# **DATASHEET - DILH800/22(RAC500)**



Contactor, Ith =Ie: 1050 A, RAC 500: 250 - 500 V 40 - 60 Hz/250 - 700 V DC, AC and DC operation, Screw connection



Part no. DILH800/22(RAC500)
Catalog No. 197913
Alternate Catalog XTCEH800M22C

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No.

## **Delivery program**

Delivery program			
Product range			Contactors
Application			Mains contactors for resistive loads from 1000 A
Subrange			AC -1 contactors greater than 1000 A
Utilization category			AC-1: Non-inductive or slightly inductive loads, resistance furnaces
Connection technique			Screw connection
Rated operational current			
AC-1			
Conventional free air thermal current, 3 pole, 50 - 60 Hz			
Open			
at 40 °C	$I_{th} = I_e$	Α	1050
enclosed	I <sub>th</sub>	Α	800
Conventional free air thermal current, 1 pole			
open	I <sub>th</sub>	Α	2138
Contact sequence			A1 1 1 3 15 13 21 31 43 A2 2 4 4 6 14 22 32 44
For use with			DILH800-XHI
Actuating voltage			RAC 500: 250 - 500 V 40 - 60 Hz/250 - 700 V DC
Voltage AC/DC			AC and DC operation
Auxiliary contacts			
possible variants at auxiliary contact module fitting options			sidewise: 2 x DILH800-XHI11(V)-SI; 2 x DILH800-XHI11-SA
Side mounting auxiliary contacts			DILM820-XHI11(V)-SI  DILM820-XHI11-SA  DILM820-XHI11-SA
Instructions			Interlocked opposing contacts according to IEC/EN 60947-5-1 Appendix L, inside the auxiliary contact module Auxiliary contacts used as mirror contacts according to IEC/EN 60947-4-1 Appendix F (not N/C late open)
Instructions			integrated suppressor circuit in actuating electronics 660 V, 690 V or 1000 V: not directly reversing

### **Technical data**

#### General

delicial			
Standards			IEC/EN 60947, VDE 0660, UL, CSA, CCC
Lifespan, mechanical			
AC operated	Operations	x 10 <sup>6</sup>	3
DC operated	Operations	x 10 <sup>6</sup>	3
Operating frequency, mechanical			
AC operated	Operations/h		1000
DC operated	Operations/h		1000
Climatic proofing			Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30
Ambient temperature			
Open		°C	-40 - +70
Storage		°C	- 40 - + 80

Mechanical shock resistance (IECEN 80888-2-27)  Helf aimusoidal shock, 10 ms  Main contacts  NIO contact  Audilary contacts  NIO contact  NIO contact contaction screw/both  NIO contact contact contaction screw/both  NIO contact contact contact contaction screw/both  NIO contact co	Mounting position			30°
Main contacts				
Main contacts	Mechanical shock resistance (IEC/EN 60068-2-27)			
NO centact   Auxillary centracts   NO centact	Half-sinusoidal shock, 10 ms			
Auxiliary contacts         W         g         10           N/C contact         g         g         10           Degree of Protection         P0         P0           Altitude         F0         P0           Weight         W         m         Max 2000           Terminal capacity main cable         W         T0         \$0           Flexible with cable lug         mm²         \$0         24           Busbar         Midh         mm²         \$0           Main cable connection screwfbolt         mm²         \$0           Topininal capacity control circuit cables         mm²         \$1           Elexible with ferrule         mm²         \$1         \$1           Solid or stranded         mm²         \$1         \$1           Solid or stranded connection screw/bolt         mm²         \$1         \$1           Control circuit cable connection screw/bolt         mm²         \$1         \$1           Topingang         mm²         \$1         \$1           Width across flats         mm²         \$1         \$1           Main cable         mm²         \$1         \$1           Width across flats         mm²         \$1         \$1	Main contacts			
N/O contact	N/O contact		g	10
N/C contact	Auxiliary contacts			
Degree of Protection         IPO           Altitude         m         Max 2000           Velight         Very         kg         5           Terminal capacity main cable         Very         mar         0         20           Flexable with cable lug         mar         0         0         20         0         0           Busbar         Width         mm         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0	N/O contact		g	10
Melight	N/C contact		g	8
Weight         kg         95           Terminal capacity main cable         mar²         50-240           Flexiblio with cable lug         mm²         50-240           Busbar         mm²         70-240           Main cable connection screwbolt         mm²         50-240           Main cable connection screwbolt         mm²         24-24           Terminal capacity control circuit cables         mm²         14-10,75-25)           Solid         mm²         11-10,75-25)           Plaxible with ferrule         mm²         11-10,75-25)           Solid or stranded         mm²         11-10,75-25)           Minc cable         mm²         11-10,75-25)           Main cable         mm²         11-10,75-25)           Main cable         mm²         11-10,75-25           With a cross flats         mm²         11-10,75-25           Stranded screwdriver         mm²	Degree of Protection			IP00
Flexible with cable lug	Altitude		m	Max. 2000
Flexible with cable lug	Weight		kg	9.5
Stranded with cable lug         mm²         70 - 240           Busbar         Width         mm²         50           Main cable connection screw/bolt         M10         24           Tightening torque         Nm         24           Solid         mm²         1 x (0.75 - 2.5)           Solid         mm²         1 x (0.75 - 2.5)           Flexible with ferrule         mm²         1 x (0.75 - 2.5)           Solid or stranded         AWG         18 - 14           Stripping length         mm         10           Control circuit cable connection screw/bolt         mm         10           Tightening torque         mm         1.2           Tool         M3.5         3.5           Main cable         mm         1.2           Width across flats         mm         1.6           Control circuit cables         mm         1.6           Posidriv screwdriver         size         2           Standard screwdriver         mm         0.8 x 5.5/1 x 6           Rated dimpulse withstand voltage         U <sub>imp</sub> VAC         1000           Overvoltage category/jollution degree         U <sub>im</sub> VAC         1000           Rated insulation voltage	Terminal capacity main cable			
Stranded with cable lug         Width         mm²         70 - 240           Busbar         Width         mm         50           Main cable connection screw/bolt         MID         MID           Tightening torque         Nm         24           Ferminal capacity control circuit cables         Ix (0.75 - 2.5)         Ix (0.75 - 2.5)           Solid         mm²         1 x (0.75 - 2.5)         Ix (0.75 - 2.5)           Solid or stranded         AWG         1x 14         Ix (0.75 - 2.5)           Solid or stranded         MWG         1x 14         Ix (0.75 - 2.5)           Solid or stranded         MWG         1x 14         Ix (0.75 - 2.5)           Solid or stranded         MWG         1x 14         Ix (0.75 - 2.5)           Solid or stranded         MWG         1x 14         Ix (0.75 - 2.5)           Solid or stranded         MWG         1x 14         IX (0.75 - 2.5)           Solid or stranded         Solid or stranded         MWG         1x 14           Strander Stranded         MWG         1x 12         IX (0.75 - 2.5)           Main cable         MWG         1x 12         IX (0.75 - 2.5)         IX (0.75 - 2.5)           Polidirius screwdriver         Size         Size         2 <td< td=""><td>Flexible with cable lug</td><td></td><td>mm<sup>2</sup></td><td>50 - 240</td></td<>	Flexible with cable lug		mm <sup>2</sup>	50 - 240
Busbar         Wridth         mm         50           Main cable connection screw/bolt         Nm         24           Tightening torque         Nm         24           Terminal capacity control circuit cables         Terminal capacity control circuit cables         Terminal capacity control circuit cables           Solid         mm²         1 x (0.75 - 2.5)         2 x (0.75 - 2.5)           Flaxible with ferrule         AWG         12 x (0.75 - 2.5)         2	Stranded with cable lug		mm <sup>2</sup>	70 - 240
Main cable connection screw/bolt         M10           Tightening torque         Nm         24           Terminal capacity control circuit cables         Imm²         1 x (0.75 - 2.5)           Solid         mm²         1 x (0.75 - 2.5)           Flexible with ferrule         mm²         1 x (0.75 - 2.5)           Solid or stranded         AWG         18 - 14           Stripping length         M3.5         M3.5           Control circuit cable connection screw/bolt         M3.5         M3.5           Tightening torque         Mm         1.2           Main cable         mm         16           Width across flats         mm         16           Control circuit cables         Size         2           Pozidriv screwdriver         Size         2           Standard screwdriver         mm         0.8 x 55/1 x 6           Main conducting paths         Uimp         V AC         1000           Rated impulse withstand voltage         Ui         V AC         1000           Overvoltage category/pollution degree         III/3         1000           Rated insulation voltage         Ui         V AC         1000           Sale isolation to EN 81140         V AC         10000 <td></td> <td>Width</td> <td></td> <td></td>		Width		
Tightening torque		vvidti		
Terminal capacity control circuit cables			Nm	
Solid			IVIII	LT
Solid or stranded 2x (0.75 - 2.5)  Solid or stranded mm 10  Control circuit cable connection screw/bolt mm 10  Tightening torque M3.5  Tightening torque M3.5  Tightening torque M6.5  Main cable M6.5  Control circuit cables M7.5  Pozidriv screwdriver Size 2  Standard screwdriver mm 0.8 x 5.5/1 x 6  Main conducting paths  Rated impulse withstand voltage Uimp V AC 1000  Rated operational voltage Ue V AC 1000  Rated operational voltage Ue V AC 1000  Rated operational voltage Ue V AC 1000			mm <sup>2</sup>	
Stripping length Control circuit cable connection screw/bolt Tightening torque Tool Main cable Width across flats Control circuit cables Pozidriv screwdriver Standard screwdriver Standard screwdriver Main conducting paths Rated impulse withstand voltage Uimp VAC 1000 Vervoltage category/pollution degree Rated operational voltage Ui Rated operational voltage Ui Rated operational voltage Ui VAC 1000 Safe isolation to EN 61140	Flexible with ferrule		mm <sup>2</sup>	
Control circuit cable connection screw/bolt  Tightening torque  Nm 1.2  Tool  Main cable  Width across flats  Control circuit cables  Pozidriv screwdriver  Standard screwdriver  Standard screwdriver  Main conducting paths  Rated impulse withstand voltage  Uimp  VAC  12000  Overvoltage category/pollution degree  Rated operational voltage  Ui  VAC  1000  Rated operational voltage  VAC  1000  Safe isolation to EN 61140	Solid or stranded		AWG	18 - 14
Tightening torque Nm 1.2  Tool  Main cable  Width across flats mm 16  Control circuit cables  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 12000  Overvoltage category/pollution degree  Rated operational voltage U <sub>e</sub> V AC 1000  Rated operational voltage  U <sub>e</sub> V AC 1000  Safe isolation to EN 61140	Stripping length		mm	10
Tool  Main cable  Width across flats  Pozidriv screwdriver  Size  Standard screwdriver  Standard screwdriver  Main conducting paths  Rated impulse withstand voltage  Uimp  VAC  12000  III/3  Rated operational voltage  Ui  VAC  VAC  1000  Rated operational voltage  VAC  Size 2   VAC  1000  III/3  Rated insulation voltage  VAC  VAC  1000  Rated operational voltage	Control circuit cable connection screw/bolt			M3.5
Main cable Width across flats Control circuit cables Pozidriv screwdriver Size 2 Standard screwdriver mm 0.8 x 5.5/1 x 6  Main conducting paths Rated impulse withstand voltage Uimp VAC 12000 Overvoltage category/pollution degree Rated operational voltage Ui VAC 1000 Rated operational voltage Ue VAC 1000 Safe isolation to EN 61140	Tightening torque		Nm	1.2
Width across flats  Control circuit cables  Pozidriv screwdriver  Size 2  Standard screwdriver  mm 0.8 x 5.5/1 x 6  Main conducting paths  Rated impulse withstand voltage  Uimp V AC 12000  Overvoltage category/pollution degree  Ui V AC 1000  Rated operational voltage  Ue V AC 1000  Safe isolation to EN 61140	Tool			
Control circuit cables  Pozidriv screwdriver Size 2  Standard screwdriver mm 0.8 x 5.5/1 x 6  Main conducting paths  Rated impulse withstand voltage Uimp V AC 12000  Overvoltage category/pollution degree Rated insulation voltage Ui V AC 1000  Rated operational voltage Ue V AC 1000  Safe isolation to EN 61140	Main cable			
Pozidriv screwdriver Size 2 Standard screwdriver mm 0.8 x 5.5/1 x 6  Main conducting paths Rated impulse withstand voltage Uimp V AC 12000 Overvoltage category/pollution degree III/3 Rated insulation voltage Ui V AC 1000 Rated operational voltage Ue V AC 1000 Safe isolation to EN 61140	Width across flats		mm	16
Standard screwdriver mm 0.8 x 5.5/1 x 6  Main conducting paths  Rated impulse withstand voltage U <sub>imp</sub> V AC 12000  Overvoltage category/pollution degree III/3  Rated insulation voltage U <sub>i</sub> V AC 1000  Rated operational voltage U <sub>e</sub> V AC 1000  Safe isolation to EN 61140	Control circuit cables			
Main conducting paths  Rated impulse withstand voltage  Overvoltage category/pollution degree  Rated insulation voltage  Ui  V AC  12000  III/3  Rated insulation voltage  Ui  V AC  1000  Rated operational voltage  Ue  V AC  1000	Pozidriv screwdriver		Size	2
Rated impulse withstand voltage  Overvoltage category/pollution degree  Rated insulation voltage  Ui V AC  12000  III/3  Rated insulation voltage  Ui V AC  1000  Safe isolation to EN 61140	Standard screwdriver		mm	0.8 x 5.5/1 x 6
Overvoltage category/pollution degree III/3  Rated insulation voltage U <sub>i</sub> V AC 1000  Rated operational voltage U <sub>e</sub> V AC 1000  Safe isolation to EN 61140				
Rated insulation voltage  Ui VAC 1000  Rated operational voltage  Ue VAC 1000  Safe isolation to EN 61140	Rated impulse withstand voltage	U <sub>imp</sub>	V AC	12000
Rated operational voltage  U <sub>e</sub> V AC 1000  Safe isolation to EN 61140	Overvoltage category/pollution degree			III/3
Safe isolation to EN 61140	Rated insulation voltage	Ui	V AC	1000
	Rated operational voltage	U <sub>e</sub>	V AC	1000
between coil and contacts V AC 1000	Safe isolation to EN 61140			
	between coil and contacts		V AC	1000
between the contacts V AC 1000	between the contacts		V AC	1000
Making capacity (p.f. to IEC/EN 60947)  A 6000	Making capacity (p.f. to IEC/EN 60947)		Α	6000
Breaking capacity	Breaking capacity			
220 V 230 V A 4800	220 V 230 V		Α	4800
380 V 400 V A 4800	380 V 400 V		Α	4800
500 V A 4800	500 V		Α	4800
660 V 690 V A 2000	660 V 690 V		Α	2000
1000 V A 1575	1000 V		Α	1575
Short-circuit rating	Short-circuit rating			
Short-circuit protection maximum fuse	Short-circuit protection maximum fuse			
AC-1	AC-1			
400 V aR 500 V A 1260 (2 x 630)	400 V	aR 500 V	Α	1260 (2 x 630)

900 14	B 005 17		1000 (0. 000)
690 V	aR 690 V	A	1260 (2 x 630)
1000 V	aR 1000 V	Α	1260 (2 x 630)
AC-1			
Rated operational current			
Conventional free air thermal current, 3 pole, 50 - 60 Hz			
Open			
at 40 °C	I <sub>th</sub> =I <sub>e</sub>	Α	1050
at 50 °C	I <sub>th</sub> =I <sub>e</sub>	A	940
at 55 °C		A	895
	I <sub>th</sub> =I <sub>e</sub>		
at 60 °C	I <sub>th</sub> =I <sub>e</sub>	A	855
enclosed	I <sub>th</sub>	Α	800
Conventional free air thermal current, 1 pole			
Note			at maximum permissible ambient air temperature
open	I <sub>th</sub>	Α	2138
Current heat loss		14/	ror
3 pole, at I <sub>th</sub> (60°)		W	56.5
Current heat loss at I <sub>e</sub> to AC-3/400 V		W	0.026
Magnet systems Voltage tolerance			
U <sub>S</sub>			250 - 500 V 40-60 Hz
05			250 - 700 V DC
AC operated	Pick-up		0.7 x U <sub>S min</sub> - 1.15 x U <sub>S max</sub>
DC operated	Pick-up		0.7 x U <sub>S min</sub> - 1.15 x U <sub>S max</sub>
AC operated	Drop-out		0.2 x U <sub>S max</sub> - 0.6 x U <sub>S min</sub>
DC operated	Drop-out		0.2 x U <sub>S max</sub> - 0.6 x U <sub>S min</sub>
Power consumption of the coil in a cold state and 1.0 x $U_S$			
Note on power consumption			Control transformer with $u_k \le 7\%$
Pull-in power	Pick-up	\/A	
	Pick-up	VA W	450 350
Pull-in power	·		
Sealing power	Sealing Sealing	VA W	4.3
Sealing power  Duty factor	Sealing	W % DF	3.3 100
Changeover time at 100 % U <sub>S</sub> (recommended value)		/0 DI	100
Main contacts		ma	60
Closing delay  Opening delay		ms	50
Behaviour in marginal and transitional conditions		ms	50
·			
Sealing Voltage interruptions			
			Time is bridged specifically
$(0 \dots 0.2 \times U_{c \text{ min}}) \le 10 \text{ ms}$			
(0 0.2 x U <sub>c min</sub> ) > 10 ms			Contactor drop-out
Voltage drops			
(0.2 0.6 x U <sub>c min</sub> ) ≤ 12 ms			Time is bridged specifically
(0.2 0.6 x U <sub>c min</sub> ) > 12 ms			Contactor drop-out
(0.6 0.7 x U <sub>c min</sub> )			Contactor remains switched on
Excess voltage			
(1.15 1.3 x U <sub>c max</sub> )			Contactor remains switched on
Pick-up phase			
(0 0.7 x U <sub>c min</sub> )			Contactor does not switch on
(0.7 x U <sub>c min</sub> 1.15 x U <sub>c max</sub> )			Contactor switches on properly
Admissible transitional contact resistance (of the external control circuit device		mΩ	≦ 500
when actuating A11)			
PLC signal level (A3 - A4) to IEC/EN 61131-2 (type 2)			
High		V	15

Low	V	5			
Electromagnetic compatibility (EMC)					
Electromagnetic compatibility		This product has been designed for use in the industrial sector (Environment A). Use in the residential area (Environment B) can produce radio interference, therefore additional interference suppression measures must be provided.			
Rating data for approved types					
Auxiliary contacts					
Pilot Duty					
AC operated		A600			
DC operated		P300			
General Use					
AC	V	600			
AC	А	6			
DC	V	250			
DC	А	1			
Special Purpose Ratings					
Resistance Air Heating					
480V 60Hz 3phase, 277V 60Hz 1phase	Α	800			
600V 60Hz 3phase, 347V 60Hz 1phase	А	800			

# Design verification as per IEC/EN 61439

2001gii 1011110ation ao poi 120/211 01 100			
Technical data for design verification			
Rated operational current for specified heat dissipation	In	Α	800
Equipment heat dissipation, current-dependent	P <sub>vid</sub>	W	0
Static heat dissipation, non-current-dependent	P <sub>vs</sub>	W	11.7
Heat dissipation capacity	P <sub>diss</sub>	W	0
Operating ambient temperature min.		°C	-40
Operating ambient temperature max.		°C	70
EC/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 switch gear must b observed. $\label{eq:constraint}$
10.12 Electromagnetic compatibility			Is the panel builder's responsibility. The specifications for the switch gear must be observed. $\label{eq:constraint}$
10.13 Mechanical function			The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

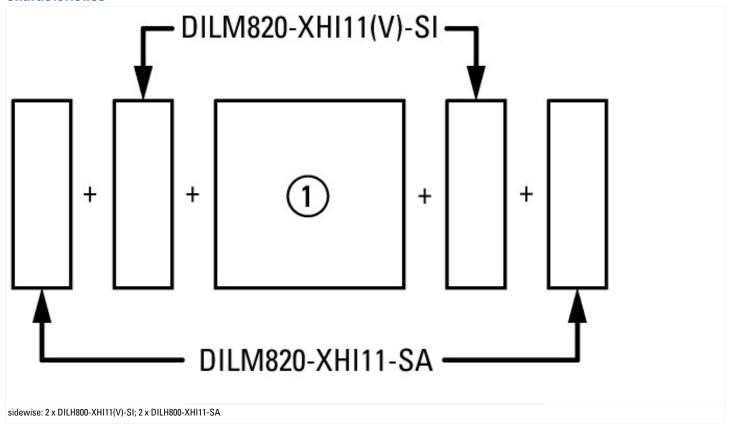
### **Technical data ETIM 8.0**

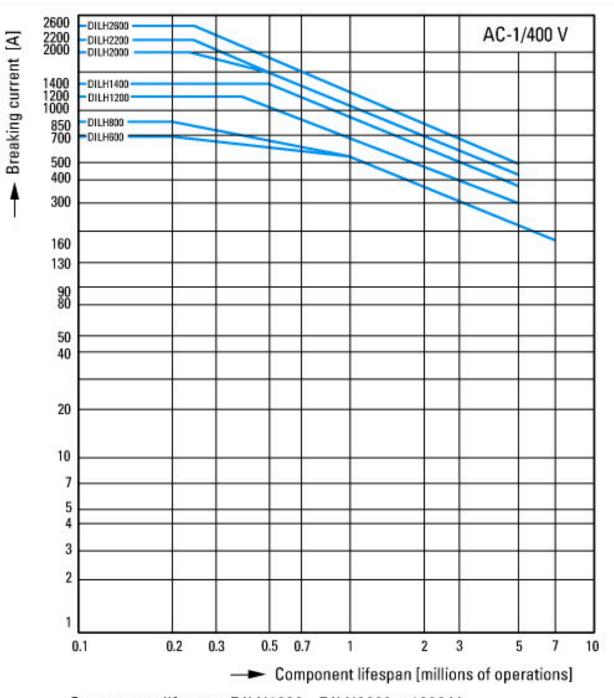
Low-voltage industrial components (EG000017) / Power contactor, AC switching (EC000066)			
Electric engineering, automation, process control engineering / Low-voltage switch technology / Contactor (LV) / Power contactor, AC switching (ecl@ss10.0.1-27-37-10-03 [AAB718015])			
Rated control supply voltage Us at AC 50HZ		V	250 - 500
Rated control supply voltage Us at AC 60HZ		V	250 - 500
Rated control supply voltage Us at DC		V	250 - 700
Voltage type for actuating			AC/DC
Rated operation current le at AC-1, 400 V		Α	1020
Rated operation current le  at AC-3, 400 V		Α	0
Rated operation power at AC-3, 400 V		kW	0
Rated operation current le  at AC-4, 400 V		Α	0
Rated operation power at AC-4, 400 V		kW	0
Rated operation power NEMA		kW	0
Modular version			No
Number of auxiliary contacts as normally open contact			2
Number of auxiliary contacts as normally closed contact			2
Type of electrical connection of main circuit			Rail connection
Number of normally closed contacts as main contact			0
Number of normally open contacts as main contact			3

# **Approvals**

• •	
Product Standards	IEC/EN 60947-4-1; UL 60947-4-1; CSA - C22.2 No. 60947-4-1-14; CE marking
UL File No.	E29096
UL Category Control No.	NLDX
CSA File No.	012528
CSA Class No.	3211-04
North America Certification	UL listed, CSA certified
Specially designed for North America	No

# **Characteristics**

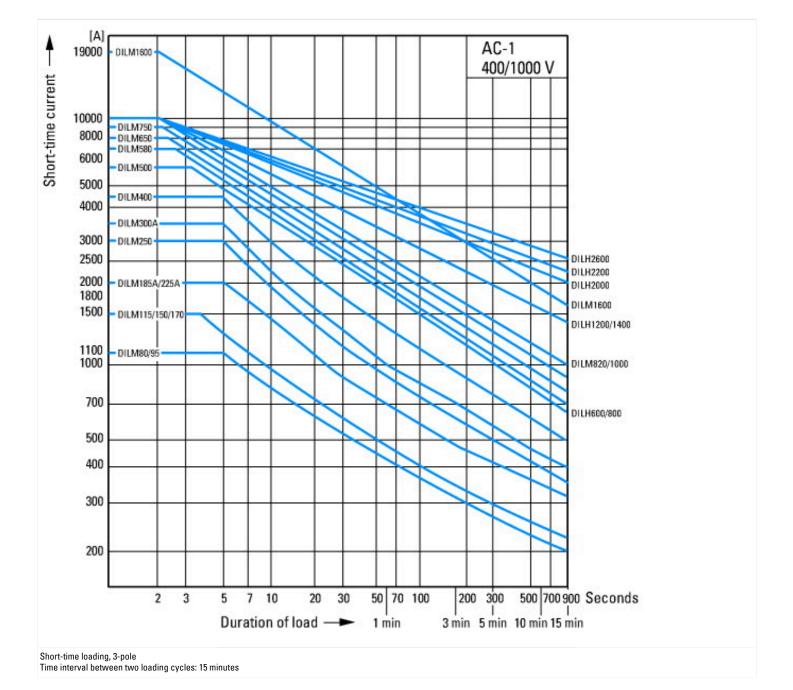




Component lifespan DILH1200 - DILH2600 ≦ 1000 V

Electrical lifespan AC-1

6/7



**Dimensions** 

