



Automatic power factor controller, 8 steps, icon display
DCRL8

Product designation

Product type designation

Auxiliary supply

Rated auxiliary supply voltage U_s
AC

| | | |
|-----|-----|-----|
| min | VAC | 100 |
| Max | VAC | 440 |

DC

| | | |
|-----|-----|-----|
| min | VDC | 110 |
| Max | VDC | 250 |

| | | |
|----------------------------------|----|-----------------------------|
| Auxiliary operating range | | 90...484VAC / 93.5...300VDC |
| Auxiliary rated frequency | Hz | 50/60 $\pm 10\%$ |
| Power consumption Max | VA | 8.5 |
| Power dissipation Max | W | 3 |
| Immunity time for microbreakings | ms | <25 |

Voltage inputs

| | | |
|-----------------------------|------------|------------------------------|
| Rated voltage (U_e) | VAC | 600VAC L-L (rated max) |
| Operating range | | 50...720VAC L-L (415VAC L-N) |
| Frequency range | Hz | 45...65 |
| Type of measure | | True RMS value |
| No-voltage release | ms | ≥ 8 |
| Measurement input impedance | k Ω | >15M Ω |

Type of connection

Single phase, two phase, three phase with or without neutral or balanced three phase system

Current inputs

| | | |
|-------------------------|-------|----------------------------------------------------------------------|
| Number of current input | Nr. | 1 |
| Type of input | | Shunt supplied by external current transformer (low voltage). Max 5A |
| Measurement range | | 0.025...6A~ for 5A scale; 0.025...1.2A~ for 1A scale |
| Measurement method | | True RMS value |
| Constant overload | I_e | 1.2 I_e |

| | | |
|---------------------------------------------------------------------------------------|--------|---------------------------------------|
| Overload peak | A | 50A for 1s |
| Burden per phase | W | <0.6VA |
| Measurement data | | |
| Type of voltage and current measurement | | True RMS value |
| Power factor adjustment | | 0.5ind...0.5cap. |
| Type of temperature sensor | | Internal |
| Temperature measurement range | °C | 0...+212 |
| Relay outputs | | |
| Number of relay output | Nr. | 8 (up to 14 with EXP10 06 - EXP10 07) |
| Contact arrangement | | 7 NO-SPST + 1 C/O-SPDT |
| Rated current | | 5A 250V AC1 |
| UL/CSA and IEC/EN 60947-5-1 designation | | B300 |
| Maximum current at common contact terminal | A | 10 |
| Maximum switching voltage | VAC | 415 |
| Electrical life (with rated load) | cycles | 10 ⁵ |
| Mechanical life | cycles | 10 ⁷ |
| Insulations | | |
| Rated insulation voltage Ui IEC/EN | V | 600 |
| Rated impulse withstand voltage Uimp | kV | 9.5 |
| Operating frequency withstand voltage | kV | 5.2 |
| Functions | | |
| Automatic recognition of current flow direction | | Yes |
| 4-quadrant operation | | Yes |
| Master-Slave function | | No |
| Independent auxiliary supply input | | Yes |
| Three-phase voltage control | | No |
| Current inputs | | 1 |
| Dynamic (FAST) power factor correction | | No |
| Power factor correction by single phase | | No |
| Possibility of connecting inductive steps | | No |
| Possibility of use in medium voltage | | Yes |
| Possibility of phase-neutral insertion on a three-phase system | | Yes |
| Analog outputs | | No |
| Input programmable as function or external temperature sensor | | No |
| USB communication interface | | No |
| RS232 communication interface | | Yes |
| Opto-isolated RS485 communication interface | | Yes |
| Ethernet communication interface | | Yes |
| Opto-isolated Profibus-DP interface | | Yes |
| GPRS/GSM modem | | No |
| Optical USB communication port on front | | No |
| Optical Wi-Fi communication port on front | | Yes |
| Fast setting of current transformer | | Yes |
| Compatible with Xpress configuration and remote control software | | Yes |
| Compatible with Synergy and Synergy Cloud, supervision and energy management software | | Yes |
| Compatible with Sam1 App | | Yes |
| Calendar-clock with backup reserve power | | No |
| Data logging memory | | No |
| Event logging: alarms, setup changes, etc. | | No |
| Customisable internal counters | | No |

Connections

| | | | |
|-------------------------|--------------------|-----------------|-----------------------------------|
| Type of terminal | Plug-in, removable | | |
| Conductor cross section | min | mm ² | 0.2 |
| | Max | mm ² | 2.5 |
| | min | AWG | 24AWG (18AWG according to UL/CSA) |
| | Max | AWG | 12 |
| Tightening torque (Max) | | Nm | 0.56 |
| | | lbin | 5 |

Ambient conditions

| | | | |
|--------------------------|-----------------------|----|----------------------------|
| Temperature | Operating temperature | | |
| | min | °C | -20 |
| | max | °C | +60 |
| | Storage temperature | | |
| | min | °C | -30 |
| | max | °C | +80 |
| Relative humidity | | % | <80% |
| Maximum Pollution degree | | | 2 |
| Overvoltage category | | | 3 |
| Measurement category | | | III |
| 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 | Flush mount | | |
| Material | Polycarbonate | | |
| Mounting | Flush-mount 144x144mm (5.67x5.67") | | |
| Degree of protection | IP65 on front with gasket, if mounted in class IP65 panel or better. IP20 terminals | | |
| Dimensions (W x H x D) | mm | 144 x 144 x 53.2 | |
| Weight | g | 640 | |

Dimensions



Wiring diagrams



Certifications and compliance

Compliance

IEC/EN 61000-6-2

IEC/EN 61000-6-3

IEC/EN 61010-1

IEC/EN 61010-2-030

UL508

Certificates

EAC

RCM

ETIM classification

| ETIM 8.0 | Effective power (app. psi) |
|----------|-------------------------------|
| 1 | 100 |
| 2 | 200 |
| 3 | 300 |
| 4 | 400 |
| 5 | 500 |
| 6 | 600 |
| 7 | 700 |
| 8 | 800 |
| 9 | 900 |
| 10 | 1000 |
| 11 | 1100 |
| 12 | 1200 |
| 13 | 1300 |
| 14 | 1400 |
| 15 | 1500 |
| 16 | 1600 |
| 17 | 1700 |
| 18 | 1800 |
| 19 | 1900 |
| 20 | 2000 |
| 21 | 2100 |
| 22 | 2200 |
| 23 | 2300 |
| 24 | 2400 |
| 25 | 2500 |
| 26 | 2600 |
| 27 | 2700 |
| 28 | 2800 |
| 29 | 2900 |
| 30 | 3000 |
| 31 | 3100 |
| 32 | 3200 |
| 33 | 3300 |
| 34 | 3400 |
| 35 | 3500 |
| 36 | 3600 |
| 37 | 3700 |
| 38 | 3800 |
| 39 | 3900 |
| 40 | 4000 |
| 41 | 4100 |
| 42 | 4200 |
| 43 | 4300 |
| 44 | 4400 |
| 45 | 4500 |
| 46 | 4600 |
| 47 | 4700 |
| 48 | 4800 |
| 49 | 4900 |
| 50 | 5000 |
| 51 | 5100 |
| 52 | 5200 |
| 53 | 5300 |
| 54 | 5400 |
| 55 | 5500 |
| 56 | 5600 |
| 57 | 5700 |
| 58 | 5800 |
| 59 | 5900 |
| 60 | 6000 |
| 61 | 6100 |
| 62 | 6200 |
| 63 | 6300 |
| 64 | 6400 |
| 65 | 6500 |
| 66 | 6600 |
| 67 | 6700 |
| 68 | 6800 |
| 69 | 6900 |
| 70 | 7000 |
| 71 | 7100 |
| 72 | 7200 |
| 73 | 7300 |
| 74 | 7400 |
| 75 | 7500 |
| 76 | 7600 |
| 77 | 7700 |
| 78 | 7800 |
| 79 | 7900 |
| 80 | 8000 |
| 81 | 8100 |
| 82 | 8200 |
| 83 | 8300 |
| 84 | 8400 |
| 85 | 8500 |
| 86 | 8600 |
| 87 | 8700 |
| 88 | 8800 |
| 89 | 8900 |
| 90 | 9000 |
| 91 | 9100 |
| 92 | 9200 |
| 93 | 9300 |
| 94 | 9400 |
| 95 | 9500 |
| 96 | 9600 |
| 97 | 9700 |
| 98 | 9800 |
| 99 | 9900 |
| 100 | 10000 |

Effective power

monitoring relay
