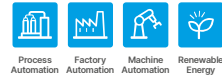


## cliQ<sup>M</sup> (24 V)



- High power density in corrosion resistant aluminium casing
- Power Boost of 150% up to 7 s
- Advanced Power Boost (APB)
- DNV GL and ABS approvals for maritime applications
- Extreme low temperature cold start at -40°C
- Built-in DC OK contact and LED indicator for DC OK/Overload
- Conformal coating on PCBAs to protect against common dust and chemical pollutants

### Applications



| Output                                        |                     | DRM-24V80W1PN                                                                 | DRM-24V120W1PN                                                                | DRM-24V240W1PN                                                                | DRM-24V480W1PN     | DRM-24V960W1PN         |
|-----------------------------------------------|---------------------|-------------------------------------------------------------------------------|-------------------------------------------------------------------------------|-------------------------------------------------------------------------------|--------------------|------------------------|
| Output Voltage                                |                     | 24 V                                                                          | 24 V                                                                          | 24 V                                                                          | 24 V               | 24 V                   |
| Output Voltage Range                          |                     | 24-28 V                                                                       | 24-28 V                                                                       | 24-28 V                                                                       | 24-28 V            | 24-28 V                |
| Output Current                                |                     | 3.4-3.0 A                                                                     | 5.0-4.5 A                                                                     | 10.0-9.0 A                                                                    | 20.0-17.0 A        | 40.0-34.3 A            |
| Output Power                                  |                     | 81.6 W                                                                        | 120 W                                                                         | 240 W                                                                         | 480 W              | 960 W                  |
| PARD (20MHz)                                  |                     | < 50 mVpp                                                                     |                                                                               |                                                                               | < 100 mVpp         |                        |
| Hold-up Time                                  | 120 V <sub>AC</sub> | > 35 ms                                                                       | > 34 ms                                                                       | > 28 ms                                                                       | > 30 ms            | > 23 ms                |
|                                               | 230 V <sub>AC</sub> | > 70 ms                                                                       | > 65 ms                                                                       |                                                                               |                    |                        |
| Input                                         |                     |                                                                               |                                                                               |                                                                               |                    |                        |
| Phase Input                                   |                     | Single Phase                                                                  |                                                                               |                                                                               |                    |                        |
| Input Voltage Range                           |                     | 85-276 V <sub>AC</sub> (DC input range 88-375 V <sub>DC</sub> ) <sup>1)</sup> | 85-264 V <sub>AC</sub> (DC input range 88-375 V <sub>DC</sub> ) <sup>1)</sup> | 85-276 V <sub>AC</sub> (DC input range 88-375 V <sub>DC</sub> ) <sup>1)</sup> |                    | 85-264 V <sub>AC</sub> |
| Input Frequency                               |                     | 47-63 Hz                                                                      |                                                                               |                                                                               |                    |                        |
| Input Current                                 | 120 V <sub>AC</sub> | < 0.90 A                                                                      | < 1.12 A                                                                      | < 2.26 A                                                                      | < 4.60 A           | < 10.10 A              |
|                                               | 230 V <sub>AC</sub> | < 0.60 A                                                                      | < 0.62 A                                                                      | < 1.25 A                                                                      | < 2.50 A           | < 6.00 A               |
| Efficiency <sup>2)</sup> at 100% Load         | 120 V <sub>AC</sub> | > 90.1%                                                                       | > 91.6%                                                                       | > 92.6%                                                                       | > 92.2%            | > 93.6%                |
|                                               | 230 V <sub>AC</sub> | > 90.0%                                                                       | > 92.7%                                                                       | > 93.5%                                                                       | > 93.4%            | > 94.6%                |
| Max Inrush Current (Cold Start)               | 120 V <sub>AC</sub> | < 7 A                                                                         |                                                                               |                                                                               |                    | < 13 A                 |
|                                               | 230 V <sub>AC</sub> | < 13 A                                                                        | < 15 A                                                                        | < 10 A                                                                        | < 13 A             | < 20 A                 |
| Power Factor                                  | 120 V <sub>AC</sub> | > 0.95                                                                        | > 0.99                                                                        | > 0.98                                                                        | > 0.92             | > 0.97                 |
|                                               | 230 V <sub>AC</sub> | > 0.80                                                                        | > 0.91                                                                        | > 0.92                                                                        | > 0.87             | > 0.95                 |
| Leakage Current (264 V <sub>AC</sub> , 50 Hz) | TT/TN               | < 0.36 mA                                                                     | < 0.45 mA                                                                     | < 0.74 mA                                                                     | < 0.80 mA          | < 1.18 mA              |
|                                               | IT                  | < 0.95 mA                                                                     | < 1.08 mA                                                                     | < 1.29 mA                                                                     | < 2.00 mA          | < 2.82 mA              |
| Mechanical                                    |                     |                                                                               |                                                                               |                                                                               |                    |                        |
| Case Cover / Chassis                          |                     | Aluminium                                                                     |                                                                               |                                                                               |                    |                        |
| Dimensions (H × W × D)                        | mm                  | 124 × 32 × 102                                                                | 124 × 40 × 117                                                                | 124 × 60 × 117                                                                | 124 × 82 × 127     | 124 × 125 × 133.6      |
|                                               | inch                | 4.88 × 1.26 × 4.02                                                            | 4.88 × 1.57 × 4.61                                                            | 4.88 × 2.36 × 4.61                                                            | 4.88 × 3.23 × 5.00 | 4.88 × 4.92 × 5.26     |
| Unit Weight                                   | kg                  | 0.50                                                                          | 0.63                                                                          | 0.94                                                                          | 1.40               | 2.87                   |
|                                               | lb                  | 1.10                                                                          | 1.39                                                                          | 2.07                                                                          | 3.09               | 6.33                   |
| Cooling System                                |                     | Convection                                                                    |                                                                               |                                                                               |                    |                        |
| MTBF <sup>3)</sup>                            |                     | > 2,000,000 hrs                                                               | > 1,800,000 hrs                                                               | > 1,400,000 hrs                                                               | > 778,800 hrs      | > 513,800 hrs          |
| Environment                                   |                     |                                                                               |                                                                               |                                                                               |                    |                        |
| Operating Temperature <sup>4)</sup>           |                     |                                                                               |                                                                               | -25°C to +70°C                                                                |                    |                        |
| Storage Temperature                           |                     |                                                                               |                                                                               | -40°C to +85°C                                                                |                    |                        |
| Operating Humidity                            |                     |                                                                               |                                                                               | 5 to 95% RH (Non-Condensing)                                                  |                    |                        |
| Operating Altitude                            |                     |                                                                               |                                                                               | 0 to 5,000 m (0 to 16,400 ft); IEC/EN 61558: 0 to 2,500 m (0 to 8,200 ft)     |                    |                        |

#### Dimensions Reference



#### Notes

- 1) All models are certified for DC input. DC input is not applicable for DRM-24V960W1PN.
- 2) At 25°C ambient temperature by vertical mounting orientation.
- 3) MTBF as per Telcordia SR-332 (Confidence level: 90%, I/P: 100 V<sub>AC</sub>, O/P: 100% load) for vertical mounting orientation.
- 4) Refer power de-rating in the product datasheet.
- 5) All parameters are specified at 25°C ambient temperature unless otherwise indicated.

## cliQ<sup>M</sup> (24 V)



- Built-in constant current circuit for charging applications
- Full power from -25°C to +60°C @ 5,000m (16,400 ft)
- Power Boost of 150% up to 7 s
- Advanced Power Boost (APB)
- DNV GL and ABS approvals for maritime applications
- Built-in DC OK Contact and LED indicator for DC OK/Overload
- Conformal coating on PCBAs to protect against common dust and chemical pollutants

### Applications



| Output                                                  |                        | DRM-24V480W3PN                                                                                                     | DRM-24V960W3PN     |
|---------------------------------------------------------|------------------------|--------------------------------------------------------------------------------------------------------------------|--------------------|
| Output Voltage                                          |                        | 24 V                                                                                                               | 24 V               |
| Output Voltage Range                                    |                        | 24-28 V                                                                                                            | 24-28 V            |
| Output Current                                          |                        | 20.0-17.1A                                                                                                         | 40.0-34.3 A        |
| Output Power                                            |                        | 480 W                                                                                                              | 960 W              |
| PARD (20 MHz)                                           |                        | < 100 mVpp                                                                                                         | < 100 mVpp         |
| Hold-up Time                                            | 3 × 400V <sub>AC</sub> | > 18 ms                                                                                                            | > 20 ms            |
|                                                         | 3 × 500V <sub>AC</sub> |                                                                                                                    |                    |
| Input                                                   |                        |                                                                                                                    |                    |
| Phase Input                                             |                        | Two or Three Phase                                                                                                 |                    |
| Input Voltage Range                                     |                        | 3 × 320-575 V <sub>AC</sub> or 2 × 380-575 V <sub>AC</sub> (DC input range 450-800 V <sub>DC</sub> ) <sup>1)</sup> |                    |
| Input Frequency                                         |                        | 47-63Hz                                                                                                            |                    |
| Input Current                                           | 3 × 400V <sub>AC</sub> | < 0.79 A                                                                                                           | < 1.65 A           |
|                                                         | 3 × 500V <sub>AC</sub> | < 0.68 A                                                                                                           | < 1.35 A           |
| Efficiency <sup>2)</sup><br>at 100% Load                | 3 × 400V <sub>AC</sub> | > 95.0%                                                                                                            | > 95.3%            |
|                                                         | 3 × 500V <sub>AC</sub> | > 94.8%                                                                                                            | > 95.2%            |
| Max Inrush<br>Current<br>(Cold Start)                   | 3 × 400V <sub>AC</sub> | < 10 A                                                                                                             | < 14.2 A           |
|                                                         | 3 × 500V <sub>AC</sub> | < 10 A                                                                                                             | < 17.7 A           |
| Power Factor                                            | 3 × 400V <sub>AC</sub> | > 0.93                                                                                                             | > 0.90             |
|                                                         | 3 × 500V <sub>AC</sub> | > 0.88                                                                                                             | > 0.90             |
| Leakage Current<br>(3 × 528 V <sub>AC</sub> ,<br>60 Hz) | TT/TN                  | < 1.30 mA                                                                                                          | < 0.95 mA          |
|                                                         | IT                     | < 1.30 mA                                                                                                          | < 1.20 mA          |
| Mechanical                                              |                        |                                                                                                                    |                    |
| Case Cover / Chassis                                    |                        | Aluminium                                                                                                          |                    |
| Dimensions<br>(H × W × D)                               | mm                     | 124 × 65 × 127.1                                                                                                   | 124 × 110 × 128.6  |
|                                                         | inch                   | 4.88 × 2.56 × 5.00                                                                                                 | 4.88 × 4.33 × 5.06 |
| Unit Weight                                             | kg                     | 1.18                                                                                                               | 2.30               |
|                                                         | lb                     | 2.60                                                                                                               | 5.07               |
| Cooling System                                          |                        | Convection                                                                                                         |                    |
| MTBF <sup>3)</sup>                                      |                        | > 750,000 hrs                                                                                                      | > 568,300 hrs      |
| Environment                                             |                        |                                                                                                                    |                    |
| Operating Temperature <sup>4)</sup>                     |                        | -25°C to +70°C                                                                                                     |                    |
| Storage Temperature                                     |                        | -40°C to +85°C                                                                                                     |                    |
| Operating Humidity                                      |                        | 5 to 95% RH (Non-Condensing)                                                                                       |                    |
| Operating Altitude <sup>5)</sup>                        |                        | 0 to 5,000 m (0 to 16,400 ft)                                                                                      |                    |

#### Dimensions Reference



#### Notes

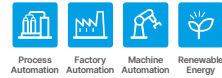
- 1) All models fulfill the test conditions for this range. DC input safety approval can be obtained upon request.
- 2) At 25°C ambient temperature by vertical mounting orientation.
- 3) MTBF as per Telcordia SR-332 (Confidence level: 90%, I/P: 3 × 400 V<sub>AC</sub>, O/P: 100% load) for vertical mounting orientation.
- 4) Refer power de-rating in the product datasheet.
- 5) According to IEC/EN 62368-1, IEC/EN 61010.
- 6) All parameters are specified at 25°C ambient temperature unless otherwise indicated.

## cliQ<sup>M</sup> (24 V)



- SIL3 approval for SIS Functional Safety
- Droop method current sharing
- Active Redundant circuit O-Ring MOSFET
- Power Boost of 150% up to 5s
- Advanced Power Boost (APB)
- Built-in DC OK contact and LED indicator for DC OK/ Overload
- Conformal coating on PCBAs to protect against common dust and chemical pollutants

### Applications



| COMING SOON                                   |                                                                               |
|-----------------------------------------------|-------------------------------------------------------------------------------|
| Output                                        | DRM-24V480W1SN                                                                |
| Output Voltage                                | 24 V                                                                          |
| Output Voltage Range                          | 24-28 V                                                                       |
| Output Current                                | 20.0-17.0 A                                                                   |
| Output Power                                  | 480 W                                                                         |
| PARD (20 MHz)                                 | < 120 mVpp                                                                    |
| Hold-up Time                                  | 120 V <sub>AC</sub> > 32 ms<br>230 V <sub>AC</sub>                            |
| Input                                         |                                                                               |
| Phase Input                                   | Single Phase                                                                  |
| Input Voltage Range                           | 85-276 V <sub>AC</sub> (DC input range 88-375 V <sub>DC</sub> ) <sup>1)</sup> |
| Input Frequency                               | 47-63 Hz                                                                      |
| Input Current                                 | 120 V <sub>AC</sub> < 4.56 A<br>230 V <sub>AC</sub> < 2.48 A                  |
| Efficiency <sup>2)</sup> at 100% Load         | 120 V <sub>AC</sub> > 92.4%<br>230 V <sub>AC</sub> > 93.4%                    |
| Max Inrush Current (Cold Start)               | 120 V <sub>AC</sub> < 13 A<br>230 V <sub>AC</sub>                             |
| Power Factor                                  | 120 V <sub>AC</sub> > 0.95<br>230 V <sub>AC</sub> > 0.90                      |
| Leakage Current (264 V <sub>AC</sub> , 50 Hz) | TT/TN < 1.10 mA<br>IT < 1.20 mA                                               |
| Mechanical                                    |                                                                               |
| Case Cover / Chassis                          | Aluminium                                                                     |
| Dimensions (H × W × D)                        | mm 124 × 82 × 127<br>inch 4.88 × 3.23 × 5.00                                  |
| Unit Weight                                   | kg 1.40<br>lb 3.09                                                            |
| Cooling System                                | Convection                                                                    |
| MTBF <sup>3)</sup>                            | > 864,600 hrs                                                                 |
| Environment                                   |                                                                               |
| Operating Temperature <sup>4)</sup>           | -25°C to +70°C                                                                |
| Storage Temperature                           | -40°C to +85°C                                                                |
| Operating Humidity                            | 5 to 95% RH (Non-Condensing)                                                  |
| Operating Altitude <sup>5)</sup>              | 0 to 5,000 m (0 to 16,400 ft)                                                 |

#### Dimensions Reference



#### Notes

- 1) All models are certified for DC input.
- 2) At 25°C ambient temperature by vertical mounting orientation.
- 3) MTBF as per Telcordia SR-332 (Confidence level: 90%, I/P: 100 V<sub>AC</sub>, O/P: 100% load) for vertical mounting orientation.
- 4) Refer power de-rating in the product datasheet.
- 5) According to IEC/EN 62368-1, IEC/EN 61010.
- 6) All parameters are specified at 25°C ambient temperature unless otherwise indicated.

## cliQ<sup>VA</sup> (24 V)



- LCD display monitoring the output current / voltage / peak current and temperature
- Life time expectancy alarm signal and monitoring
- Built-in active PFC with up to 94% efficiency
- Power Boost of 150% up to 7s
- Advanced Power Boost (APB)
- DC OK Contact and LED indicator for DC OK/ Overload
- Conformal coating on PCBAs to protect against common dust and chemical pollutants

### Applications



| Output                                           |                                            | DRV-24V120W1PN                                                                   | DRV-24V240W1PN                                                                | DRV-24V480W1PN                       |
|--------------------------------------------------|--------------------------------------------|----------------------------------------------------------------------------------|-------------------------------------------------------------------------------|--------------------------------------|
| Output Voltage                                   |                                            | 24 V                                                                             | 24 V                                                                          | 24 V                                 |
| Output Voltage Range                             |                                            | 24-28 V                                                                          | 24-28 V                                                                       | 24-28 V                              |
| Output Current                                   |                                            | 5.0-4.28 A                                                                       | 10.0-8.57 A                                                                   | 20.0-17.0 A                          |
| Output Power                                     |                                            | 120 W                                                                            | 240 W                                                                         | 480 W                                |
| PARD (20 MHz)                                    |                                            | < 50 mVpp                                                                        | < 50 mVpp                                                                     | < 100 mVpp                           |
| Hold-up Time                                     | 120 V <sub>AC</sub><br>230 V <sub>AC</sub> | > 34 ms<br>> 65 ms                                                               | > 28 ms                                                                       | > 30 ms                              |
| Input                                            |                                            |                                                                                  |                                                                               |                                      |
| Phase Input                                      |                                            | Single Phase                                                                     |                                                                               |                                      |
| Input Voltage Range                              |                                            | 85-264 V <sub>AC</sub><br>(DC input range 88-375 V <sub>DC</sub> ) <sup>1)</sup> | 85-276 V <sub>AC</sub> (DC input range 88-375 V <sub>DC</sub> ) <sup>1)</sup> |                                      |
| Input Frequency                                  |                                            | 47-63 Hz                                                                         |                                                                               |                                      |
| Input Current                                    | 120 V <sub>AC</sub><br>230 V <sub>AC</sub> | < 1.13 A<br>< 0.63 A                                                             | < 2.22 A<br>< 1.21 A                                                          | < 4.60 A<br>< 2.50 A                 |
| Efficiency <sup>2)</sup><br>at 100% Load         | 120 V <sub>AC</sub><br>230 V <sub>AC</sub> | > 90.3%<br>> 91.2%                                                               | > 92.6%<br>> 93.5%                                                            | > 92.2%<br>> 93.4%                   |
| Max Inrush Current<br>(Cold Start)               | 120 V <sub>AC</sub><br>230 V <sub>AC</sub> | < 15 A                                                                           | < 10 A                                                                        | < 13 A                               |
| Power Factor                                     | 120 V <sub>AC</sub><br>230 V <sub>AC</sub> | > 0.99<br>> 0.91                                                                 | > 0.98<br>> 0.92                                                              | > 0.92<br>> 0.87                     |
| Leakage Current<br>(264 V <sub>AC</sub> , 50 Hz) | TT/TN<br>IT                                | < 0.45 mA<br>< 1.08 mA                                                           | < 0.74 mA<br>< 2.10 mA                                                        | < 0.80 mA<br>< 2.00 mA               |
| Mechanical                                       |                                            |                                                                                  |                                                                               |                                      |
| Case Cover / Chassis                             |                                            | Aluminium & Plastic / Aluminium                                                  |                                                                               |                                      |
| Dimensions<br>(H × W × D)                        | mm<br>inch                                 | 124 × 60 × 139<br>4.88 × 2.36 × 5.47                                             | 124 × 60 × 139<br>4.88 × 2.36 × 5.47                                          | 124 × 82 × 149<br>4.88 × 3.23 × 5.87 |
| Unit Weight                                      | kg<br>lb                                   | 0.75<br>1.65                                                                     | 1.02<br>2.25                                                                  | 1.45<br>3.20                         |
| Cooling System                                   |                                            | Convection                                                                       |                                                                               |                                      |
| MTBF <sup>3)</sup>                               |                                            | > 1,444,000 hrs                                                                  | > 1,268,000 hrs                                                               | > 751,100 hrs                        |
| Environment                                      |                                            |                                                                                  |                                                                               |                                      |
| Operating Temperature <sup>4)</sup>              |                                            | -25°C to +70°C                                                                   |                                                                               |                                      |
| Storage Temperature                              |                                            | -40°C to +85°C                                                                   |                                                                               |                                      |
| Operating Humidity                               |                                            | 5 to 95% RH (Non-Condensing)                                                     |                                                                               |                                      |
| Operating Altitude                               |                                            | 0 to 5,000 m (0 to 16,400 ft)                                                    |                                                                               |                                      |

#### Dimensions Reference



#### Notes

- 1) All models are certified for DC input.
- 2) At 25°C ambient temperature by vertical mounting orientation.
- 3) MTBF as per Telcordia SR-332 (Confidence level: 90%, I/P: 100 V<sub>AC</sub>, O/P: 100% load) for vertical mounting orientation.
- 4) Refer power de-rating in the product datasheet.
- 5) All parameters are specified at 25°C ambient temperature unless otherwise indicated.