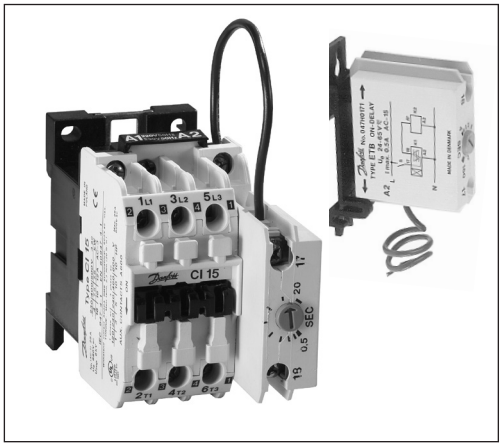
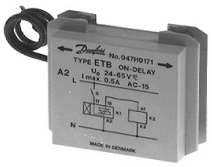
ON-delay clip-on timers for AC control voltage 50/60 Hz



ETB electronic clip-on timers are for use with Danfoss contactors to delay contactor close and open.

The clip-on timers can be clipped direct onto contactors CI 6 – CI 50 and occupy as little space as one auxiliary contact.
Where separate mounting at the side of contactors is required, a DIN rail mounting base is available.

ETB



Type	Time range	Voltage range [V]	Code no.
ETB	0.5 – 20 s	24 – 65	**047H0170**
	4 – 160 s	24 – 65	**047H0171**
	0.5 – 20 s	110 – 240	**047H0173**
	4 – 160 s	110 – 240	**047H0174**
	0.5 – 20 min	110 – 240	**047H0175**

OFF-delay clip-on timers for AC control voltage 50/60 Hz

Type	Time range	Voltage range [V]	Code no.
ETB	0.5 – 20 s	24 – 65	**047H0180**
	4 – 160 s	24 – 65	**047H0181**
	0.5 – 20 min	24 – 65	**047H0182**
	0.5 – 20 s	110 – 240	**047H0183**
	4 – 160 s	110 – 240	**047H0184**
	0.5 – 20 min	110 – 240	**047H0185**

Accessory for ETB



Description	Comments	Code no.
DIN rail base for ETB	For separate mounting of clip-on timers ETB	**047H016466**

Enclosures for the CI range up to 30 A



Enclosures for the CI range up to 30 A are made of plastic and offer a very high degree of enclosure (IP 55 to IEC 529).
They are fitted with a DIN rail and there is ample space for a timer block (ETB) at the side of the contactor. There is an earth terminal and a loop terminal in the bottom of the enclosure. There are versions with four knockouts for M20/25 cable entries.

Enclosure BCI and BCI 1: Up to four auxilliary contact blocks can be fitted on each contactor.
Box BCI 2: Ub addition to the start contact, two auxiliary contact blocks can be fitted to a three-pole contactor.

Plastic enclosures for motor starters up to 30 A (IP 55)

Type	Application	Pushbuttons	Knockouts	Code no.
BCI	Control relay/Contactor	None	4 M 20/4 M 25	**047B010666**
BCI 1	Motor starter	Stop/reset	4 M 20/4 M 25	**047B010466**
BCI 2	Motor starter	Start-Stop/reset	4 M 20/4 M 25	**047B010266**

Ordering of motor starter components
DOL starters (contactors CI 6 – CI 30 + thermal overload relays TI 16C – TI 30C + enclosure) 3 x 380-415 V

Motor[3]		Thermal overload relay			Contactor		Max. fuse[1]		Enclosure				Start contact	
Output	Fulload current	Range					gI, gL, gG Type 2	gI, gL gG Type 1	with stop-reset		with start-stop/reset		Necessary only with start-stop/reset	
[kW]	[A]	[A]	Type	Code no.	Type	Code no.[4]	[A]	[A]	Type	Code no.	Type	Code no	Type	Code no
0.09	0.35	0.27 – 0.42	TI 16C	**047H0202**	CI 6	**037H0015**	2	25	BCI 1	**047B010466**	BCI 2	**047B010266**	CB-S	**037H0110**
0.12	0.46	0.4 – 0.62	TI 16C	**047H0203**	CI 6	**037H0015**	2	25	BCI 1	**047B010466**	BCI 2	**047B010266**	CB-S	**037H0110**
0.18	0.62	0.4 – 0.62	TI 16C	**047H0203**	CI 6	**037H0015**	2	25	BCI 1	**047B010466**	BCI 2	**047B010266**	CB-S	**037H0110**
0.25	0.82	0.6 – 0.92	TI 16C	**047H0204**	CI 6	**037H0015**	4	25	BCI 1	**047B010466**	BCI 2	**047B010266**	CB-S	**037H0110**
0.37	1.3	0.85 – 1.3	TI 16C	**047H0205**	CI 6	**037H0015**	4	25	BCI 1	**047B010466**	BCI 2	**047B010266**	CB-S	**037H0110**
0.55	1.7	1.2 – 1.9	TI 16C	**047H0206**	CI 6	**037H0015**	6	25	BCI 1	**047B010466**	BCI 2	**047B010266**	CB-S	**037H0110**
0.75	2.1	1.8 – 2.8	TI 16C	**047H0207**	CI 6	**037H0015**	6	25	BCI 1	**047B010466**	BCI 2	**047B010266**	CB-S	**037H0110**
1.1	2.9	2.7 – 4.2	TI 16C	**047H0208**	CI 6	**037H0015**	16	25	BCI 1	**047B010466**	BCI 2	**047B010266**	CB-S	**037H0110**
1.5	3.7	2.7 – 4.2	TI 16C	**047H0208**	CI 6	**037H0015**	16	25	BCI 1	**047B010466**	BCI 2	**047B010266**	CB-S	**037H0110**
2.2	5.3	4.0 – 6.2	TI 16C	**047H0209**	CI 6	**037H0015**	20	35	BCI 1	**047B010466**	BCI 2	**047B010266**	CB-S	**037H0110**
3	7.0	6.0 – 9.2	TI 16C	**047H0210**	CI 9	**037H0021**	20	50	BCI 1	**047B010466**	BCI 2	**047B010266**	CB-S	**037H0110**
4	9.0	6.0 – 9.2	TI 16C	**047H0210**	CI 9	**037H0021**	20	50	BCI 1	**047B010466**	BCI 2	**047B010266**	CB-S	**037H0110**
5.5	12	8.0 – 12	TI 16C	**047H0211**	CI 12	**037H0031**	25	63	BCI 1	**047B010466**	BCI 2	**047B010266**	CB-S	**037H0110**
7.5	16	11 – 16	TI 16C	**047H0212**	CI 16	**037H0041**	25	80	BCI 1	**047B010466**	BCI 2	**047B010266**	CB-S	**037H0110**
10	20	15 – 20	TI 25C	**047H0213**	CI 20	**037H0045**	35[2]	80	BCI 1	**047B010466**	BCI 2	**047B010266**	CB-S	**037H0110**
11	22	19 – 25	TI 25C	**047H0214**	CI 25	**037H0051**	63[2]	80	BCI 1	**047B010466**	BCI 2	**047B010266**	CB-S	**037H0110**
15	32	24 – 32	TI 30C	**047H0215**	CI 30	**037H0055**	63[2]	80	BCI 1	**047B010466**	BCI 2	**047B010266**	CB-S	**037H0110**

[1] To IEC 60947-4 coordination types 1 and 2:
Coordination type 1: Any type of damage to the motor starter is permissible. If the motor starter is in an enclosure, no external damage to the enclosure is permissible. After a short-circuit the thermal overload relay shall be partially or wholly replaced.
Coordination type 2: No damage to the motor starter is permissible, but slight contact burning and welding is permissible.
[2] 50 A in Norway
[3] For each application, check full load current and start current of motor concerned.
[4] State the required coil voltage and frequency by suffix no.

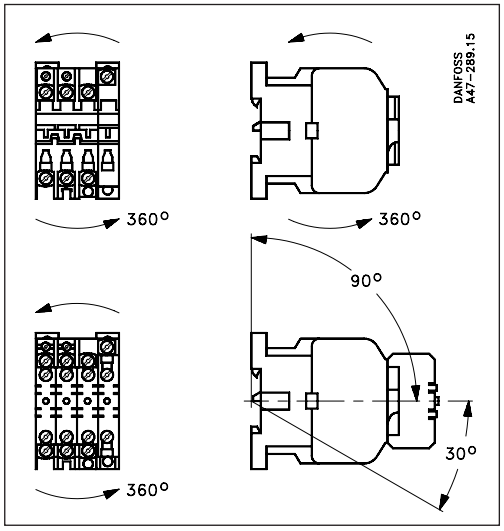
Environment

Type	Temperature compensated [°C]	Ambient temperature [°C]	Vibration	Shock perpendicular to contact system	Max. operations per hour
TI 16C	-5 – 40	-50 – 60	2 g at 200 Hz	9 g for 7.5 ms	30
TI 25C	-5 – 40	-50 – 60	2 g at 200 Hz	9 g for 7.5 ms	30
TI 30C	-5 – 40	-50 – 60	2 g at 200 Hz	9 g for 7.5 ms	30
TI 80	-5 – 40	-50 – 60	2 g at 200 Hz	9 g for 7.5 ms	30

Electromagnetic compatibility

Type	Emission	Immunity
CI 9 DC – CI 30 DC	EN 50081-1	EN 50082-2
CI 9 EI – CI 30 EI	EN 50081-1	EN 50082-2

Mounting direction



Rated life

Type	Mechanical life Operations	Electrical life AC-3 load Operations	Switching per hour AC-3 load Operations
CI 6 – CI 30	10 x 10^6	1 x 10^6	1200
CI 32	5 x 10^6	1 x 10^6	300
CI 37 – CI 50	5 x 10^6	0.5 x 10^6	300

Approvals & Certificates

Type	Approval authority			
	CE marked in accordance with LVD 2014/35/EU	cULus	EAC	LLC CDC TYSK
CI 6	●	●	●	●
CI 9	●	●	●	●
CI 12	●	●	●	●
CI 15	●	●	●	●
CI 16	●	●	●	●
CI 20	●	●	●	●
CI 25	●	●	●	●
CI 30	●	●	●	●
CI 32	●	●	●	●
CI 37	●	●	●	●
CI 45	●	●	●	●
CI 50	●	●	●	●
TI 16C/25C/30C	●	●	●	●
TI 80	●	●	●	●
CB-	●	●	●	☐
ETB	●	☐	✓	☐
CI 9DC – CI 30 DC	●	●	●	☐
CI 9EI – CI 30 EI	●	●	●	☐

● Approved

☐ No approval applied

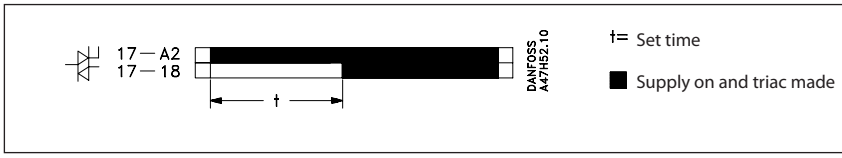
Clip-on timer type ETB

Specification	
Contact functions	1-pole contact without galvanic isolation (Triac)
Time ranges	0.5 – 20 s, 4 – 160 s, 0.5 – 20 min.
Voltage range AC	24 – 65 V/50 – 60 Hz and 110 – 240 V/50 – 60 Hz
Voltage range DC	24 – 65 V and 110 – 240 V
Voltage tolerance	-15 – 10%
Ambient temperature (operation)	-10 – 55%
Ambient temperature (storage and transport)	-40 – 70 °C
Repeat accuracy	± 2% at constant voltage and temperature
Time for reset (dwell time)	Min. 400 ms
Lead cross-section	0.75 – 2.5 mm^2

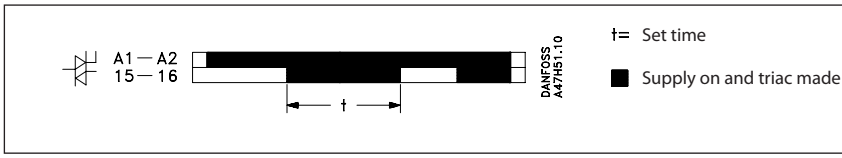
Load		
Max. load AC	I_{th} = 0,5 A AC-15	
Min. load AC	15 mA	
Max. load DC	I_{th} = 0,5 A, I_{max} = 7 A for 20 ms	
Min. load DC	5 mA	
Consumption	**Voltage [V]**	**Power [mW]**
Delayed cut-in AC	65	300
Delayed cut-in AC	240	370
Delayed cut-out AC	65	720
Delayed cut-out AC	240	900
Delayed cut-in AC	65	520
Delayed cut-in AC	240	810

Function description

ON delay
When voltage is applied to terminals 17 and A2, the set time interval begins. When the set time elapses, terminal 18 is powered and the contactor is energised. When voltage to the Clip-on timer is disconnected, the contactor drops out.

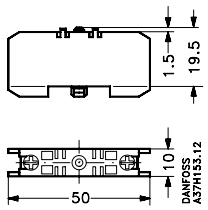


OFF delay
Voltage is applied to terminals A1 and A2.
When terminal 15 receives voltage, terminal 16 is powered and the contactor is energised.
When terminal 15 is disconnected, the time interval begins.
When the time interval elapses, the contactor is de-energised.
If voltage to A1 – A2 is cut off, the contactor drops out.

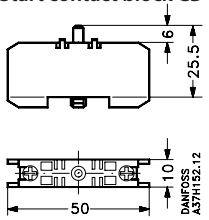


Dimensions, Accessories

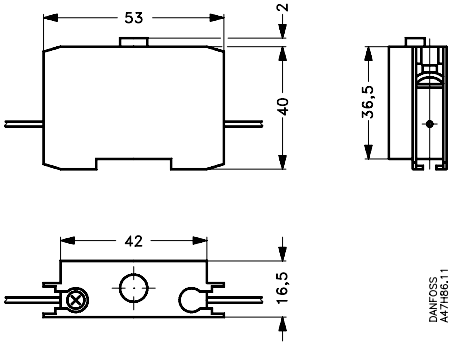
Auxiliary contact block CB



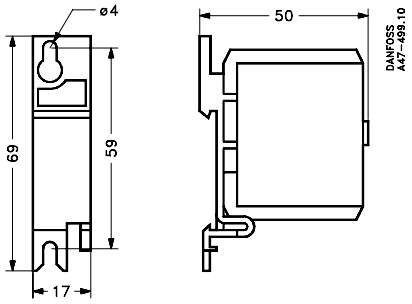
Start contact block CB-S



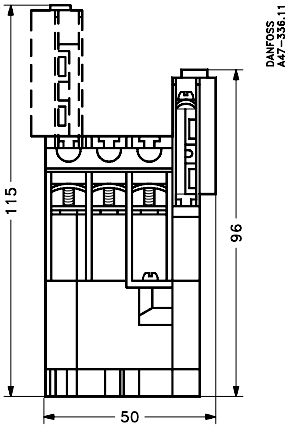
Electronic clip-on timer ETB



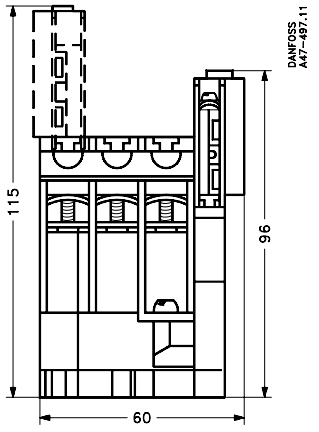
Separate mounting of electronic clip-on timer ETB



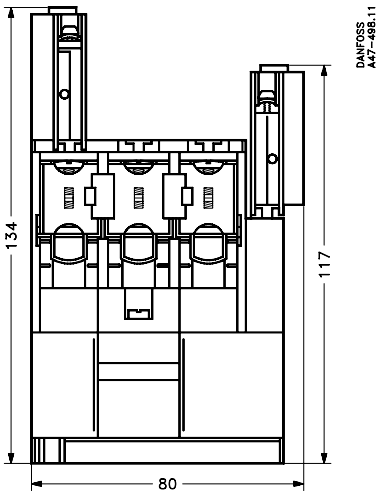
Electronic clip-on timer ETB clipped onto CI 6, 9, 12, 15



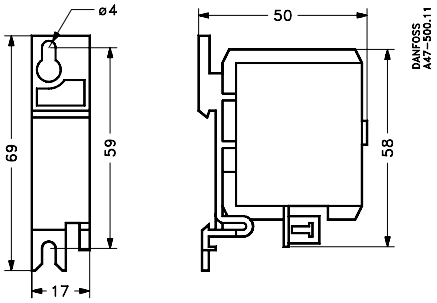
Electronic clip-on timer ETB clipped onto CI 16, 20, 25, 30



Electronic clip-on timer ETB clipped onto CI 32, 37, 45, 50



Separately mounted Interface module IFB on base



RC Element for contactors CI 6, 9, 12, 15, 16, 20, 25, 30

