

CI-tronic™ Electronic contactors

Type ECI

Features

- Compact modular design complete with heatsink
- DIN rail mountable
- Easy and quick installation
- Specification according to industry standard
- Available in single phase, dual phase or three phase version
- Operational current up to 63 A (AC-1), 30 A (AC-3)
- LED Status indication
- Line voltage up to 600 V a.c.
- Universal control voltage
- Burst firing (zero cross)
- IP 20 protection
- CE, CSA, UL and C-tick approvals
- SCR power chip with LTE technology
- Built-in varistor protection



Description

ECI electronic contactors are designed for fast and demanding switching of loads such as heaters, solenoids, transformers and motors.

The contactors are burst fired for reduced EMC emission, have LED status indicators and accept universal control voltage ranges.

ECI Electronic contactors utilize power chip with LTE (Low Thermal Expansion) technology.

The units are DIN rail mountable, complete with heatsink and require no additional components.

This unique power chip design ensures high switching capacity and long life.

Ordering

Single phase

Operational current		Control voltage	Dimensions	Type	Code no.		
AC-1	AC-3				Operational voltage [V a.c.]		
					12-230	24-480	24-600
15 A	15 A	5-24 V d.c.	22.5 mm module	ECI 15-1	037N0063	037N0065	037N0067
15 A	15 A	24-230 V a.c./d.c.	22.5 mm module	ECI 15-1	037N0064	037N0066	037N0068
30 A	15 A	5-24 V d.c.	45 mm module	ECI 30-1	037N0007	037N0009	037N0011
30 A	15 A	24-230 V a.c./d.c.	45 mm module	ECI 30-1	037N0001	037N0003	037N0005
50 A	15 A	5-24 V d.c.	90 mm module	ECI 50-1	037N0008	037N0010	037N0012
50 A	15 A	24-230 V a.c./d.c.	90 mm module	ECI 50-1	037N0002	037N0004	037N0006
63 A	30 A	5-24 V d.c.	90 mm module	ECI 63-1	037N0078	037N0080	037N0082
63 A	30 A	24-230 V a.c./d.c.	90 mm module	ECI 63-1	037N0079	037N0081	037N0083

Dual phase

Operational current ¹⁾		Control voltage	Dimensions	Type	Code no.		
AC-1	AC-3				Operational voltage [V a.c.]		
					12-230	24-480	24-600
30 A	15 A	5-24 V d.c.	45 mm module	ECI 30-2	037N0019	037N0021	037N0023
30 A	15 A	24-230 V a.c./d.c.	45 mm module	ECI 30-2	037N0013	037N0015	037N0017
50 A	15 A	5-24 V d.c.	90 mm module	ECI 50-2	037N0020	037N0022	037N0024
50 A	15 A	24-230 V a.c./d.c.	90 mm module	ECI 50-2	037N0014	037N0016	037N0018

¹⁾ Rated as the maximum sum of current in L1 and L2

Ordering (continued)

Three phase

Operational current		Control voltage	Dimensions	Type	Code no.		
AC-1	AC-3				Operational voltage [V a.c.]		
					12-230	24-480	24-600
10 A	10 A	5-24 V d.c.	45 mm module	ECI 10-3	037N0031	037N0033	037N0035
10 A	10 A	24-230 V a.c./d.c.	45 mm module	ECI 10-3	037N0025	037N0027	037N0029
20 A	10 A	5-24 V d.c.	90 mm module	ECI 20-3	037N0032	037N0034	037N0036
20 A	10 A	24-230 V a.c./d.c.	90 mm module	ECI 20-3	037N0026	037N0028	037N0030

Operating at high temperature

Ambient temperature		Single and dual phase				Three phase	
		ECI 15	ECI 30	ECI 50	ECI 63	ECI 10	ECI 20
+40°C	[A]	15	30	50	63	10	20
+50°C	[A]	12.5	25	40	50	8	16
+60°C	[A]	10	20	30	35	6.5	13

Technical data

Output specification

		Single and dual phase ¹⁾				Three phase	
		ECI 15	ECI 30	ECI 50	ECI 63	ECI 10	ECI 20
Operational current	[A]						
AC-1, AC-51 (heater load)	max.	15	30	50	63	10	20
AC-3, AC-53a (motor load)	max.	15 ²⁾	15	15	30	10	10
Operational voltage (50/60 Hz)		12 - 230 V a.c. 24 - 480 V a.c. 24 - 600 V a.c.					
Leakage current	max.	1 mA					
Operational current	min.	10 mA					
Semiconductor protection fusing		50 A gL/gG		80A gL/gG		35 A gL/gG	
Type 1 coordination		1800 A ² s ²⁾		6300 A ² s		450 A ² s	
Type 2 coordination	Pt(t=10ms)						

¹⁾ Dual phase: Current rating is accumulated, i.e. the sum of current in L1 and L2

²⁾ Contactors designed for 600 V: AC-3 load 10 A max., type 2 coordination fuse 450 A²s

Control circuit specification

Control voltage range (±10%)		5 - 24 V d.c. / 24 - 230 V a.c. / d.c.
Pick-up voltage	max.	4.25 V d.c. / 20.4 V a.c. / d.c.
Drop-out voltage	min.	1.5 V d.c. / 7.2 V a.c. / d.c.
Control current / power	max.	15 mA at 24 V d.c. / 1.5 VA at 24 V d.c.
Response time	max.	½ cycle / 1 cycle
EMC immunity		Meets requirements of EN 60947-4-3

Insulation

Rated insulation voltage	U _i	660 V a.c.
Rated impulse withstand voltage	U _{imp}	4 kV
Installation category		III

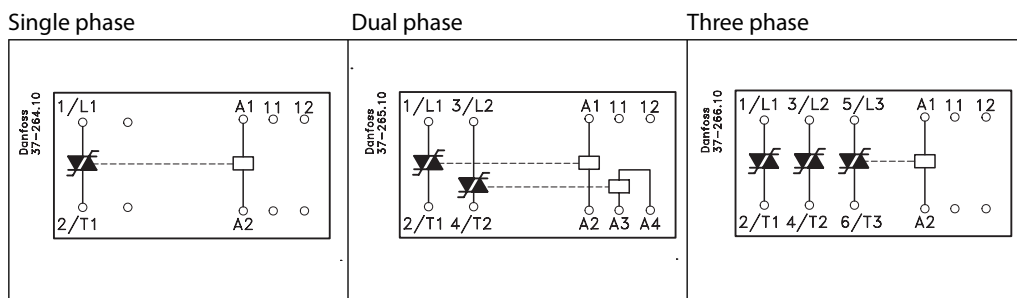
Thermal specification

	Single and dual phase				Three phase	
	ECI 15	ECI 30	ECI 50	ECI 63	ECI 10	ECI 20
Power dissipation continuous duty intermitten duty	1.2 W/A (per phase) 1.2 W/A × duty cycle (per phase)				3 W/A 3 W/A × duty cycle	
Ambient temperature range	-5°C to +40°C					
Cooling method	Natural convection					
Mounting	Vertical (see general mounting instruction)					
Storage temperature range	-20°C to +80°C					
Enclosure degree/ pollution degree	IP 20 / 3					

Materials

Housing	Self-extinguishing PPO UL94V1
Heatsink	Aluminium black anodized
Base	Electroplated steel

Wiring diagram



Terminals 11 and 12 have no connection to the internal circuit but are intended for connection to an optional overload protection (see overheat protection instruction, page 4).

Applications

Single phase

Max. heater power [kW]

	230 V	400 V	575 V
ECI 15-1	3.5	6	8.7
ECI 30-1	6.9	12	17.3
ECI 50-1	11.5	20	28.8
ECI 63-1	14.5	25.1	36.2

Max. heater power [kW]

	230 V	400 V	575 V
ECI 15-1	6	10.3	15
ECI 30-1	11.9	20.8	29.9
ECI 50-1	19.9	34.6	49.7
ECI 63-1	25.1	43.6	62.6

Dual phase

Max. heater power [kW]

	230 V	400 V	575 V
ECI 30-2	6.9	12	17.3
ECI 50-2	11.5	20	28.8

Max. heater power [kW]

	230 V	400 V	575 V
ECI 30-2	6.9	12	17.3
ECI 50-2	11.5	20	28.8

Three phase

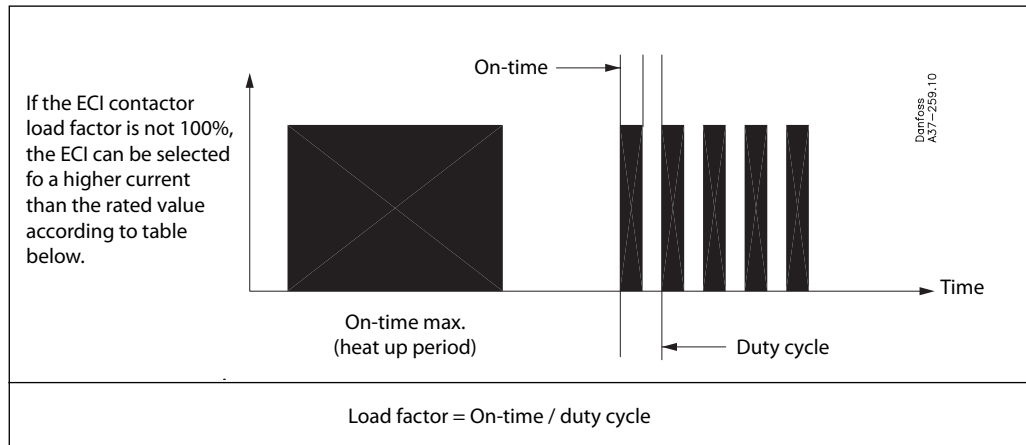
Max. heater power [kW]

	230 V	400 V	575 V
ECI 30-2	4	6.9	10
ECI 50-2	8	13.8	20

Max. heater power [kW]

	230 V	400 V	575 V
ECI 30-2	4	6.9	10
ECI 50-2	8	13.8	20

Duty cycle rating



ECI 15-1

Load current	On-time max.	Load factor max.
17.5 A	15 min.	85%
20 A	13 min.	75%
22.5 A	11 min.	67%
25 A	9 min.	60%
27.5 A	7 min.	55%
30 A	5 min.	50%

ECI 15-1 for 600 V

Load current	On-time max.	Load factor max.
17.5 A	15 min.	85%
20 A	13 min.	75%

ECI 30-1 and ECI 30-2

Load current	On-time max.	Load factor max.
35 A	15 min.	85%
40 A	13 min.	75%
45 A	11.5 min.	67%
50 A	10 min.	60%

ECI 10-3

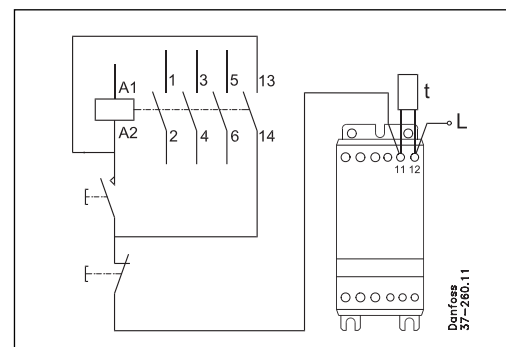
Load current	On-time max.	Load factor max.
12.5 A	15 min.	85%
15 A	13 min.	75%
17.5 A	11.5 min.	67%
20 A	10 min.	60%

Overheat protection

If required the controller can be protected against overheating by inserting a thermostat in the slot on the right-hand side of the controller.

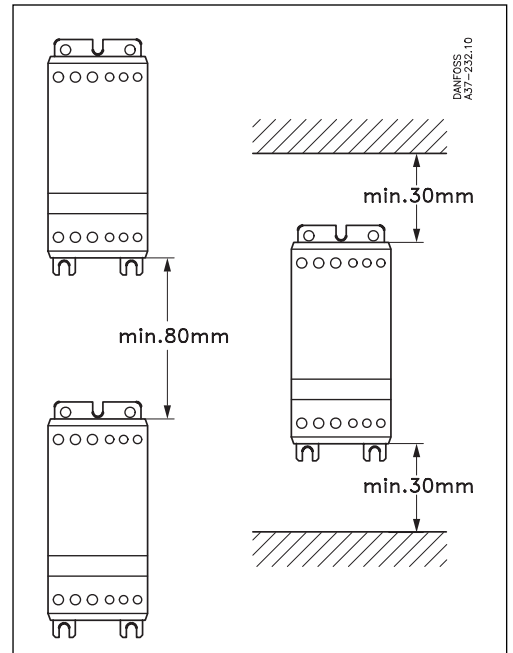
Order: UP 62 thermostat 037N0050

The thermostat is connected in series with the control circuit of the main contactor. When the temperature of the heat sink exceeds 100°C the main contactor will be switched OFF. A manual reset is necessary to restart this circuit.

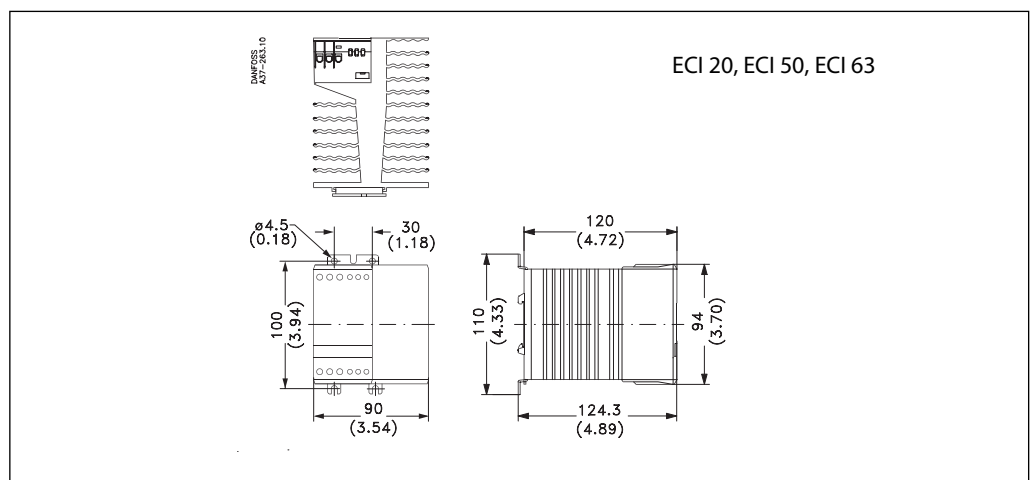
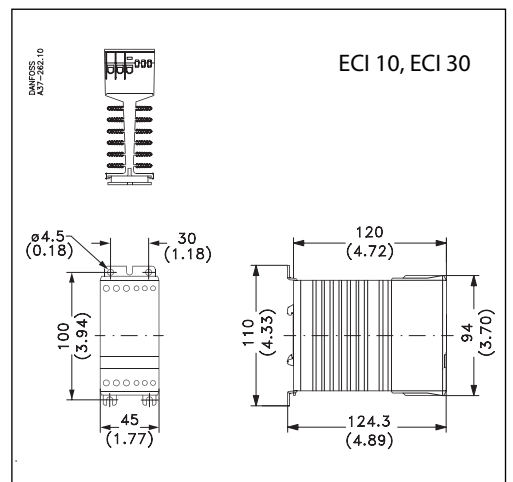
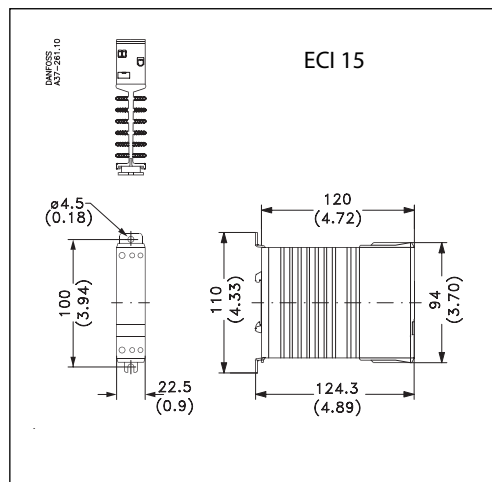


Mounting instruction

The controller is designed for vertical mounting. If the controller is mounted horizontally the load current must be reduced by 50%. The controller needs no side clearance. Clearance between two vertical mounted controller must be minimum 80 mm (3.15"). Clearance between controller and top and bottom walls must be minimum 30 mm (1.2").



Dimensions
[mm (inches)]



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