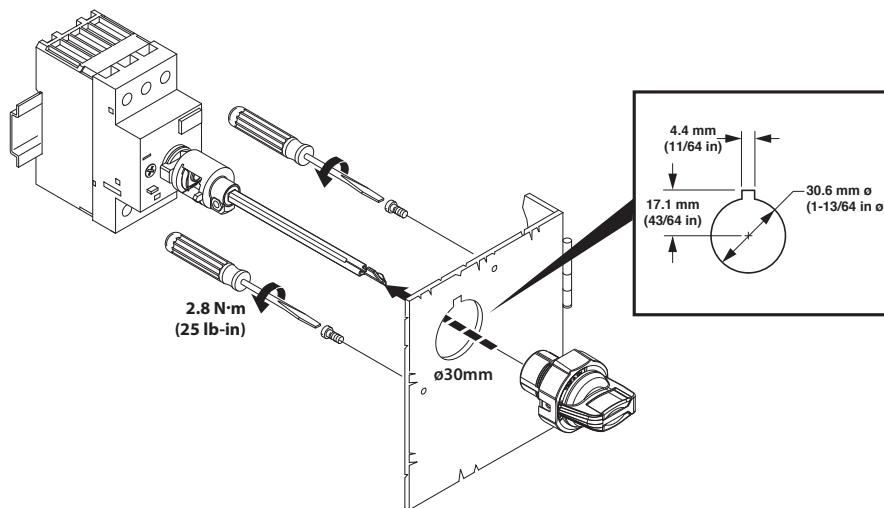
KT7-SHS Shaft Support Dimensions



KT7-SY/SB Switch Handle

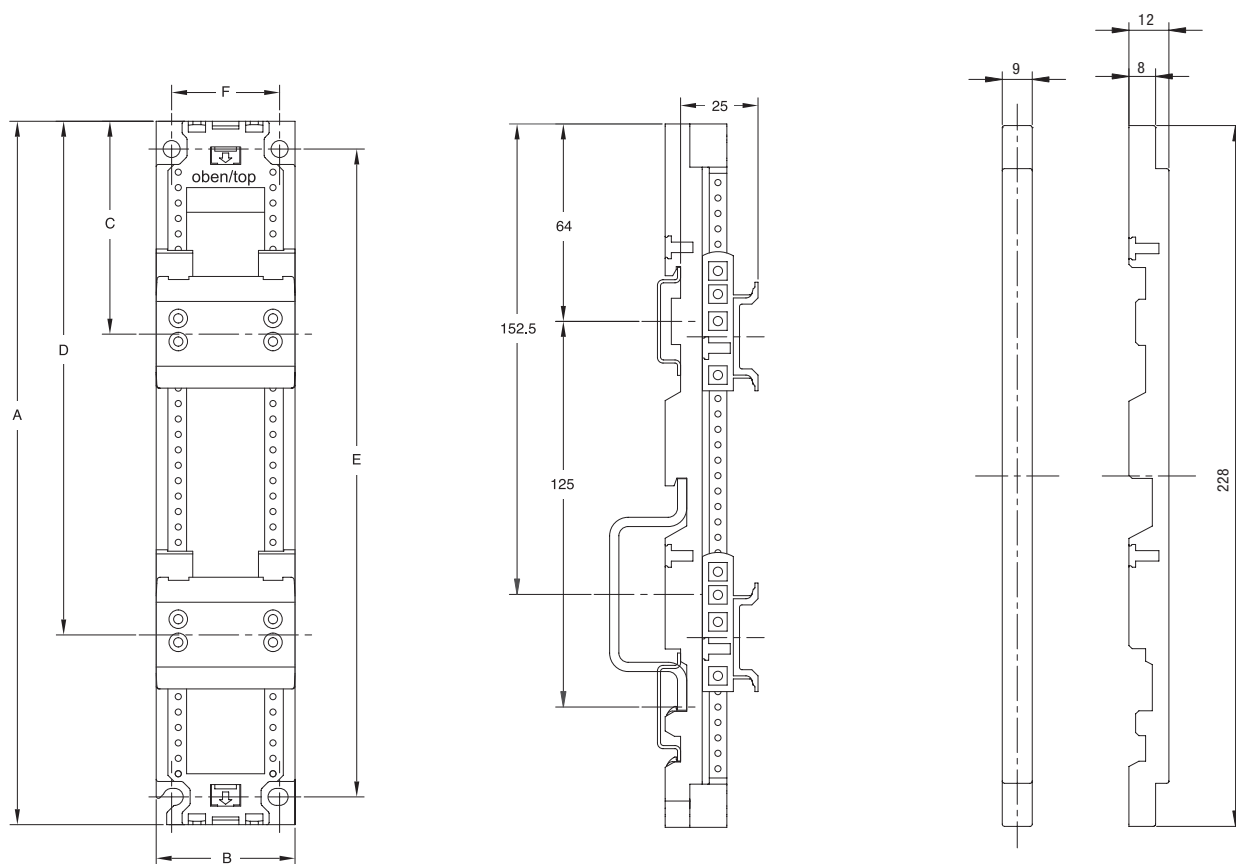


KT7-SY/SB Assembly



Type W Mounting Modules & Spacer ❶

Dimensions are in millimeters (inches). Dimensions not intended for manufacturing purposes.



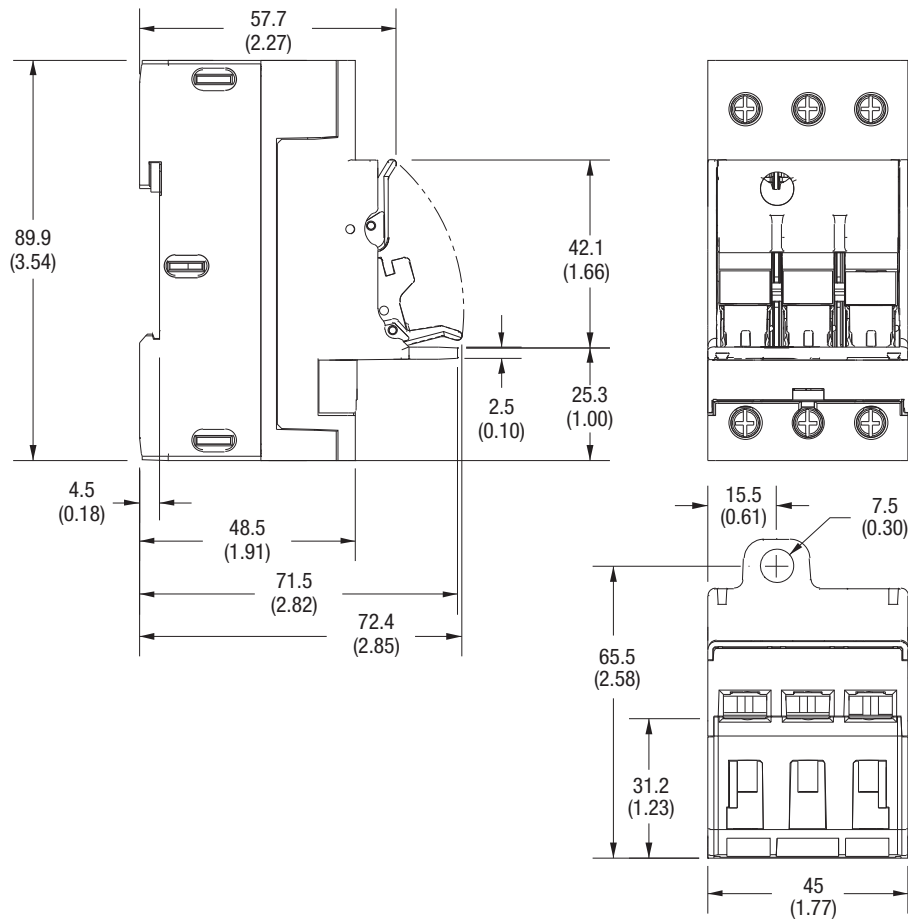
Spacer W-32955

Catalog Number	A	B	C	D	E	F
W-32489	228 (8-31/32)	45 (1-25/32)	69 (2-23/32)	165.5 (6-35/64)	210 (8-17/64)	35 (1-3/8)
W-32490	228 (8-31/32)	54 (2-1/8)	69 (2-23/32)	174 (6-27/32)	210 (8-17/64)	40 (1-37/64)
W-32496	283 (11-9/64)	45 (1-25/32)	69 (2-23/32)	166.5 (6-35/64)	265 (10-7/16)	40 (1-37/64)
W-32497	283 (11-9/64)	54 (2-1/8)	69 (2-23/32)	174 (6-27/32)	265 (10-7/16)	40 (1-37/64)

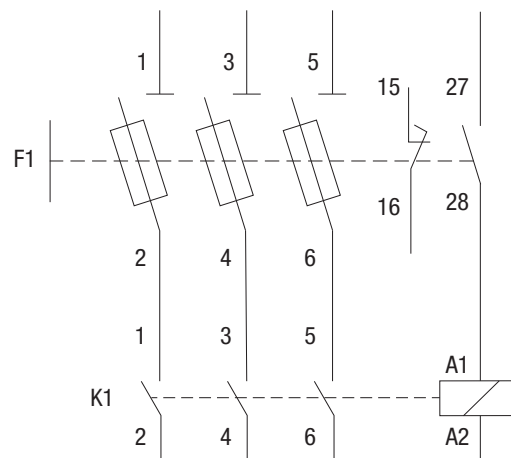
❶ Use Pozidriv #1 (PZ1) screwdriver on DIN rail screws.

KF7 Fuse Holders Dimensions

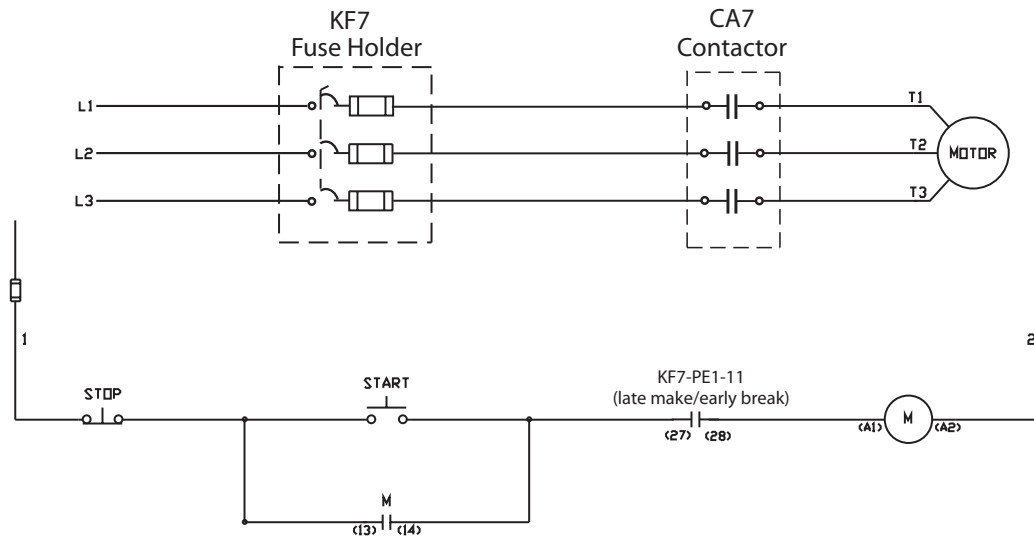
Dimensions are in millimeters (inches). Dimensions not intended for manufacturing purposes.



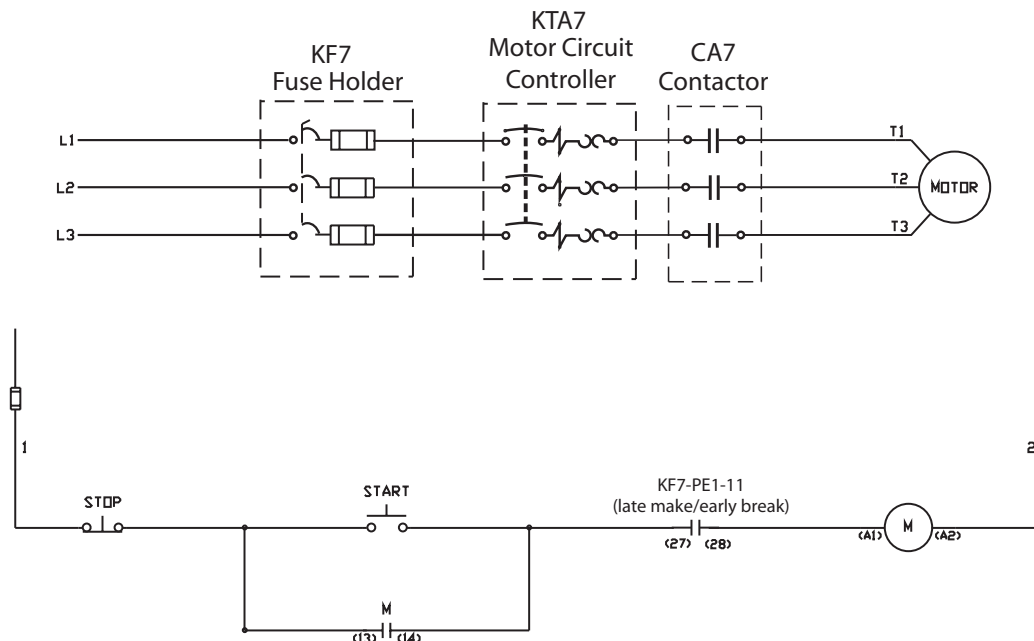
KF7 Fuse Holders Wiring Diagram (IEC)



KF7 Fuse Holder used with CA7 Contactor



KF7 Fuse Holder used with KTA7 Motor Circuit Controller and CA7 Contactor



Notes

F

KT7 Motor Circuit Controllers