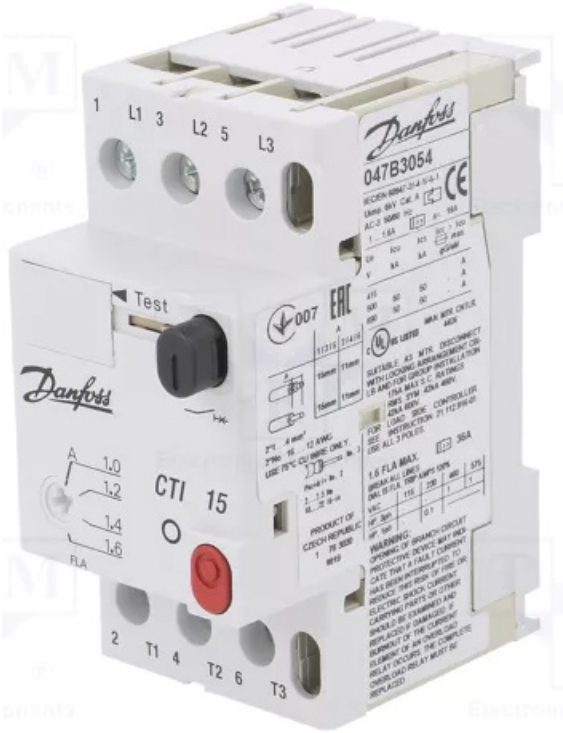
Danfoss CTI 15 Circuit Breakers Installation Guide

Contents

Danfoss CTI 15 Circuit Breakers



Circuit breakers/Manual motor starters CTI 15 cover the power ranges 0.09 – 7.5 kW. This product range is modular, flexible, and offers a large selection of clip-on auxiliary functions and accessories: auxiliary contact blocks, shunt releases, connection terminals, bus bars, and enclosures.

Specifications

- **Type**: CTI 15
- **Rated Motor Load**: AC-2 and AC-3 operation
- **Isolation Voltage**: IEC, cULus
- **Pulse Voltage**: Rated frequency range
- **Ambient Temperature**: Temperature compensated
- **Weather Resistance**: Temp. / rel. humidity Temperate climate
- **Mounting Direction**: Max. motor load AC-2 and AC-3 operation

Features

- **Short-circuit protection**
  - An advanced and fast reacting contact system with arc-control devices give CTI high short-circuit break capability which makes them very suitable for the protection of electrical panels.
- **Indicating functions C**onditiononn (ON or OFF)
- **Supply isolation**:
  - operation switch (manual motor starter)
  - isolation switch (with locking device)
  - emergency stop switch (with undervoltage trip)

Ordering

Circuit breakers/Manual motor starters CTI 15

Type	AC-3 load UE 380 – 415 V	Range Motor starter	Electromagnetic trip current	Code no.
	[kW]	[A]	[A]	
CTI 15	0.09	0.25 – 0.4	4.4	**047B3051**
	0.12	0.4 – 0.63	6.9	**047B3052**
	0.37	0.63 – 1.0	11	**047B3053**
	0.55	1.0 – 1.6	18	**047B3054**
	0.75	1.6 – 2.5	28	**047B3055**
	1.5	2.5 – 4.0	44	**047B3056**
	2.5	4.0 – 6.3	69	**047B3057**
	5.5	6.3 – 10	110	**047B3058**

CBI-NO / CBI-NC Auxiliary contact block

CBI-11 Auxiliary contact block

CBI-UA / CBI-AA Undervoltage trip/ Shunt trip

Enclosure BXI For CTI 15

CTT 25 Terminal block

CTS 54- Bus bar

Description	Comments	Code no.
Auxiliary contact blocks for CTI 15	*Auxiliary contact blocks for building in*	
	CBI-NO (make) terminal 13 – 14	**047B3040**
	CBI-NO (make) terminal 23 – 24	**047B3041**
	CBI-NC (break) terminal 11 – 12	**047B3042**
	Auxiliary contact blocks for left-hand mounting	
	CBI-11 (1 make + 1 break), terminal 13 – 14, 21 – 22	**047B3049**
Undervoltage for CTI 1 5	*Undervoltage trip for right-hand mounting*	
	CBI-UA 220 – 230 V, 50 Hz – 254 V, 60 Hz, D1 – D2	**047B3061**
Shunt trip for CTI 15	*Shunt trip for righthand mounting*	
	CBI-AA 220 – 230 V, 50 Hz – 254 V, 60 Hz, C1 – C2	**047B3067**
Terminal block for CTI 15	*For mounting directly on*	
	CTI 15, max. 16 mm², CTT 25	**047B3076**
Bus bars for CTI 15	*For the parallel connection of CTI 15 in the panel*	
	CTS 45-2 (2 x 45 mm)	**047B3084**
	CTS 45-3 (2 x 45 mm)	**047B3096**
	CTS 45-4 (2 x 45 mm)	**047B3085**
	CTS 45-5 (2 x 45 mm)	**047B3086**
	For CTI 15 with auxiliary contact mounted on the side	
	CTS 54-2 (2 x 54 mm)	**047B3087**
	CTS 54-3 (3 x 54 mm)	**047B3097**
	CTS 54-4 (4 x 54 mm)	**047B3088**
	CTS 54-5 (5 x 54 mm)	**047B3089**

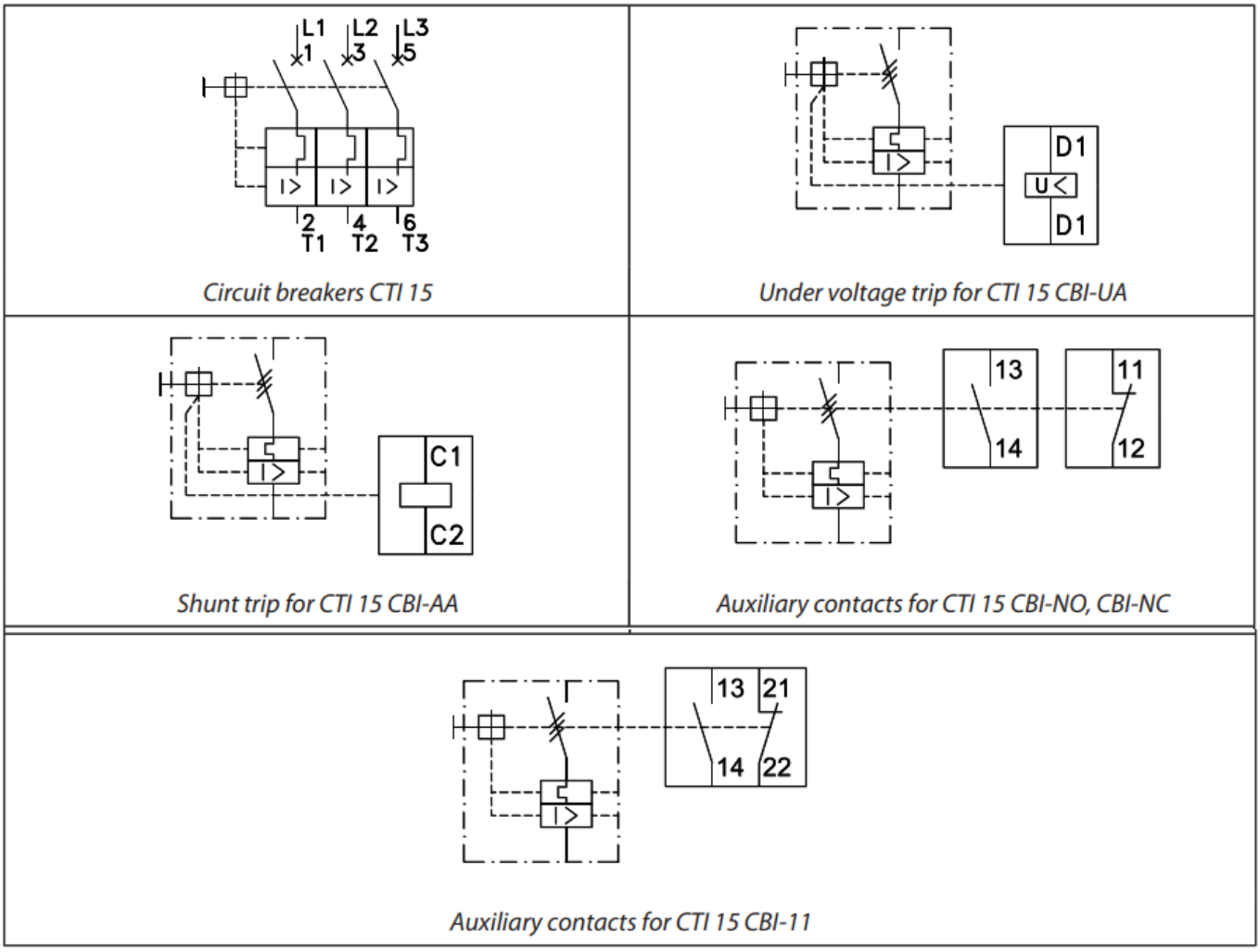
Plastic enclosures for circuit breakers/manual motor starters CTI 15 (IP55)

Type [1] [2]	Application	Pushbuttons	Knockouts	Code no.
BXI 55	**CTI 15**	Start-Stop/reset	4 Pg 16 / 4 Pg 21	**047B3091**

1. With neutral and earth terminals
2. The enclosure also leaves space for a shunt release or an undervoltage release..

Contact symbols and terminal markings

Circuit breakers



Circuit breakers CTI 15

Under voltage trip for CTI 15 CBI-UA

Shunt trip for CTI 15 CBI-AA

Auxiliary contacts for CTI 15 CBI-NO, CBI-NC

Auxiliary contacts for CTI 15 CBI-11

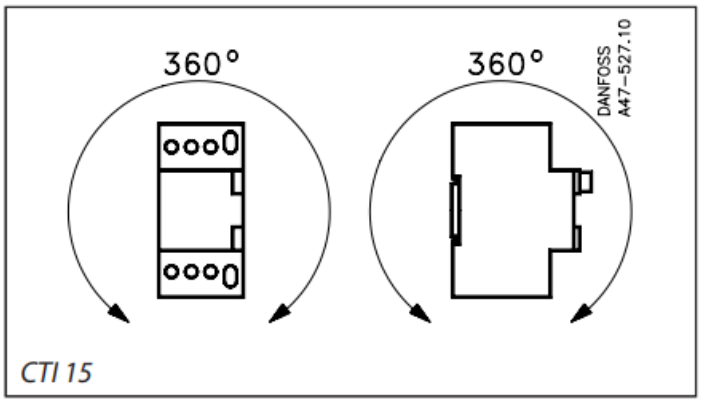
Approvals

Approval authority / Product type	CE EN 60947	EAC EAC	c UL LISTED UL-listed USA	089 LLC CDC TYSK
CTI 15	•	•	•	•
CTS-	•	•	•	–
CTT 25	•	•	•	–
CBI-	•	•	•	–

General data

Parameters		Type
		CTI 15
Isolation voltage	IEC, cULus	V
Pulse voltage		kV
Rated frequency range		– 60 Hz
Ambient temperature	Storage/transport	-25 °C – 80 °C
	Operation	-25 °C – 60 °C
Temperature compensated		-20 °C – 60 °C
Weather resistance	(IEC 68) Temp. / rel. humidity	°C, 92% RH: 56 days
	Temperate climate	°C, 83% RH/40 °C, 93% RH
Vibration (IEC 68) (all directions)		>7,5 g, 10 – 150 Hz
Shock (IEC 68-2-27)		g, 20 ms
Degree of protection		IP20
Installation orientation		Any direction
Rated current		0.25 – 16 A
Release range		9
Differential release		no
Magnetic trip (IeF max. = setting range max. value)		x IeFmax
Number of operations per hour		30
Mechanical life (operations)		100.000
Electrical life (operations)		50.000
Release time on short-circuiting		ms
Power loss, typical		W

Mounting direction



Max. motor load for C-2 and AC-3 operation
The table contains kW values of rated motor sizes according to IEC 60072 which fits to the current range of the circuit breaker. Sometimes more than one rated current fits to the range. In such cases both values are given and they are valid for AC-2 as well as for AC-3.

Type	Setting range	Motor on operating voltage – Rated output in kW							
		– 240 V		– 415 V		V		V	
	[A]	[kW]		[kW]		[kW]		[kW]	
CTI 15	0.25 – 0.4	–		0.09	0.12	–		–	
	0.4 – 0.63	0.06	0.09	0.12	0.18	0.18	0.25	0.25	0.37
	0.63 – 1.0	0.12	0.18	0.18	0.25	0.25	0.37	0.37	0.55
	1.0 – 1.6	0.18	0.25	0.37	0.55	0.55	0.75	0.75	1.1
	1.6 – 2.5	0.37	0.55	0.75	1.1	1.1		1.5	1.8
	2.5 – 4.0	0.55	0.75	1.1	1.8	1.5	2.2	2.2	3.0
	4.0 – 6.3	1.1	1.5	1.8	3.0	3.0	3.7	3.7	4.0
	6.3 – 10	1.8	2.2	3.0	4.0	3.7	6.3	5.5	7.5
	– 16	3.0	4.0	5.5	7.5	6.3	10	10	13

Accessories for circuit breaker CTI 15
Max. load on supply block, current limiter, connection terminal, and bus bar.

Type	Application	Description	Thermal current I_{th}	Voltage supply
			[A]	[V]
CTT 25	CTI 15	Connection terminal	63	690
CTS-		Bus bars	63	690

Accessories for circuit breakers

Loads on auxiliary contact blocks

Type	Application	Description	I_{th}		Load [A]							
					AC-15				DC-13			
			40 °C	60 °C	220 – 240 V	380 – 415 V	500 V	690 V	24 V	48 V	110 V	220 V
CBI-NO/NC	CTI 15	Auxiliary contact for building in	6	4	2	1	0.8	0.5	2	0.6	0.2	0.1
CBI-11		Auxiliary contact for building on (force-actuated PLC-compatible H contact)	10	6	2	1	0.8	0.5	2	0.6	0.2	0.1

Power consumption, undervoltage, and shunt trip

Type	Application	Description			
CBI-UA	CTI 15	Undervoltage trip forthe building on	Rated control voltage U_s		24 – 380 V / 50 Hz, 28 – 440 V / 60 Hz
			Function voltage	Make	0.8 – 1,1 x U_s
				Break	0.35 – 0.7 x U_s 100% made, max. 1.2 U_s
CBI-AA				Make	5 VA, 6 W
		Shunt trip for building on	Coil consumption	Holding	3 VA, 1.2 W

Terminations

Type	Application	Comments	Terminals		Single and multicore	High capacity	Tightening torque	
			1-3-5	2-4-6	[mm^2]	[mm^2]	[Nm]	
CTI 15	**CTI 15**	Circuit breaker 16 A			1 – 6	1 – 4	2.5	
CBI-NO/NC		Auxiliary contacts for CTI 15	–	–	0.75 – 4	0.75 – 2.5	2.5	
CBI-11		Auxiliary contacts for CTI 15	–	–	0.75 – 4	0.75 – 2.5	2.5	
CBI-AA		Shunt release for CTI 15	–	–	0.75 – 4	0.75 – 2.5	2.5	
CBI-UA		Undervoltage release for CTI 15	–	–	0.75 – 4	0.75 – 2.5	2.5	
CTT 25		Connection block for CTI 15			6 – 25	4 – 16	4	

UL/CSA-approved loads

Type	Setting range	Motor load in hp (AC-3)					
		1-phase operation			3-phase operation		
	[A]	V	V	V	V	V	V
CTI 15	0.63 – 1.0	–	–	–	–	1/2	3/4
	1.0 – 1.6	–	1/10	1/10	–	1	1
	1.6 – 2.5	1/10	1/6	1/6	3/4	1.5	2
	2.5 – 4	1/8	1/3	1/3	1	3	3
	– 6.3	1/4	3/4	3/4	2	5	5
	6.3 – 10	1/2	1,5	1,5	3	7.5	10
	– 16	1	3	3	5	10	15

Terminations UL/CSA

Type	Application	Comments	Terminals		Single and multicore	Tightening torque
			1-3-5	2-4-6	[AWG]	[lb-in]
CTI 15	**CTI 15**	Circuit breaker 16 A			16 – 12	20 – 26
CBI-NO/ NC		Auxiliary contacts for CTI 15	–	–	18 – 14	20 – 26
CBI-11		Auxiliary contacts for CTI 15	–	–	18 – 14	20 – 26
CBI-AA		Shunt release for CTI 15	–	–	18 – 14	20 – 26
CBI-UA		Undervoltage release for CT I 15	–	–	18 – 14	20 – 26
CTT 25		Connection block for CTI 15		–	14 – 6	36

UL/CSA approved loads

Type	Application	Description	Load	Load
CBI-NO/NC	CTI 15	Auxiliary contact for building in	**AC**	**DC**
CBI-11	CTI 15	Auxiliary contact for building in	Standard pilot duty B600	Light pilot duty R300

Short circuit protection
Short circuit coordination is the connection between the specifications of the protection devices, such as uses, circuit breakers, MCCB, and their ability to resist short circuits.

Short circuit coordination type 1
Test demand

- O-t-CO
- O = Breaking a short circuit
- CO = Making and breaking a short circuit
- t = Defined pause (3 min)

No damage to equipment or personal injury may occur in the event of short circuit. However, contactors and thermal overload relays are not required to remain functional after short circuit. Typically the maximum short circuit breaking capacity ICU is in use when a plant is dimensioned according to coordination type 1.

Short circuit coordination type 2
Test demand

- O-t-CO-t-CO
- O = Breaking a short circuit

- CO = Making and breaking a short circuit
- t = Defined pause (3 min)
- t = Defined pause (3 min)

No damage to equipment or personal injury may occur in the event of a short circuit. However, light contact welding is permissible, provided that contacts can be separated without deformation, using a screwdriver, for example. Contactors and thermal overload relays must remain completely functional after a short circuit. Typically, the short circuit breaking capacity during operation Ics is in use when a plant is dimensioned according to coordination type 2.

Terms	**Remarks**
Prospective short circuit current (I_{cc})	The prospective short circuit current is the current that fl ows during a bolt short circuit without any short circuit pr otection device mounted.
Rated service short circuit breaking capacity (I_{cu})	The ultimate short circuit breaking capacity is the maximum short circuit current specified by the manufa cturer that a circuit breaker can handle under the circum stances specified in IEC 947-2 and in EN 60947-2
Rated service short circuit breaking capacity (I_{cs})	The rated service short circuit breaking capacity is the m aximum short circuit current specified by the manufactur er that a circuit breaker can handle under the circumstan ces specified in IEC 947-2 and in EN 60947-2
“r”-current	The “r”-current is a short-circuit test current. The size of t he “r” current is determined by the nominal current of the product. (See below)
Iq current	Iq –current is the maximum prospective short-circuiting current stated by the manufacturer, and often at the valu e 50 kA.
gI fuse	Indicates full short circuit protection at voltages 250 V, 4 00 V, 500 V, and 690 V.
gL fuse	Indicates full short-circuit protection of wires.
gG fuse	Indicates full short-circuit protection for general applicati ons. (Will replace gI- and gL –fuses)
T fuse	Description of an English standard fuse.
BS 88	British Standard for smeltesikringer

Fuses

Type	Setting range	Fuses gI, aM, gL, gG, and BS 88 type T when Icc > Icu			
	[A]	220 – 240 V	380 – 415 V	500 V	690 V
CTI 15	0.25 – 0.4				
	0.4 – 0.63				
	0.63 – 1.0				
	1.0 – 1.6				
	1.6 – 2.5				25
	2.5 – 4.0				35
	4.0 – 6.3			63	–
	6.3 – 10.0		63	50	–
	10.0 – 16.0	50	50	50	–

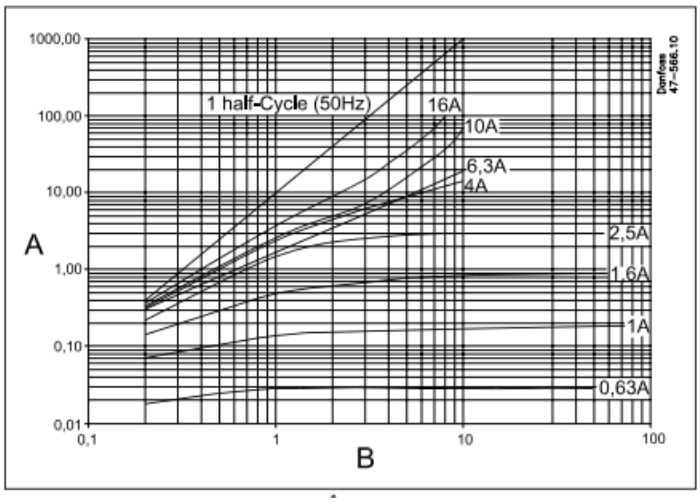
Rated short-circuit breaking capacity Icn

Circuit breaker

Type	Thermal overload relay Setting range	Magnetic trip Release current	Breaking capacity Icn in kA Short-circuit category I_{cu} and I_{cs} to IEC 947-2/EN 60947-2							
			– 240 V		– 415 V		V		V	
	[A]	[A]	I_{cu}	Ics	I_{cu}	Ics	Icu	Ics	Icu	Ics
CTI 15	0.25 – 0.4	4.4	65	65	65	65	50	50	50	50
	0.4 – 0.63	6.9	65	65	65	65	50	50	50	50
	0.63 – 1.0	11	65	65	65	65	50	50	50	50
	1.0 – 1.6	18	65	65	65	65	50	50	50	50
	1.6 – 2.5	28	50	50	50	50	50	50	4.5	4.5
	2.5 – 4.0	44	50	50	10	10	6	3	2	2
	4.0 – 6.3	69	50	50	10	10	10	10	–	–
	6.3 – 10	110	50	50	10	10	4.5	4.5	–	–
	– 16	176	20	16	6	8	4.5	4.5	–	–

Let-through graphs for circuit breaker CTI 15

Maximum let-through energy, Rated voltage 400 – 415 V

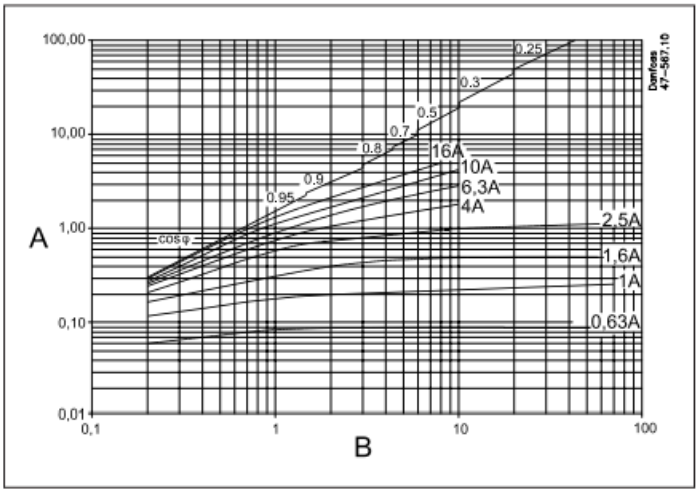
- 

A: Max. let-through energy | i= x dt [103 x A x s]

- **B**: Prospective short-circuit current Icc [kA]

The energy graph can be used to assess whether a lead is correctly protected against the thermal effect of a short-circuit current. The graph can be read as follows: If the expected short-circuit current at the point of installation is set at 8 kA, and a CTI 15 – 10 A is required, the let-through energy will be 40000 A2.

Maximum let-through current, rated voltage 400 – 415 V



A: Max. let-through current I, [kA]

- **B**: Prospective short-circuit current Icc [kA]

The theoretical short-circuit current Icc (prospective short-circuit current) is limited by CTI 15. Id is the maximum let-through current (the highest momentary value of the limited short-circuit current). This value is given in the graph as a function of the prospective short-circuit current. The graphs have been plotted for eight different CTI 15 ranges.

Calculation example
The following generally applies to leads subject to brief overload:

- t = (k x S)2 which gives I2 x t = k2 x S2 I

Where

- t = duration of short-circuit current in seconds
- S = cross-section of lead in mm2
- I = short-circuit current in Aeff
- k = a constant which for PVC-insulated Cu wire
- = 115

Thus, for a 1.5 mm2 PVC-insulated Cu wire, $I^2 \times t = (115 \times 1.5)^2 = 29756$ A2s. From the energy graph, it can be seen that with Icc = 8 kA, a CTI 15 with max. The range setting = 10 A only allows about 20000 AA2 through and therefore protects the lead satisfactorily.

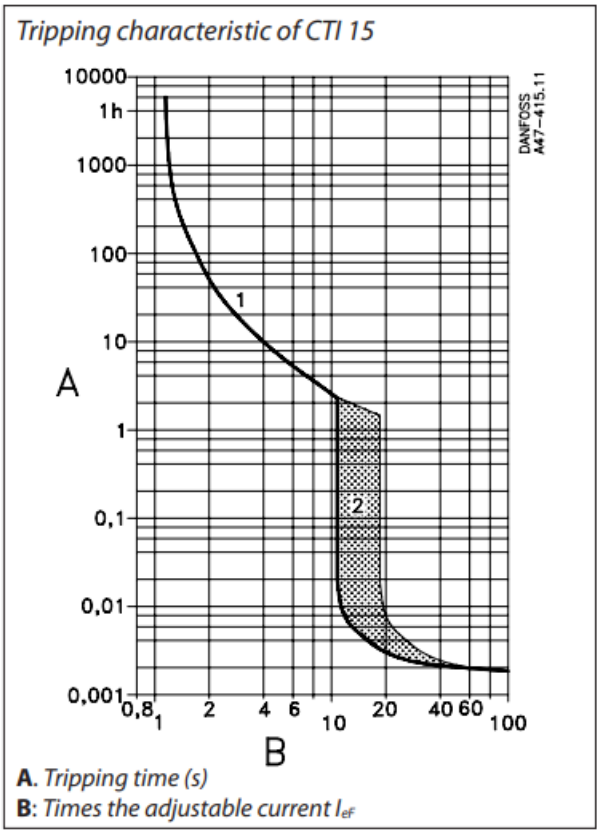
Short-circuit protection of wiring

Type	Max. setting	Protected min. cross-section [mm²] at 380 / 415 V, 50 Hz					
		6	4	2.5	1.5	1	0.75
CTI 15	4.0	•	•	•	•	•	•
	6.3	•	•	•	•	•	•
	10.0	•	•	•	•	•	
	16.0	•	•	•	•		

P. Protection of PVC-insulated wires against overload and short-circuiting, by IEC 364 and CENELEC harmonizing documents 384–3 and 384–4. Overload protection is given by the adjustable thermal circuit breakers in CTI 15 motor starters. The highest possible release current is therefore significantly lower than with overload protection by fuses. The magnetic trips with fixed settings that rapidly open the main contacts take over protection in the event of a short circuit. The low total release time ensures that heating generated in the leads by short-circuiting is limited to a minimum. Further information is contained in national regulations. Setting in a short-circuit protection application. In many cases, CTI 15 is used exclusively for short-circuit protection – overload protection being provided by thermal overload relays, e.g., multi-stage motors or star-delta starters with heavy start, and/or in reducing motor lead cross-section. Here, the current value can be set 20% higher than the operating current so that only the thermal overload relays release when overload occurs.

Overload protection of motors

1.



Thermal tripping. The adjustable, current-dependent, delayed bimetal breakers guarantee motor overload protection. The graph gives the average value at 20 °C ambienttemperature, from the cold condition. When the unit has warmed up, the release time is less than or equal to the release time in the cold condition.The accurate adjustment ensures motoprotection even in the event of phase failure.

2. The electromagnetic, instantaneous high-speed trips react at a fixed response current. At the highest setting value, this corresponds to 11 times the set current for CTI 15. At a lower setting, it is correspondingly higher.

Short-circuit protection

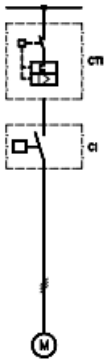
It has become more and more general short-circuit protection panels to use circuit breakers rather than fuses. The

clear advantages of “fuse-free” installations are:

- Space saving
- Cut-out in all three phases in the event of short-circuiting.
- No problems with non-convertible fuse types

When exporting electrical equipment. Danfoss circuit breakers CTI 15 conform to IEC 947-2 and are tested by EN 60947-2. Because of their fast reaction times and reliability ,they are particularly suitable for the short-circuit protection of panels.

Fuseless coordination tables



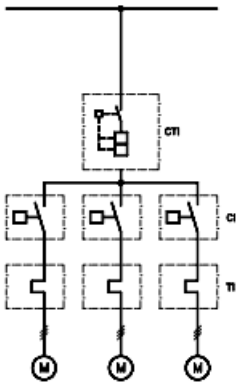
Circuit breakers and contactors

- Prospective short circuit current: Iq = 10/ 50 kA
- Voltage: 380 – 415 V/ 50 Hz
- Overload and short circuit protection with circuit breaker type: CTI
- Short circuit coordination: T1

Contactor type	Short circuit coordination type
	T1
	Test current
	“r” [1]) and I_q = 50 kA
	Maximum CTI – range [A]
CI 5-2, CI 5-5, CI 5-9	16 [2])
CI 6, CI 9	16 [2])
CI 12, CI 15	16 [2])
CI 16	16 [2])
CI 20, CI 25	16 [2])

1. Short circuit test current according to EN 60947-4 (see table page 8)
2. Fuses should be installed in the front of CTI 15 with higher ratings than 6.3 A when rated for service

Fuseless coordination tables



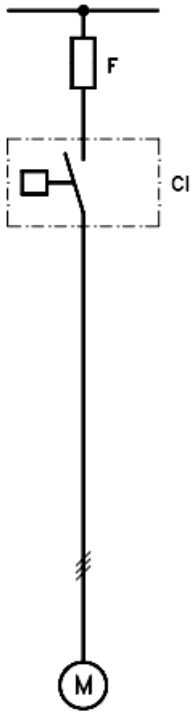
Circuit breakers, contactors, and thermal overload relays (several groups)

- Prospective short circuit current: Iq = 50 kA
- Voltage: 380 – 415 V / 50 Hz
- Overload protection with thermal overload relay type: TI
- Short circuit protection with circuit breaker type: CTI
- Short circuit coordination: T1

Contactor type	Thermal overload relay Range	Test current “r”[1]) and I_q = 50 kA
		Maximum CTI – range
	[A]	[A]
CI 5-5, CI 6, CI 9	0.13 – 0.20	CTI 15 – 16 A [2])
CI 5-5, CI 6, CI 9	0.19 – 0.29	
CI 5-5, CI 6, CI 9	0.27 – 0.42	
CI 5-5, CI 6, CI 9	0.4 – 0.62	
CI 5-5, CI 6, CI 9	0.6 – 0.92	
CI 5-5, CI 6, CI 9	0.85 – 1.3	
CI 5-5, CI 6, CI 9	1.2 – 1.9	
CI 5-5, CI 6, CI 9	1.8 – 2.8	
CI 5-5, CI 6, CI 9	2.7 – 4.2	CTI 15 – 16 A [2])
CI 5-5, CI 6, CI 9	4 – 6.2	
CI 5-9, CI 9	6 – 9.2	
CI 12, CI 15	8 – 12	
CI 15, CI 16	11 – 16	CTI 15 – 16 A [2])

1. Short circuit test current according to EN 60947-4 (see table page 8)
2. Fuses should be installed in the front of CTI 15 with higher ratings than 6.3 A when the rated service breaking capacity exceeds values in the tables on page 9.

Coordination tables with fuses



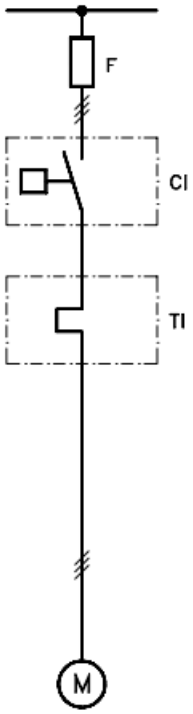
Contactors

- Prospective short circuit current: Iq = 10/ 50 kA
- Voltage: 380 – 415 V/ 50 Hz
- Overload and short circuit protection with fuse types: gI, gL, gG, and ‘T’ (BS 88)
- Short circuit coordination: T1

Contactor type	Short circuit coordination type	
	T1	
	Test Current	
	“r” [1]) and I_q = 50 kA	
	gI,gL, gG	**‘T’**
	[A]	**[A]**
CI 5-2, CI 5-5, CI 5-9	50	63
CI 6, CI 9, CI 12, CI 15	50	63
CI 16	80	80
CI 20, CI 25	80	80
CI 30	80	80
CI 32	125	125
CI 37, CI 45, CI 50	125	125
CI 61, CI 73	250	
CI 141	315	
CI 180	355	
CI 210 EI, CI 250 EI	500	
CI 300 EI, CI 420 EI	630	

[1] Short circuit test current according to EN 60947-4 (see table page 7)

Coordination tables with fuses



Contactors

- Prospective short circuit current: Iq = 10/ 50 kA
- Voltage: 380 – 415 V/ 50 Hz
- Overload and short circuit protection with fuse types: gI, gL, gG, and ‘T’ (BS 88)
- Short circuit coordination: T1

Contactor type	**Thermal overload relay**	**Short circuit coordination type**	
		T1	
		Test Current	
		“r” [1]) and I_q = 50 kA	
		gI,gL, gG	**‘T’**
	[A]	**[A]**	**[A]**
CI 5-5, CI 5-9, CI 6, CI 9	0.13 – 0.20	25	32
CI 5-5, CI 5-9, CI 6, CI 9	0.19 – 0.29	25	32
CI 5-5, CI 5-9, CI 6, CI 9	0.27 – 0.42	25	32
CI 5-5, CI 5-9, CI 6, CI 9	0.42 – 0.60	25	32

CI 5-5, CI 5-9, CI 6, CI 9	0.60 – 0.92	25	32
CI 5-5, CI 5-9, CI 6, CI 9	0.85 – 1.3	25	32
CI 5-5, CI 5-9, CI 6, CI 9	1.2 – 1.9	25	32
CI 5-5, CI 5-9, CI 6, CI 9	1.8 – 2.8	25	32
CI 5-5, CI 5-9, CI 6, CI 9	2.7 – 4.2	25	32
CI 5-5, CI 5-9, CI 6, CI 9	4 – 6.2	35	40
CI 5-9, CI 9	6 – 9.2	0	50
CI 12, CI 15	8 – 12	63	63
CI 15, CI 16	11 – 16	80	80
CI 16, CI 20	15 – 20	80	80
CI 25	19 – 25	80	80
CI 30	24 – 32	80	80
CI 32	16 – 23	125	125
CI 32	22 – 32	125	125
CI 37, CI 45	30 – 45	125	125
CI 50	42 – 63	125	125
CI 61	42 – 63		100
CI 73	60 – 80		125
CI 86	74 – 85		125
CI 140	20 – 180	315	

[1] Short circuit test current according to EN 60947-4 (see table page 7)

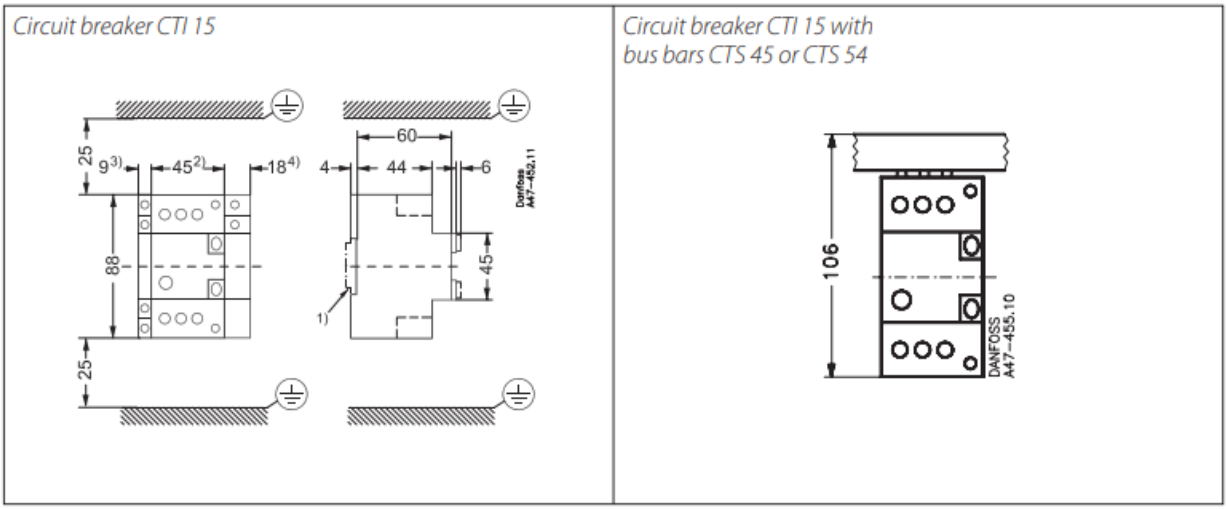
Coordination tables with fuses or circuit breakers/MCB

Auxiliary contacts

- Prospective short circuit current: Iq = 1 kA
- Coordination type: “weld-free”
- Fuse types: gI, gL, gG, and ‘T’ (BS 88)

Dimensions Circuit breakers CTI

1.



Possibility of fixing on DIN rail EN 50022-35

2. Circuit breaker CTI 15, incl. auxiliary contact block CBI for building in
3. Auxiliary contact block CBI for mounting
4. Shunt release CBI-AA or undervoltage release CBI-UA

Installation

1. Identify the appropriate auxiliary components needed based on the CTI 15 specifications.
2. Ensure proper isolation voltage and pulse voltage requirements are met during installation.
3. Mount the circuit breaker in the designated orientation as specified in the manual.

Operation

1. Connect the circuit breaker to the power supply according to the rated motor load specifications.
2. Operate the CTI 15 following the recommended settings for different motor sizes.
3. Monitor the circuit breaker for any abnormal behavior or tripping.

Maintenance

1. Regularly inspect the CTI 15 for dust or debris accumulation and clean if necessary.
2. Check for any loose connections and tighten them to ensure proper functionality.
3. Refer to the manual for any specific maintenance tasks recommended by the manufacturer.

FAQs

What are the different accessory components available for the CTI 15 circuit breaker?
The accessory components include CBI-NO/CBI-NC auxiliary contact blocks, CBI-11 auxiliary contact block, CBI-UA/CBI-AA undervoltage trip/shunt trip, terminal block, and bus bars specifically designed for CTI 15.

What is the weather resistance rating of the plastic enclosures for CTI 15?
The plastic enclosures for CTI 15 have an IP55 weather resistance rating, making them suitable for temperate climate conditions.

How do I determine the appropriate motor size and settings for the CTI 15 circuit breaker?
Refer to the kW values provided in the manual, which correspond to the rated motor sizes according to IEC 60072. Select the setting range based on the motor's operating voltage and rated output in kW.

Documents / Resources

	Danfoss CTI 15 Circuit Breakers [pdf] Installation Guide CTI 15, CTS 54, CTT 25, CTI 15 Circuit Breakers, Circuit Breakers, Breakers

References

- User Manual