



Thyristor  
modules  
DCTL

Product designation

Product type designation

### General characteristics

|                             |        |           |
|-----------------------------|--------|-----------|
| Rated voltage               | V      | 400...480 |
| Operating voltage range     |        | 340...528 |
| Rated frequency             | Hz     | 50/60     |
| Operating frequency range   | Hz     | 45...65   |
| Rated current (Ie)          | A      | 144       |
| Step power at               |        |           |
|                             | 400VAC | kvar 100  |
|                             | 440VAC | kvar 110  |
|                             | 480VAC | kvar 120  |
| Peak inverse voltage (PIV)  | VAC    | 2200      |
| Number of controlled phases | Nr.    | 2         |

Control circuit

12-24VDC input  
or free-voltage  
input or via  
RS485 serial port  
(with optional  
card EXC1042 in  
combination with  
controller  
DCRG8F +  
EXP1012)

### Auxiliary supply

Rated auxiliary supply voltage Us  
AC

|                           |     |     |       |
|---------------------------|-----|-----|-------|
|                           | min | VAC | 100   |
|                           | Max | VAC | 240   |
| Auxiliary rated frequency |     | Hz  | 50/60 |
| Power consumption Max     |     | VA  | 14.1  |
| Power dissipation Max     |     | W   | 5.8   |

### Control input

|                 |             |
|-----------------|-------------|
| Terminals       | CONTROL +/- |
| Rated voltage   | 12-24VDC    |
| Operating range | 8...30VDC   |

### Digital inputs

|                                       |          |
|---------------------------------------|----------|
| Terminals                             | C-IN1    |
| Applied voltage at contact (internal) | 5VDC     |
| Input current                         | mA ≤10   |
| Low input signal                      | VDC ≤0.8 |
| High input signal                     | VDC ≥3.2 |
| Input signal delay                    | ms ≥50   |

### NTC probe input

|           |         |
|-----------|---------|
| Terminals | NTC-NTC |
|-----------|---------|

|                                         |        |                 |                                                                                                                         |
|-----------------------------------------|--------|-----------------|-------------------------------------------------------------------------------------------------------------------------|
| Sensor type                             |        |                 | NTC (ordering code NTC01)                                                                                               |
| Measuring range                         | °C     |                 | -25...+85                                                                                                               |
| Maximum connection length               | mt     |                 | 3                                                                                                                       |
| Fan power supply                        |        |                 |                                                                                                                         |
| Terminals                               |        |                 | FAN +/-                                                                                                                 |
| Supply voltage (internal)               |        |                 | 5VDC (provided by DCTL)                                                                                                 |
| Fan type                                |        |                 | 2 built-in fans type EXP8004                                                                                            |
| Relay outputs                           |        |                 |                                                                                                                         |
| Number of relay output                  | Nr.    |                 | 1                                                                                                                       |
| Contact arrangement                     |        |                 | 1 C/O-SPDT                                                                                                              |
| Rated current                           |        |                 | NO contact: AC1 5A 250VAC / 5A 30VDC NC contact: AC1 3A 250VAC / 3A 30VDC                                               |
| UL/CSA and IEC/EN 60947-5-1 designation |        |                 | D300                                                                                                                    |
| Maximum switching voltage               | VAC    |                 | 250                                                                                                                     |
| Electrical life (with rated load)       | cycles |                 | NO contact: 10x10 <sup>3</sup> NC contact: 20x10 <sup>3</sup>                                                           |
| Mechanical life                         | cycles |                 | 10 <sup>7</sup>                                                                                                         |
| Insulations                             |        |                 |                                                                                                                         |
| Rated insulation voltage Ui IEC/EN      | V      |                 | 480                                                                                                                     |
| Rated impulse withstand voltage Uimp    | kV     |                 | 4                                                                                                                       |
| Connections - power terminals           |        |                 |                                                                                                                         |
| Type of terminal                        |        |                 | Bars - 25x5mm, hole diam. 11mm                                                                                          |
| Conductor cross section                 | Max    | mm <sup>2</sup> | 50<br>1 x AWG 3/0 (for cULus compliance you must install n°2 lugs kit code EXA01 + n°2 terminal shrouds kit code EXA02) |
|                                         | Max    | AWG             |                                                                                                                         |
| Tightening torque (Max)                 |        | Nm              | 35Nm (42Nm for EXA01 lugs)                                                                                              |
|                                         |        | lbin/lbft       | 309 in-lbs (375 in-lbs for EXA01 lugs)                                                                                  |
| Connections - relay output              |        |                 |                                                                                                                         |
| Type of terminal                        |        |                 | Screw                                                                                                                   |
| Conductor cross section                 | min    | mm <sup>2</sup> | 0.2                                                                                                                     |
|                                         | Max    | mm <sup>2</sup> | 4                                                                                                                       |
|                                         | min    | AWG             | 26                                                                                                                      |
|                                         | Max    | AWG             | 10                                                                                                                      |
| Tightening torque (Max)                 |        |                 |                                                                                                                         |

Nm 0.8  
lbin 7

### Connections - fan and digital input

|                         |       |                 |      |
|-------------------------|-------|-----------------|------|
| Type of terminal        | Screw |                 |      |
| Conductor cross section |       |                 |      |
|                         | min   | mm <sup>2</sup> | 0.2  |
|                         | Max   | mm <sup>2</sup> | 2.5  |
|                         | min   | AWG             | 24   |
|                         | Max   | AWG             | 12   |
| Tightening torque (Max) |       |                 |      |
|                         | Nm    |                 | 0.44 |
|                         | lbin  |                 | 4    |

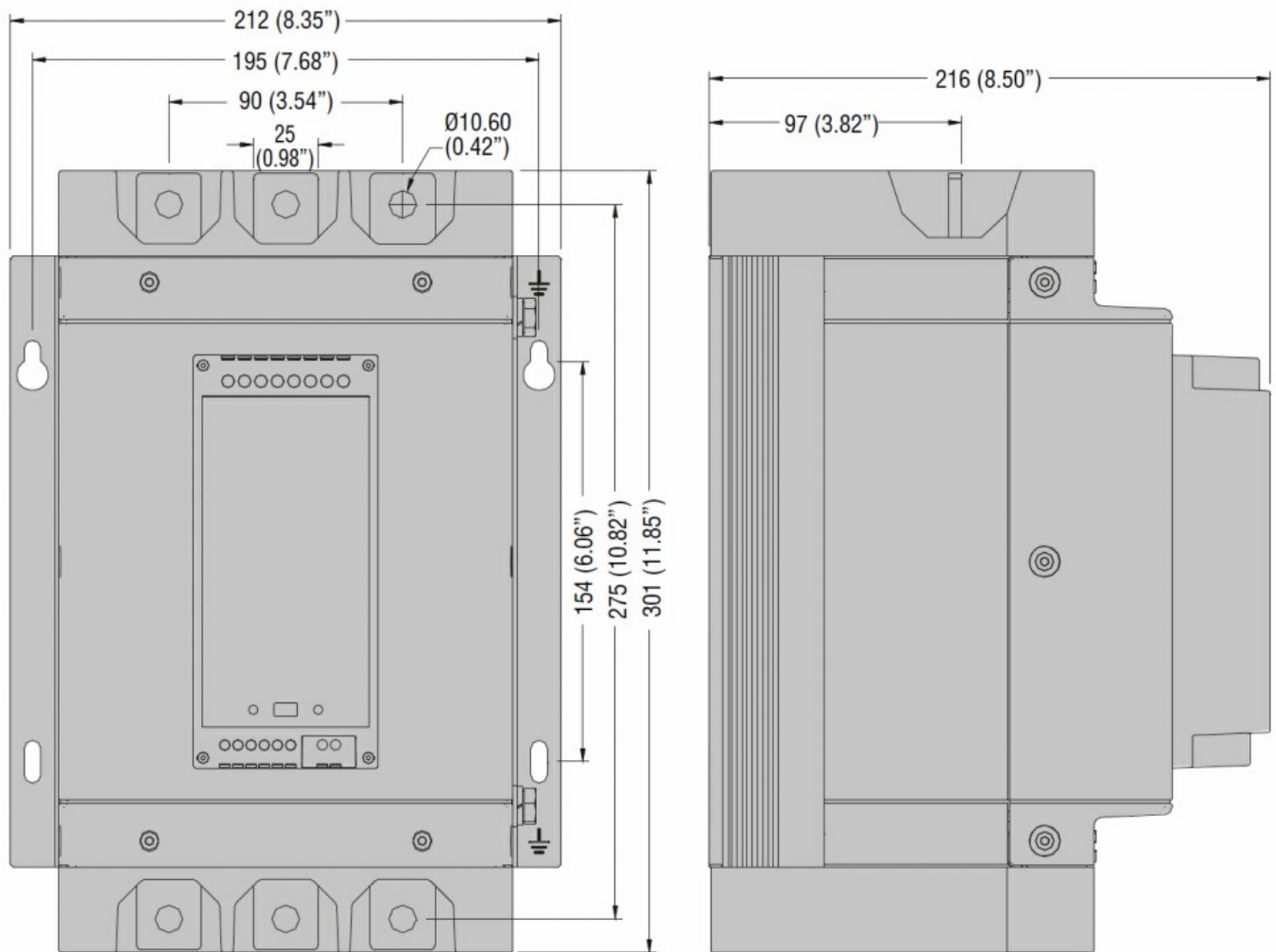
### Ambient conditions

|                          |                       |    |                                                   |
|--------------------------|-----------------------|----|---------------------------------------------------|
| Temperature              | Operating temperature |    |                                                   |
|                          | min                   | °C | -20                                               |
|                          | max                   | °C | +45°C without derating (up to 55°C with derating) |
|                          | Storage temperature   |    |                                                   |
|                          | min                   | °C | -30                                               |
|                          | max                   | °C | +80                                               |
| Relative humidity        |                       | %  | <80%                                              |
| Maximum Pollution degree |                       |    | 2                                                 |
| Overvoltage category     |                       |    | III                                               |
| Max altitude             |                       | m  | 2000m without derating                            |
| Climatic sequence        |                       |    | Z/ABDM (IEC/EN 60068-2-61)                        |
| Shock resistance         |                       |    | 15g (IEC/EN 60068-2-27)                           |
| Vibration resistance     |                       |    | 0.7g (IEC/EN 60068-2-6)                           |

### Housing

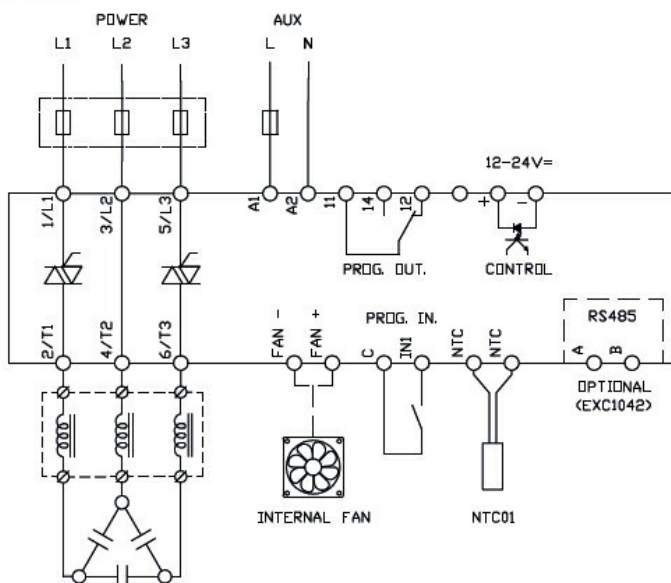
|                        |                        |    |                                                                                   |
|------------------------|------------------------|----|-----------------------------------------------------------------------------------|
| Execution              | Internal panel version |    |                                                                                   |
| Material               | Polycarbonate          |    |                                                                                   |
| Degree of protection   | IP00                   |    |                                                                                   |
| Dimensions (W x H x D) |                        | mm | 212 x 301 x 216 (with EXA01 lugs and EXA02 terminals protection: 212 x 468 x 216) |
| Weight                 |                        | g  | 6680                                                                              |

### Dimensions



## Wiring diagrams

### DCTL



## Certifications and compliance

### Compliance

IEC/EN 60947-4-3

IEC/EN 61000-6-2

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IEC/EN 61000-6-4

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Certificates

cULus

ETIM classification

ETIM 8.0

EC002055 -  
Solid state relay