### **DATASHEET - DILM25-10(24V50HZ)**

Contactor, 3 pole, 380 V 400 V 11 kW, 1 N/O, 24 V 50 Hz, AC operation, Screw terminals



Part no. DILM25-10(24V50HZ)

Catalog No. 277119 Alternate Catalog XTCE025C10U

No.

**EL-Nummer** 4130340

(Norway)

#### **Delivery program**

Delivery program			
Product range			Contactors
Application			Contactors for Motors
Subrange			Contactors up to 170 A, 3 pole
Utilization category			AC-1: Non-inductive or slightly inductive loads, resistance furnaces AC-3/AC-3e: Normal AC induction motors: Starting, switching off while running AC-4: Normal AC induction motors: starting, plugging, reversing, inching
Notes			Also suitable for motors with efficiency class IE3.
Connection technique			Screw terminals
Number of poles			3 pole
Rated operational current			
AC-3			
Notes			At maximum permissible ambient temperature (open.) Also tested according to AC-3e.
380 V 400 V	I <sub>e</sub>	Α	25
AC-1			
Conventional free air thermal current, 3 pole, 50 - 60 Hz			
Open			
at 40 °C	$I_{th} = I_e$	Α	45
enclosed	I <sub>th</sub>	Α	36
Conventional free air thermal current, 1 pole			
open	I <sub>th</sub>	Α	100
enclosed	I <sub>th</sub>	Α	90
Max. rating for three-phase motors, 50 - 60 Hz			
AC-3			
220 V 230 V	Р	kW	7.5
380 V 400 V	Р	kW	11
660 V 690 V	Р	kW	14
AC-4			
220 V 230 V	Р	kW	3.5
380 V 400 V	Р	kW	6
660 V 690 V	Р	kW	8.5
Contacts			
N/O = Normally open			1 N/0
Can be combined with auxiliary contact			DILA-XHI(V)(-PI) DILM32-XHI(-PI) DILM32-XHI11-S
Actuating voltage			24 V 50 Hz
Voltage AC/DC			AC operation
Connection to SmartWire-DT			no
Instructions			Contacts to EN 50 012.
Frame size			2

## **Technical data**

#### General

Standards	IEC/EN 60947, VDE 0660, UL, CSA
Lifespan, mechanical	

AC operated	Operations	x 10 <sup>6</sup>	10
Operating frequency, mechanical	·	X 10	
AC operated	Operations/h		5000
Climatic proofing	орстанопадп		Damp heat, constant, to IEC 60068-2-78
Omitato proofing			Damp heat, cyclic, to IEC 60068-2-30
Ambient temperature			
Open		°C	-25 - +60
Enclosed		°C	- 25 - 40
Storage		°C	- 40 - 80
Mechanical shock resistance (IEC/EN 60068-2-27)			
Half-sinusoidal shock, 10 ms			
Main contacts			
N/O contact		g	10
Auxiliary contacts			
N/O contact		g	7
N/C contact		g	5
Mechanical shock resistance (IEC/EN 60068-2-27) when tabletop-mounted			
Half-sinusoidal shock, 10 ms			
Main contacts			
N/O contact		g	6.9
Auxiliary contacts			
N/O contact		g	5.3
N/C contact		g	3.5
Degree of Protection			IP00
Protection against direct contact when actuated from front (EN 50274)			Finger and back-of-hand proof
Altitude		m	Max. 2000
Weight			
AC operated		kg	0.428
Screw connector terminals			
Terminal capacity main cable			
Solid		$\text{mm}^2$	1 x (0.75 - 16)
Flexible with ferrule		2	2 x (0.75 - 10) 1 x (0.75 - 16)
riexible with terrule		mm <sup>2</sup>	2 x (0.75 - 10)
Stranded		mm <sup>2</sup>	1 x 16
Solid or stranded		AWG	single 18 - 6, double 18 - 8
Stripping length		mm	10
Terminal screw			M5
Tightening torque		Nm	3.2
Tool			
Pozidriv screwdriver		Size	2
Standard screwdriver		mm	0.8 × 5.5
			1x6
Terminal capacity control circuit cables			
Solid		mm <sup>2</sup>	1 x (0.75 - 4) 2 x (0.75 - 2.5)
Flexible with ferrule		mm <sup>2</sup>	1 x (0.75 - 2.5)
		mm-	2 x (0.75 - 2.5)
Solid or stranded		AWG	18 - 14
Stripping length		mm	10
Terminal screw			M3.5
Tightening torque		Nm	1.2
Tool			
Pozidriv screwdriver		Size	2
Standard screwdriver		mm	0.8 x 5.5 1 x 6
Main conducting paths			
Rated impulse withstand voltage	U <sub>imp</sub>	V AC	8000

Rated impulse withstand voltage	U <sub>imp</sub>	V AC	8000			
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Rated insentations voltinge   Ui	oltage category/pollution degree			III/3
Soft isolation to EN 61140         Image: Contract s or the contact s or the	insulation voltage	Ui	V AC	690
Safe adalation to EN 81140         VAC         440           between roil and contracts         VAC         440           between the contacts         VAC         440           Multing capacity (f), fix to ECEN 60947)         Up to 888 V         A         550           Servating capacity (f), fix to ECEN 60947)         A         250           380 V 400 V         A         250           980 V 480 V         A         150           Short-circular tracing         Short-circular tracing         A         150           Short-circular tracing         Short-circular tracing         A         150           Short-circular tracing of and tracing         B         Short-circular tracing         A         150           Short-circular tracing of and tracing of and tracing of an analysis of a	operational voltage	U <sub>e</sub>	V AC	690
Desirvation the contracts				
Making capacity (p.f. to IEC/EN 60947)         Qu to 690 V         A 2         300           Breaking capacity         A 2         200           220 V 230 V         A 2         200           500 V         A 250         200           500 V         A 250         200           Short-circuit rating         A 250           Short-circuit protection maximum fuse         B 250         A 350           Type "2" coordination         G (9/4 S00) V         A 350           880 V         G (9/4 S00) V         A 300           B (9/4 S00) V         A 300         A 300           Coverentional current         G (9/4 S00) V         A 400           G (1 x) X (1 x	ween coil and contacts		V AC	440
Breaking capacity	ween the contacts		V AC	440
Breaking capacity         A         250           220 V 230 V         A         250           380 V 400 V         A         250           560 V 580 V         A         250           Short-circuit protection maximum fuse         B         Y           Type "2" coordination         B         C         A         250           400 V         gG/gt_500 V         A         35           400 V         gG/gt_500 V         A         30           400 V         gG/gt_500 V         A         30           400 V         gG/gt_500 V         A         30           800 V         A         10         10           ACT         B         Y         50           Reted operational current         B         Y         50           AC 3         Type "1" coordination         B         Y         50           B 50 V         A         10         10           B 50 V         B         10         10           B 50 V         B         4         3           B 50 V         B         4         4           B 50 V         B         4         4           B 50 V	g capacity (p.f. to IEC/EN 60947)			
Breaking capacity         A         250           220 V 230 V         A         250           380 V 400 V         A         250           560 V 580 V         A         250           Short-circuit protection maximum fuse         B         Y           Type "2" coordination         B         C         A         250           400 V         gG/gt_500 V         A         35           400 V         gG/gt_500 V         A         30           400 V         gG/gt_500 V         A         30           400 V         gG/gt_500 V         A         30           800 V         A         10         10           ACT         B         Y         50           Reted operational current         B         Y         50           AC 3         Type "1" coordination         B         Y         50           B 50 V         A         10         10           B 50 V         B         10         10           B 50 V         B         4         3           B 50 V         B         4         4           B 50 V         B         4         4           B 50 V		Up to 690 V	Α	350
Sab V 400 V	ng capacity			
SOU V   SOU	) V 230 V		Α	250
Short-circuit rating   Short-circuit protection maximum fuse   Tyer "2" coordination   400 V   869 V   A   35	) V 400 V		Α	250
Short-circuit rating   Short-circuit protection maximum fuse   Type "2" coordination     400 V	) V		Α	250
Short-circuit protection maximum fuse   Type "2" coordination   400 V	V 690 V		Α	150
Type "2" coordination  400 ∨	circuit rating			
400 \   GG/gL 500 \   A   35   35     Type "1" coordination	ort-circuit protection maximum fuse			
B80 V   Type "1" coordination	Type "2" coordination			
Type "1" coordination         gG/gL 500 V         A         100           690 V         aG/gL 690 V         A         50           AC-1         AC-1         Conventional current         Conventional tree air thermal current, 3 pole, 50 - 60 Hz         Conventional tree air thermal current, 3 pole, 50 - 60 Hz         Conventional tree air thermal current, 3 pole, 50 - 60 Hz         A         45           Open         at 0 °C         Ib = Ie         A         45           at 50 °C         Ib = Ie         A         42           at 60 °C         Ib = Ie         A         40           enclosed         Ib = Ie         A         40           conventional free air thermal current, 1 pole         B         B         B           open         Ib = Ie         A         40         B           conventional free air thermal current, 1 pole         B         B         B         B           open         Ib B         A         90         B         B         B         B           AC-3         Rated operational current         B         At maximum permissible ambient temperature (open.) Also tested according to AC-3e.         At maximum permissible ambient temperature (open.) Also tested according to AC-3e.         B         B         B         B         B <td>400 V</td> <td>gG/gL 500 V</td> <td>Α</td> <td>35</td>	400 V	gG/gL 500 V	Α	35
400 V   690 V   A   50	690 V	gG/gL 690 V	Α	35
AC   AC   Rated operational current   In the male current, 1 pole   In the male current, 1 pol	Type "1" coordination			
AC-1  Rated operational current  Conventional free air thermal current, 3 pole, 50 - 60 Hz  Open  at 40 °C  lth = le  at 50 °C  lth = le  at 60 °C  at 60 °C  lth = le  at 60 °C  at 60 °C	400 V	gG/gL 500 V	Α	100
AC-1       Rated operational current         Conventional free air thermal current, 3 pole, 50 - 60 Hz       4 5         0pen       4 40 °C       4 45         at 50 °C       4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	690 V	gG/gL 690 V	Α	50
Rated operational current   Conventional free air thermal current, 3 pole, 50 - 60 Hz   Un = Ie				
Conventional free air thermal current, 3 pole, 50 - 60 Hz   Open				
Open         Ith = Ie         A         45           at 50 °C         Ith = Ie         A         43           at 55 °C         Ith = Ie         A         42           at 60 °C         Ith = Ie         A         40           enclosed         Ith         A         36           Conventional free air thermal current, 1 pole         Ith         A         100           open         Ith         A         90           AC-3         Rated operational current         Open, 3-pole: 50 – 60 Hz         At maximum permissible ambient temperature (open.) Also tested according to AC-3e.           220 V 230 V         Ie         A         25           380 V 400 V         Ie         A         25           415 V         Ie         A         25           440V         Ie         A         25           440V         Ie         A         25				
at 50 °C   I <sub>th</sub> = I <sub>e</sub>				
at 55 °C	at 40 °C	$I_{th} = I_e$	Α	45
at 60 °C   Ith = Ie	at 50 °C	$I_{th} = I_e$	Α	43
Ith	at 55 °C	$I_{th} = I_e$	Α	42
Conventional free air thermal current, 1 pole	at 60 °C	$I_{th} = I_e$	Α	40
open         I <sub>th</sub> A         100           enclosed         I <sub>th</sub> A         90           AC-3         Rated operational current           Open, 3-pole: 50 − 60 Hz         At maximum permissible ambient temperature (open.) Also tested according to AC-3e.           220 V 230 V         I <sub>e</sub> A         25           240 V         I <sub>e</sub> A         25           380 V 400 V         I <sub>e</sub> A         25           415 V         I <sub>e</sub> A         25           440 V         I <sub>e</sub> A         25           440 V         I <sub>e</sub> A         25	enclosed	I <sub>th</sub>	Α	36
Part	Conventional free air thermal current, 1 pole			
AC-3  Rated operational current  Open, 3-pole: 50 – 60 Hz  Notes  At maximum permissible ambient temperature (open.) Also tested according to AC-3e.  220 V 230 V  le A 25  240 V  le A 25  380 V 400 V  le A 25  415 V  le A 25  440V  le A 25  440V	open	I <sub>th</sub>	Α	100
Rated operational current  Open, 3-pole: 50 – 60 Hz  Notes  At maximum permissible ambient temperature (open.) Also tested according to AC-3e.  220 V 230 V  Ie A 25  240 V  Ie A 25  380 V 400 V  Ie A 25  415 V  Ie A 25  440V  Ie A 25  440V	enclosed	I <sub>th</sub>	Α	90
Open, 3-pole: 50 – 60 Hz         At maximum permissible ambient temperature (open.) Also tested according to AC-3e.           220 V 230 V         I <sub>e</sub> A         25           240 V         I <sub>e</sub> A         25           380 V 400 V         I <sub>e</sub> A         25           415 V         I <sub>e</sub> A         25           440V         I <sub>e</sub> A         25           440V         I <sub>e</sub> A         25				
Notes       At maximum permissible ambient temperature (open.) Also tested according to AC-3e.         220 V 230 V       I <sub>e</sub> A       25         240 V       I <sub>e</sub> A       25         380 V 400 V       I <sub>e</sub> A       25         415 V       I <sub>e</sub> A       25         440V       I <sub>e</sub> A       25	ted operational current			
Notes       At maximum permissible ambient temperature (open.) Also tested according to AC-3e.         220 V 230 V       I <sub>e</sub> A       25         240 V       I <sub>e</sub> A       25         380 V 400 V       I <sub>e</sub> A       25         415 V       I <sub>e</sub> A       25         440V       I <sub>e</sub> A       25				
240 V				At maximum permissible ambient temperature (open.) Also tested according to AC-3e.
380 V 400 V	220 V 230 V	I <sub>e</sub>	Α	25
380 V 400 V			Α	25
415 V			Α	25
440V I <sub>e</sub> A 25				
JULY V				
660 V 690 V I <sub>e</sub> A 15				13
Motor rating P kWh	· ·			
220 V 230 V P kW 7.5				
240V P kW 8.5				
380 V 400 V P kW 11				
415 V P kW 14.5				
440 V P kW 15.5				
500 V P kW 17.5				
660 V 690 V P kW 14	ODU V OSU V	۲	KVV	14
AC-4				

Open, 3-pole: 50 – 60 Hz			
220 V 230 V	l <sub>e</sub>	Α	13
240 V	l <sub>e</sub>	Α	13
380 V 400 V	I <sub>e</sub>	Α	13
415 V	I <sub>e</sub>	Α	13
440 V	I <sub>e</sub>	Α	13
500 V	I <sub>e</sub>	Α	13
660 V 690 V	l <sub>e</sub>	A	10
Motor rating	Р	kWh	
220 V 230 V	Р	kW	3.5
240 V	Р	kW	4
380 V 400 V	Р	kW	6
415 V	Р	kW	6.5
440 V	Р	kW	7
500 V	Р	kW	8
660 V 690 V	P	kW	8.5
DC			
Rated operational current, open			
DC-1			
60 V	l <sub>e</sub>	Α	40
110 V	l <sub>e</sub>	Α	40
220 V	l <sub>e</sub>	Α	40
Current heat loss			
3 pole, at I <sub>th</sub> (60°)		W	10.8
Current heat loss at I <sub>e</sub> to AC-3/400 V		W	4.2
Impedance per pole		mΩ	2.7
Magnet systems			
Voltage tolerance			
AC operated	Pick-up	$x\;U_{c}$	0.8 - 1.1
Drop-out voltage AC operated	Drop-out	x U <sub>c</sub>	0.3 - 0.6
Power consumption of the coil in a cold state and 1.0 x $\rm U_{S}$			
50 Hz	Pick-up	VA	52
50 Hz	Sealing	VA	7.1
50 Hz	Sealing	W	2.1
60 Hz	Pick-up	VA	67
60 Hz	Sealing	VA	8.7
60 Hz	Sealing	W	2.1
Duty factor	g	% DF	100
Changeover time at 100 % $U_S$ (recommended value)		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
Main contacts			
AC operated			10. 20
Closing delay		ms	16 - 22
Opening delay		ms	8 - 14
Arcing time		ms	10
Electromagnetic compatibility (EMC) Emitted interference			to EN 60947-1
Interference immunity			to EN 60947-1
Rating data for approved types			LI 0007/-1
Switching capacity			
Maximum motor rating			
Three-phase			
200 V 208 V		НР	7.5
230 V		НР	10
240 V 460 V		нР	15
		111	10

480 V		
575 V	НР	20
600 V		
Single-phase		
115 V 120 V	HP	2
230 V	НР	5
240 V		
General use	Α	40
Auxiliary contacts		
Pilot Duty		
AC operated		A600
DC operated		P300
General Use		
AC		600
AC		10
DC		250
DC Chart Circuit Current Detine		1
Short Circuit Current Rating	SCCR	
Basic Rating SCCR	kA	5
Max. Fuse		
max. Fuse		125 125
480 V High Fault	A	123
SCCR (fuse)	kA	10/100
max. Fuse		125/70 Class J
SCCR (CB)		10/65
max. CB		50/32
600 V High Fault		30/02
SCCR (fuse)	kA	10/100
max. Fuse		125/100 Class J
SCCR (CB)		10/22
max. CB	А	50/32
Special Purpose Ratings		
Electrical Discharge Lamps (Ballast)		
480V 60Hz 3phase, 277V 60Hz 1phase	Α	40
600V 60Hz 3phase, 347V 60Hz 1phase	Α	40
Incandescent Lamps (Tungsten)		
480V 60Hz 3phase, 277V 60Hz 1phase	Α	40
600V 60Hz 3phase, 347V 60Hz 1phase	Α	40
Resistance Air Heating		
480V 60Hz 3phase, 277V 60Hz 1phase		40
600V 60Hz 3phase, 347V 60Hz 1phase	Α	40
Refrigeration Control (CSA only)		
LRA 480V 60Hz 3phase		240
FLA 480V 60Hz 3phase		40
LRA 600V 60Hz 3phase		180
FLA 600V 60Hz 3phase	А	30
Definite Purpose Ratings (100,000 cycles acc. to UL 1995)		150
LRA 480V 60Hz 3phase		150
FLA 480V 60Hz 3phase	Α	25
Elevator Control	IID	2
200V 60Hz 3phase		3
200V 60Hz 3phase		11
240V 60Hz 3phase 240V 60Hz 3phase		5 15.2
480V 60Hz 3phase		10
τουν υυτι <b>2</b> υμπασσ	Ш	10

480V 60Hz 3phase	А	14
600V 60Hz 3phase	HP	15
600V 60Hz 3phase	Α	17

# Design verification as per IEC/EN 61439

200.g.: 1010ao.: 40 por 120, 211 01 100			
Technical data for design verification			
Rated operational current for specified heat dissipation	In	Α	25
Heat dissipation per pole, current-dependent	P <sub>vid</sub>	W	1.4
Equipment heat dissipation, current-dependent	P <sub>vid</sub>	W	4.2
Static heat dissipation, non-current-dependent	P <sub>vs</sub>	W	2.1
Heat dissipation capacity	P <sub>diss</sub>	W	0
Operating ambient temperature min.		°C	-25
Operating ambient temperature max.		°C	60
IEC/EN 61439 design verification			
10.2 Strength of materials and parts			
10.2.2 Corrosion resistance			Meets the product standard's requirements.
10.2.3.1 Verification of thermal stability of enclosures			Meets the product standard's requirements.
10.2.3.2 Verification of resistance of insulating materials to normal heat			Meets the product standard's requirements.
10.2.3.3 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects			Meets the product standard's requirements.
10.2.4 Resistance to ultra-violet (UV) radiation			Meets the product standard's requirements.
10.2.5 Lifting			Does not apply, since the entire switchgear needs to be evaluated.
10.2.6 Mechanical impact			Does not apply, since the entire switchgear needs to be evaluated.
10.2.7 Inscriptions			Meets the product standard's requirements.
10.3 Degree of protection of ASSEMBLIES			Does not apply, since the entire switchgear needs to be evaluated.
10.4 Clearances and creepage distances			Meets the product standard's requirements.
10.5 Protection against electric shock			Does not apply, since the entire switchgear needs to be evaluated.
10.6 Incorporation of switching devices and components			Does not apply, since the entire switchgear needs to be evaluated.
10.7 Internal electrical circuits and connections			Is the panel builder's responsibility.
10.8 Connections for external conductors			Is the panel builder's responsibility.
10.9 Insulation properties			
10.9.2 Power-frequency electric strength			Is the panel builder's responsibility.
10.9.3 Impulse withstand voltage			Is the panel builder's responsibility.
10.9.4 Testing of enclosures made of insulating material			Is the panel builder's responsibility.
10.10 Temperature rise			The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.
10.11 Short-circuit rating			Is the panel builder's responsibility. The specifications for the switchgear must be observed.
10.12 Electromagnetic compatibility			Is the panel builder's responsibility. The specifications for the switchgear must be observed.
10.13 Mechanical function			The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

## **Technical data ETIM 8.0**

Low-voltage industrial components (EG000017) / Power contactor, AC switching (E	C000066)			
Electric engineering, automation, process control engineering / Low-voltage switch technology / Contactor (LV) / Power contactor, AC switching (ecl@ss10.0.1-27-37-10-03 [AAB718015])				
Rated control supply voltage Us at AC 50HZ		٧	24 - 24	
Rated control supply voltage Us at AC 60HZ		٧	0 - 0	
Rated control supply voltage Us at DC		٧	0 - 0	
Voltage type for actuating			AC	
Rated operation current le at AC-1, 400 V		Α	45	
Rated operation current le  at AC-3, 400 V		Α	25	
Rated operation power at AC-3, 400 V		kW	11	
Rated operation current le at AC-4, 400 V		Α	13	
Rated operation power at AC-4, 400 V		kW	6	
Rated operation power NEMA		kW	11	
Modular version			No	

Number of auxiliary contacts as normally open contact	1
Number of auxiliary contacts as normally closed contact	0
Type of electrical connection of main circuit	Screw connection
Number of normally closed contacts as main contact	0
Number of normally open contacts as main contact	3