



Thyristor  
modules  
DCTL

Product designation

Product type designation

### General characteristics

|                             |        |           |
|-----------------------------|--------|-----------|
| Rated voltage               | V      | 400       |
| Operating voltage range     |        | 340...440 |
| Rated frequency             | Hz     | 50/60     |
| Operating frequency range   | Hz     | 45...65   |
| Rated current (Ie)          | A      | 22        |
| Step power at               | 400VAC | kvar 15   |
| Peak inverse voltage (PIV)  | VAC    | 1800      |
| 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  $U_s$   
AC

|                           |     |     |       |
|---------------------------|-----|-----|-------|
|                           | min | VAC | 100   |
|                           | Max | VAC | 240   |
| Auxiliary rated frequency |     | Hz  | 50/60 |
| Power consumption Max     |     | VA  | 11.8  |
| Power dissipation Max     |     | W   | 4.6   |

### 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 $\leq 10$   |
| Low input signal                      | VDC $\leq 0.8$ |
| High input signal                     | VDC $\geq 3.2$ |
| Input signal delay                    | ms $\geq 50$   |

### NTC probe input

|             |                              |
|-------------|------------------------------|
| Terminals   | NTC-NTC                      |
| Sensor type | NTC (ordering<br>code NTC01) |

|                                            |           |                                                                           |
|--------------------------------------------|-----------|---------------------------------------------------------------------------|
| Measuring range                            | °C        | -25...+85                                                                 |
| Maximum connection length                  | mt        | 3                                                                         |
| <b>Fan power supply</b>                    |           |                                                                           |
| Terminals                                  |           | FAN +/-                                                                   |
| Supply voltage (internal)                  |           | 5VDC (provided by DCTL)                                                   |
| Fan type                                   |           | 1 built-in fan type EXP8004                                               |
| <b>Relay outputs</b>                       |           |                                                                           |
| 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>                                                           |
| <b>Insulations</b>                         |           |                                                                           |
| Rated insulation voltage Ui IEC/EN         | V         | 480                                                                       |
| Rated impulse withstand voltage Uimp       | kV        | 4                                                                         |
| <b>Connections - power terminals</b>       |           |                                                                           |
| Type of terminal                           |           | Fixed - double lock clamp                                                 |
| Conductor cross section                    |           |                                                                           |
|                                            | min       | mm <sup>2</sup> 2 x 2.5                                                   |
|                                            | Max       | mm <sup>2</sup> 2 x 35                                                    |
|                                            | min       | AWG 2 x 18                                                                |
|                                            | Max       | AWG 2 x 2                                                                 |
| Tightening torque (Max)                    |           |                                                                           |
|                                            | Nm        | 4-5                                                                       |
|                                            | lbin/lbft | 2.95-3.69 lbft                                                            |
| <b>Connections - relay output</b>          |           |                                                                           |
| 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                                                                         |
| <b>Connections - fan and digital input</b> |           |                                                                           |
| 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

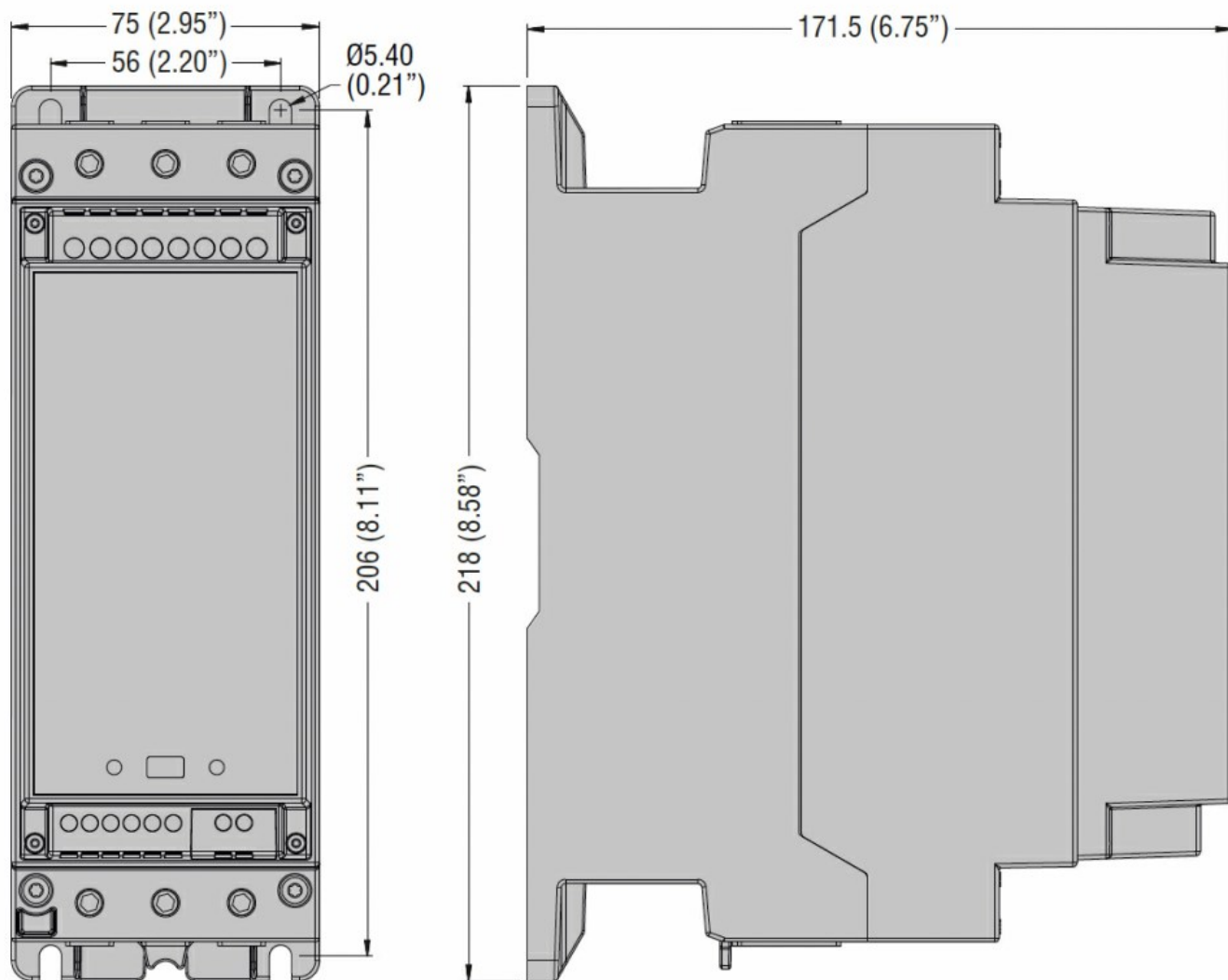
|     |    |     |
|-----|----|-----|
| min | °C | -30 |
| max | °C | +80 |

|                          |   |                            |
|--------------------------|---|----------------------------|
| 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

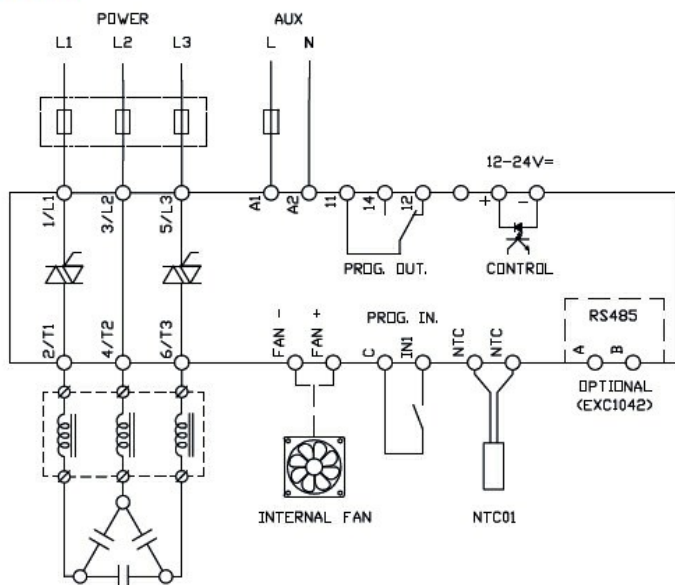
|                        |    |                                                                         |
|------------------------|----|-------------------------------------------------------------------------|
| Execution              |    | Internal panel version                                                  |
| Material               |    | Polycarbonate                                                           |
| Mounting               |    | Screw fixing or DIN-rail (IEC/EN 60715) with optional accessory EXP8003 |
| Degree of protection   |    | IP00                                                                    |
| Dimensions (W x H x D) | mm | 75 x 218 x 171.5                                                        |
| Weight                 | g  | 1740                                                                    |

## Dimensions



## Wiring diagrams

### DCTL



## Certifications and compliance

### Compliance

IEC/EN 60947-4-3

IEC/EN 61000-6-2

IEC/EN 61000-6-4

Certificates

cULus

ETIM classification

ETIM 8.0

EC002055 -  
Solid state relay