#### DATASHEET - DILER-31(110V50/60HZ)



Contactor relay, 110 V 50/60 Hz, N/O = Normally open: 3 N/O, N/C = Normally closed: 1 NC, Screw terminals, AC operation



Part no. Catalog No. Alternate Catalog No.

DILER-31(110V50/60HZ) 021624 log XTRM10A31E2

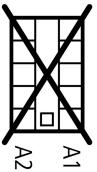
Similar to illustration

#### **Delivery program**

| Product range                                 |                |   | DILER Mini-contactors  |
|---|----------------|---|--|
| Application                                   |                |   | Contactor relays   |
| Description                                   |                |   | with interlocked opposing contacts   |
| Connection technique                          |                |   | Screw terminals  |
| Rated operational current                     |                |   |  |
| Conventional free air thermal current, 1 pole |                |   |  |
| Open  |                |   |  |
| at 50 °C                                      | $I_{th} = I_e$ | А | 10   |
| AC-15   |                |   |  |
| 220 V 230 V 240 V                             | le             | А | 6  |
| 380 V 400 V 415 V                             | le             | А | 3  |
| Contacts                                      |                |   |  |
| N/O = Normally open                           |                |   | 3 N/O  |
| N/C = Normally closed                         |                |   | 1 NC   |
| Contact sequence                              |                |   | $ \begin{array}{c} A^{1} \\ A^{1} \\ A^{2} $ |
| Code number and version of combination        |                |   |  |
| Distinctive number                            |                |   | 31E  |
| For use with                                  |                |   | DILE   |
| Actuating voltage                             |                |   | 110 V 50/60 Hz   |
| Voltage AC/DC                                 |                |   | AC operation   |
| Instructions                                  |                |   | Contact numbers to EN 50011<br>Coil terminal markings to EN 50005  |

# Technical data

| General                     |              |                   |  |
|-----------------------------|--------------|-------------------|--|
| Standards                   |              |                   | IEC/EN 60947, EN 60947-5-1, VDE 0660, UL, CSA                                  |
| Lifespan, mechanical        |              |                   |  |
| AC operated                 | Operations   | x 10 <sup>6</sup> | 10   |
| Maximum operating frequency | Operations/h |                   | 9000   |
| Climatic proofing           |              |                   | Damp heat, constant, to IEC 60068-2-78<br>Damp heat, cyclic, to IEC 60068-2-30 |
| Ambient temperature         |              |                   |  |
| Open                        |              | °C                | -25 - +50  |
| Enclosed                    |              | °C                | - 25 - 40  |
| Mounting position           |              |                   |  |
| Mounting position           |              |                   | As required, except vertical with terminals A1/A2 at the bottom                |



|   |                                 |                 | A1<br>A2  |
|---|---------------------------------|-----------------|---|
| Mechanical shock resistance (IEC/EN 60068-2-27)                               |                                 |                 |   |
| Half-sinusoidal shock, 10 ms  |                                 |                 |   |
| Basic unit with auxiliary contact module                                      |                                 | g               |   |
| N/O contact   |                                 | g               | 10  |
| N/C contact   |                                 | g               | 8   |
| Degree of Protection  |                                 |                 | IP20  |
| Protection against direct contact when actuated from front (EN 50274)         |                                 |                 | Finger and back-of-hand proof   |
| Altitude  |                                 | m               | Max. 2000   |
| Weight  |                                 |                 |   |
| AC operated   |                                 | kg              | 0.17  |
| Terminal capacities   |                                 | mm <sup>2</sup> |   |
| Screw terminals   |                                 |                 |   |
| Solid   |                                 | mm <sup>2</sup> | 1 x (0.75 - 2.5)  |
|   |                                 |                 | 2 x (0.75 - 2.5)  |
| Flexible with ferrule   |                                 | mm <sup>2</sup> | 1 x (0.75 - 1.5)<br>2 x (0.75 - 1.5)  |
| Solid or stranded   |                                 | AWG             | 18 - 14<br>1 × (18 - 14)<br>2 × (18 - 14)                                       |
| Stripping length  |                                 | mm              | 8   |
| Terminal screw  |                                 |                 | M3.5  |
| Pozidriv screwdriver  |                                 | Size            | 2   |
| Standard screwdriver  |                                 | mm              | 0.8 x 5.5<br>1 x 6  |
| Max. tightening torque  |                                 | Nm              | 1.2   |
| Contacts  |                                 |                 |   |
| Interlocked opposing contacts to ZH 1/457, including auxiliary contact module |                                 | V A C           | Yes   |
| Rated impulse withstand voltage   | U <sub>imp</sub>                | V AC            | 6000  |
| Overvoltage category/pollution degree   |                                 |                 | 111/3   |
| Rated insulation voltage  | Ui                              | V AC            | 690   |
| Rated operational voltage   | Ue                              | V AC            | 600   |
| Safe isolation to EN 61140  |                                 |                 |   |
| between coil and auxiliary contacts   |                                 | V AC            | 300   |
| between the auxiliary contacts  |                                 | V AC            | 300   |
| Rated operational current   |                                 | A               |   |
| Conventional free air thermal current, 1 pole                                 |                                 |                 |   |
| Open  |                                 | ٨               | 10  |
| at 50 °C  | I <sub>th</sub> =I <sub>e</sub> | A               | 10  |
| AC-15   |                                 |                 |   |
| 220 V 230 V 240 V   | l <sub>e</sub>                  | A               | 6   |
| 380 V 400 V 415 V   | le                              | A               | 3   |
| 500 V   | le                              | A               | 1.5   |
| DC current  |                                 |                 |   |
| Notes   |                                 |                 | Switch-on and switch-off conditions based on DC-13, time constant as specified. |
| DC L/R ≦ 15 ms  |                                 |                 |   |
| Contacts in series:   |                                 | A               |   |
| 1   | 24 V                            | A               | 2.5   |

| 2  | 60 V         | А                | 2.5  |
|--|--------------|------------------|--|
| 3  | 110 V        | A                | 1.5  |
| 3  | 220 V        | A                | 0.5  |
| Control circuit reliability                                  | Failure rate | λ                |  |
|  | Tanure Tate  | Λ                | <10 <sup>-8</sup> , < one failure at 100 million operations<br>(at U <sub>e</sub> = 24 V DC, U <sub>min</sub> = 17 V, I <sub>min</sub> = 5.4 mA) |
| Short-circuit rating without welding                         |              |                  |  |
| Maximum overcurrent protective device                        |              |                  |  |
| 220 V 230 V 240 V  |              | PKZM0            | 4  |
| 380 V 400 V 415 V  |              | PKZM0            | 4  |
| Short-circuit protection maximum fuse                        |              |                  |  |
| 500 V  |              | A gG/gL          | 6  |
| 500 V  |              | A fast           | 10   |
| Current heat loss at I <sub>th</sub>                         |              |                  |  |
| AC operated  |              | W                | 1.1  |
| Magnet systems   |              |                  |  |
| Voltage tolerance  |              |                  |  |
| AC operated  |              |                  |  |
| Single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 60 Hz | Pick-up      | x U <sub>c</sub> | 0.8 - 1.1  |
| Dual-frequency coil 50/60 Hz                                 | Pick-up      | x U <sub>c</sub> | 0.85 - 1.1   |
| Power consumption  |              |                  |  |
| AC operation   |              |                  |  |
| Dual-frequency coil 50/60 Hz                                 | Hold         | VA               | 5.4<br>3.9   |
| Dual-frequency coil 50/60 Hz                                 | Sealing      | W                | 1.8<br>1.8   |
| duty factor  |              | % DF             | 100  |
| Changeover time at 100 % ${\rm U}_{S}$ (recommended value)   |              |                  |  |
| AC operated closing delay                                    |              | ms               | 14 - 21  |
| AC operated N/O contact opening delay                        |              | ms               | 8 - 18   |
| AC operated With auxiliary contact module Max. closing delay |              | ms               | 45   |
| Rating data for approved types                               |              |                  |  |
| Auxiliary contacts   |              |                  |  |
| Pilot Duty   |              |                  |  |
| AC operated  |              |                  | A600   |
| DC operated  |              |                  | P300   |
| General Use  |              |                  |  |
| AC   |              | V                | 600  |
| AC   |              | А                | 10   |
| DC   |              | V                | 250  |
|  |              |                  |  |

## Design verification as per IEC/EN 61439

| •  |                   |    |  |
|--|-------------------|----|--|
| Technical data for design verification                                     |                   |    |  |
| Rated operational current for specified heat dissipation                   | In                | А  | 6  |
| Heat dissipation per pole, current-dependent                               | P <sub>vid</sub>  | W  | 0.4  |
| Equipment heat dissipation, current-dependent                              | P <sub>vid</sub>  | W  | 0  |
| Static heat dissipation, non-current-dependent                             | P <sub>vs</sub>   | W  | 1.8  |
| Heat dissipation capacity  | P <sub>diss</sub> | W  | 0  |
| Operating ambient temperature min.   |                   | °C | -25  |
| Operating ambient temperature max.   |                   | °C | 50   |
| 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.                         |

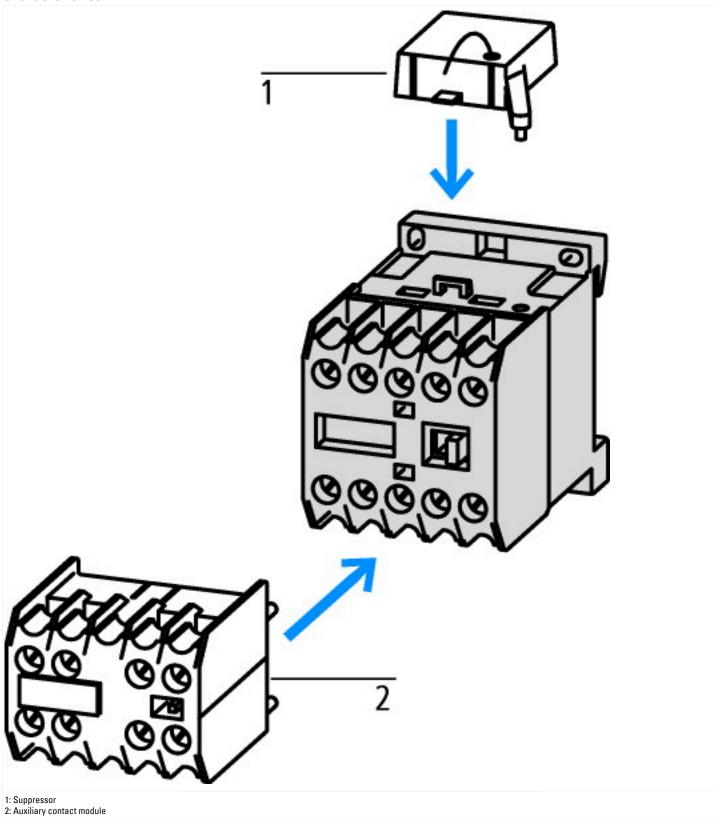
#### **Technical data ETIM 7.0**

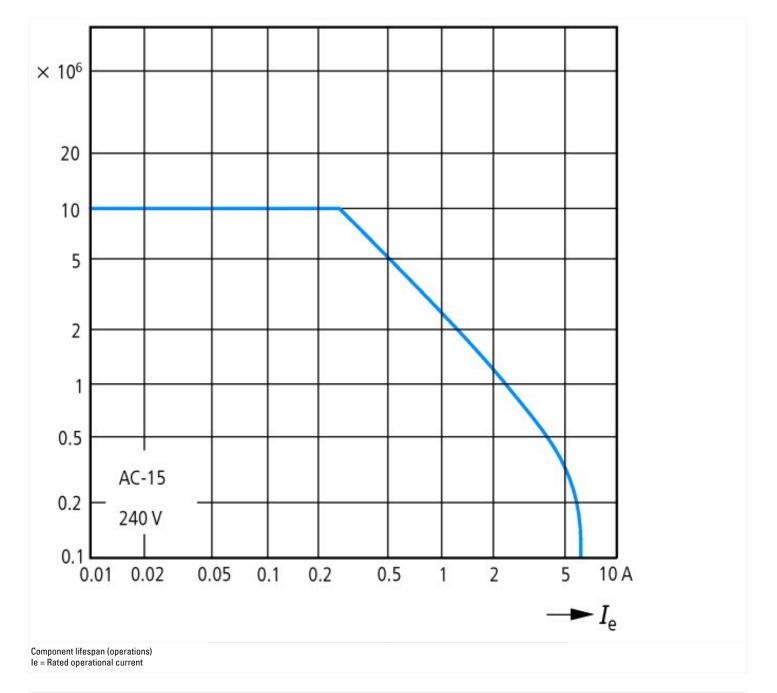
Low-voltage industrial components (EG000017) / Contactor relay (EC000196)

| Electric engineering, automation, process control engineering / Low-voltage switch technology / Contactor (LV) / Contactor relay (ecl@ss10.0.1-27-37-10-01 [AAB716014]) |   |                  |
|---|---|------------------|
| Rated control supply voltage Us at AC 50HZ  | V | 110 - 110        |
| Rated control supply voltage Us at AC 60HZ  | V | 110 - 110        |
| Rated control supply voltage Us at DC   | V | 0 - 0            |
| Voltage type for actuating  |   | AC               |
| Rated operation current le, 400 V   | А | 3                |
| Connection type auxiliary circuit   |   | Screw connection |
| Mounting method   |   | DIN-rail/screw   |
| Interface   |   | No               |
| Number of auxiliary contacts as normally closed contact   |   | 1                |
| Number of auxiliary contacts as normally open contact   |   | 3                |
| Number of auxiliary contacts as normally closed contact, delayed switching  |   | 0                |
| Number of auxiliary contacts as normally open contact, leading  |   | 0                |
| With LED indication   |   | No               |
| Number of auxiliary contacts as change-over contact   |   | 0                |
| Manual operation possible   |   | No               |
|   |   |                  |

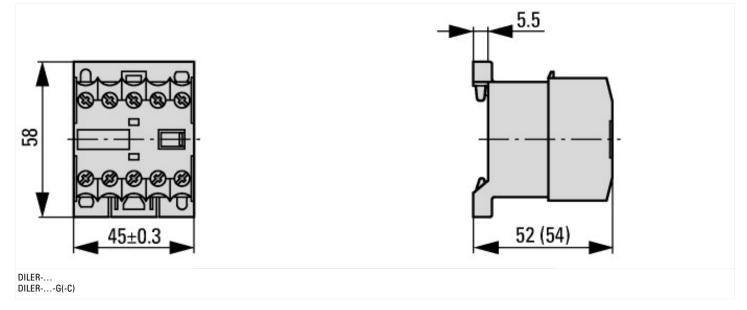
## Approvals

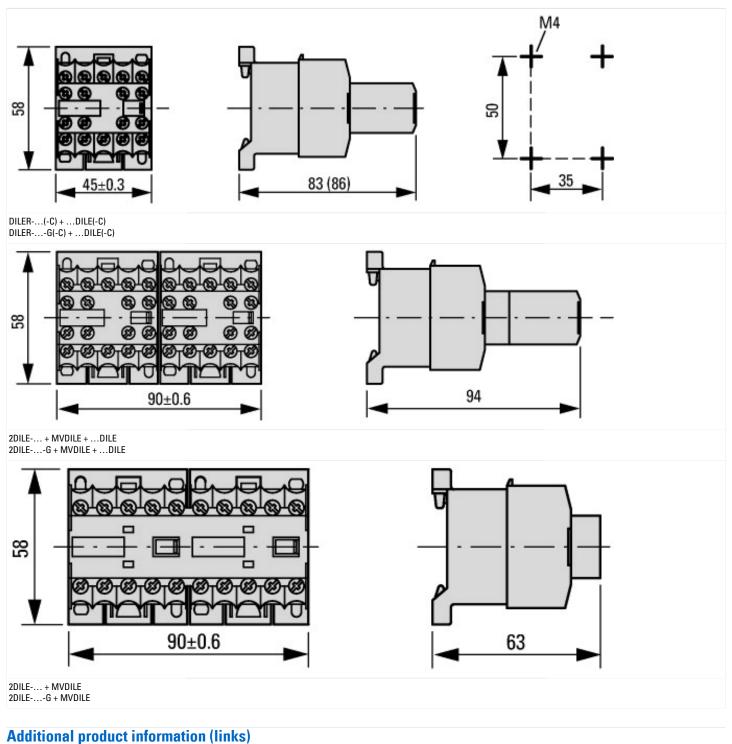
| Product Standards                    | IEC/EN 60947-4-1; UL 508; CSA-C22.2 No. 14-05; CE marking |
|--------------------------------------|---|
| UL File No.                          | E29184  |
| UL Category Control No.              | NKCR  |
| CSA File No.                         | 012528  |
| CSA Class No.                        | 3211-03   |
| North America Certification          | UL listed, CSA certified                                  |
| Specially designed for North America | No  |





### Dimensions





### IL03407009Z (AWA2100-0882) Mini contactor relay

IL03407009Z (AWA2100-0882) Mini contactor ftp://ftp.moeller.net/DOCUMENTATION/AWA\_INSTRUCTIONS/IL03407009Z2020\_05.pdf relay