



## AC/DC digital converters, two quadrant DCREG2, four quadrant DCREG4

- Power range 10A - 4500A (2.4 kW - 3200 kW)
- Wide power supply voltage range, 200Vac - 690Vac
- Input frequency 50 - 60Hz
- Full digital
- Full compatibility with the "REMOTE DRIVE" software for remote control

### Technical features & highlights

- Self-calibration of current and speed (Reduce possibility of error and installation time)
- Self-calibration of field (Reduces possibility of error and installation time)
- Internal field converter (for operation at constant torque or power)
- Field economy (reduces the field current when motor is stopped)
- Field boost (increases torque on motor start)
- Predictive control (increases the dynamic response of the motor)
- Integrated multimeter
- Speed multiramps
- "S" ramps
- Double speed loop regulator
- Feedback from tachometric dynamo, from encoder and armature
- Automatic switching of the feedback in armature in the event of breakdown of tachometer/encoder (higher safety operation)
- Control of the current limit in steps or hyperbolic
- 7 levels of speed
- JOG commands
- Auto-reset alarms
- Integrated digital potentiometer
- Timer on digital outputs
- Local control from keyboard
- Insensitivity to phase sequence (easier connection)
- Independent supplies to control and power
- 8 programmable inputs
- 4 programmable analog inputs 0-±10Vdc, 0(4)-20mA
- Double encoder input
- 5 programmable relay outputs
- Auxiliary 24Vdc, ±10Vdc, 5 Vdc
- 1 analog speed output ±10Vdc
- 1 analog current output ±10Vdc
- 2 programmable analog outputs 0-±10Vdc, 0(4)-20mA
- EMC compliant with EN 61800-3 2nd ed.

### Optionals

- "Remote Drive" software
- Keypad
- Remote keyboard operation kit (5 metres)
- RS232/485 interface
- MODBUS RTU 115.2kbps
- Profibus DP 12Mbps - CanBus - Device Net etc.
- IP 20 protection degree kit
- Input chokes
- Kit for heatsink segregation
- Fast fuses
- CU400 Clamping unit for electromagnets



Size 1

Model	Input	DCREG2.10	DCREG2.20	DCREG2.40	DCREG2.70
*Armature rated current		10A	20A	40A	70A
Overload		150%	150%	150%	150%
Armature output Voltage	440 Vac	530 Vdc max	530 Vdc max	530 Vdc max	530 Vdc max
	500 Vac	600 Vdc max	600 Vdc max	600 Vdc max	600 Vdc max
	600 Vac	720 Vdc max	720 Vdc max	720 Vdc max	720 Vdc max
	690 Vac	800 Vdc max	800 Vdc max	800 Vdc max	800 Vdc max
Field rated current		5A	5A	5A	5A
Field output voltage	500 Vac	425 Vdc max	425 Vdc max	425 Vdc max	425 Vdc max
AC Fast fuses		35-40A 00T/80	35-40A 00T/80	35-40A 00T/80	63A 00T/80
DC Fast fuses		35-40A 00T/80	35-40A 00T/80	50A 00T/80	100A 00T/80
*Dimensions (WxDxH) mm		214x265x440	214x265x440	214x265x440	214x265x440
*Weight kg		13	13	13	14

Size 1

Model	Input	DCREG2.100	DCREG2.150	DCREG2.180	DCREG2.250	DCREG2.350
*Armature rated current		100A	150A	180A	250A	350A
Overload		150%	150%	150%	150%	150%
Armature output Voltage	440 Vac	530 Vdc max	530 Vdc max	530 Vdc max	530 Vdc max	530 Vdc max
	500 Vac	600 Vdc max	600 Vdc max	600 Vdc max	600 Vdc max	600 Vdc max
	600 Vac	720 Vdc max	720 Vdc max	720 Vdc max	720 Vdc max	720 Vdc max
	690 Vac	800 Vdc max	800 Vdc max	800 Vdc max	800 Vdc max	800 Vdc max
Field rated current		5A	15A	15A	15A	15A
Field output voltage	500 Vac	425 Vdc max	425 Vdc max	425 Vdc max	425 Vdc max	425 Vdc max
AC Fast fuses		100A 00T/80	160A 00T/80	160A 00T/80	250A 00T/80	315A 00T/80
DC Fast fuses		125A 00T/80	200A 00T/80	250A 00T/80	315A 00T/80	375-400A 00T/80
*Dimensions (WxDxH) mm		214x265x440	214x265x440	214x265x440	214x265x440	214x265x440
*Weight kg		15	15	15	18	18

Size 1

Model	Input	DCREG2.410	DCREG2.500	DCREG2.600	DCREG2.900
*Armature rated current		410A	500A	600A	900A
Overload		150%	150%	150%	150%
Armature output Voltage	440 Vac	530 Vdc max	530 Vdc max	530 Vdc max	530 Vdc max
	500 Vac	600 Vdc max	600 Vdc max	600 Vdc max	600 Vdc max
	600 Vac	720 Vdc max	720 Vdc max	720 Vdc max	720 Vdc max
	690 Vac	800 Vdc max	800 Vdc max	800 Vdc max	800 Vdc max
Field rated current		35A	35A	35A	35A
Field output voltage	500 Vac	425 Vdc max	425 Vdc max	425 Vdc max	425 Vdc max
AC Fast fuses		450A 2T/80	550A 2T/80	630A 2T/80	900A 3T/80
DC Fast fuses		550A 2T/80	700A 2T/80	800A 2T/80	1250A 3T/80
*Dimensions (WxDxH) mm		330x360x596	330x360x596	330x360x596	330x360x596
*Weight kg		38	45	45	45

1) The DCREG series comes with different power supply ranges:  
440Vac-500Vac-600Vac-690Vac  
\* Rated current, dimension and weight can be changed based on power supply requirements  
\*\* DCREG MODULAR.S, the control unit is to be added to the dimensions given in the table 214x265x440 (WxDxH)

Size 2A

Model	Input	DCREG2.1200
*Armature rated current		1200A
Overload		150%
Armature Output Voltage	440 Vac	530 Vdc max
	500 Vac	600 Vdc max
	600 Vac	720 Vdc max
	690 Vac	800 Vdc max
Field rated current		35A
Field output voltage	500 Vac	425 Vdc max
AC Fast Fuses		1100A 3T/80
DC Fast Fuses		1400A 3T/80
Dimensions (WxDxH)		333x453x685
Weight kg		51

Size MODULAR.S

Model	Input	DCREG2.1050S	DCREG2.1600S	DCREG2.1800S	DCREG2.2000S	DCREG2.2300S
*Armature rated current		1050A	1600A	1800A	2000A	2300A
Overload		125%	125%	125%	125%	125%
Armature output Voltage	500 Vac	N.A.	600 Vdc max	600 Vdc max	600 Vdc max	600 Vdc max
	600 Vac	720 Vdc max	720 Vdc max	720 Vdc max	720 Vdc max	720 Vdc max
	690 Vac	800 Vdc max	800 Vdc max	N.A	800 Vdc max	800 Vdc max
Field rated current		35A	35A	35A	35A	35A
Field output voltage	500 Vac	425 Vdc max	425 Vdc max	425 Vdc max	425 Vdc max	425 Vdc max
AC Fast fuses		Included	Included	Included	Included	Included
DC Fast fuses		Included	Included	Included	Included	Included
*Dimensions (WxDxH) mm		500x275x665 (Size L)**	500x275x860 (Size A)**	500x275x860 (Size A)**	500x275x860 (Size A)**	620x360x884 (Size B)**
*Weight kg		57	79	79	79	124

Size MODULAR.S

Model	Input	DCREG2.2500S	DCREG2.2700S	DCREG2.3000S	DCREG2.3500S	DCREG2.4500S
*Armature rated current		2500A	2700A	3000A	3500A	4500A
Overload		125%	125%	125%	125%	125%
Armature output Voltage	500 Vac	600 Vdc max	600 Vdc max	600 Vdc max	600 Vdc max	600 Vdc max
	600 Vac	720 Vdc max	720 Vdc max	720 Vdc max	720 Vdc max	720 Vdc max
	690 Vac	800 Vdc max	800 Vdc max	800 Vdc max	800 Vdc max	800 Vdc max
Field rated current		35A	35A	35A	35A	35A
Field output voltage	500 Vac	425 Vdc max	425 Vdc max	425 Vdc max	425 Vdc max	425 Vdc max
AC Fast fuses		Included	Included	Included	Included	Included
DC Fast fuses		Included	Included	Included	Included	Included
*Dimensions (WxDxH) mm		620x360x884 (Size B)**	712x395x945 (Size C)**	712x395x945 (Size C)**	784x415x1110 (Size D)**	968x482x1250 (Size E)**
*Weight kg		124	164	164	206	319

1) The DCREG series comes with different power supply ranges:  
440Vac-500Vac-600Vac-690Vac  
\* Rated current, dimension and weight can be changed based on power supply requirements  
\*\* DCREG MODULAR.S, the control unit is to be added to the dimensions given in the table 214x265x440 (WxDxH)



Size 1

Model	Input	DCREG4.10	DCREG4.20	DCREG4.40	DCREG4.70
*Armature rated current		10A	20A	40A	70A
Overload		150%	150%	150%	150%
Armature output Voltage	440 Vac	460 Vdc max	460 Vdc max	460 Vdc max	460 Vdc max
	500 Vac	520 Vdc max	520 Vdc max	520 Vdc max	520 Vdc max
	600 Vac	630 Vdc max	630 Vdc max	630 Vdc max	630 Vdc max
	690 Vac	720 Vdc max	720 Vdc max	720 Vdc max	720 Vdc max
Field rated current		5A	5A	5A	5A
Field output voltage	500 Vac	425 Vdc max	425 Vdc max	425 Vdc max	425 Vdc max
AC Fast fuses		35-40A 00T/80	35-40A 00T/80	35-40A 00T/80	80A 00T/80
DC Fast fuses		35-40A 00T/80	35-40A 00T/80	50A 00T/80	100A 00T/80
*Dimensions (WxDxH) mm		214x265x440	214x265x440	214x265x440	214x265x440
*Weight kg		13	13	13	14

Size 1

Model	Input	DCREG4.100	DCREG4.150	DCREG4.180	DCREG4.250	DCREG4.350
*Armature rated current		100A	150A	180A	250A	350A
Overload		150%	150%	150%	150%	150%
Armature output Voltage	440 Vac	460 Vdc max	460 Vdc max	460 Vdc max	460 Vdc max	460 Vdc max
	500 Vac	520 Vdc max	520 Vdc max	520 Vdc max	520 Vdc max	520 Vdc max
	600 Vac	630 Vdc max	630 Vdc max	630 Vdc max	630 Vdc max	630 Vdc max
	690 Vac	720 Vdc max	720 Vdc max	720 Vdc max	720 Vdc max	720 Vdc max
Field rated current		5A	15A	15A	15A	15A
Field output voltage	500 Vac	425 Vdc max	425 Vdc max	425 Vdc max	425 Vdc max	425 Vdc max
AC Fast fuses		100A 00T/80	160A 00T/80	160A 00T/80	250A 00T/80	315A 00T/80
DC Fast fuses		125A 00T/80	200A 00T/80	250A 00T/80	315A 00T/80	375-400A 00T/80
*Dimensions (WxDxH) mm		214x265x440	214x265x440	214x265x440	214x265x440	214x265x440
*Weight kg		15	15	15	18	18

Size 2

Model	Input	DCREG4.410	DCREG4.500	DCREG4.600	DCREG4.900
*Armature rated current		410A	500A	600A	900A
Overload		150%	150%	150%	150%
Armature output Voltage	440 Vac	460 Vdc max	460 Vdc max	460 Vdc max	460 Vdc max
	500 Vac	520 Vdc max	520 Vdc max	520 Vdc max	520 Vdc max
	600 Vac	630 Vdc max	630 Vdc max	630 Vdc max	630 Vdc max
	690 Vac	720 Vdc max	720 Vdc max	720 Vdc max	720 Vdc max
Field rated current		35A	35A	35A	35A
Field output voltage	500 Vac	425 Vdc max	425 Vdc max	425 Vdc max	425 Vdc max
AC Fast fuses		450A 2T/80	550A 2T/80	630A 2T/80	900A 3T/80
DC Fast fuses		550A 2T/80	700A 2T/80	800A 2T/80	1250A 3T/80
*Dimensions (WxDxH) mm		330x360x596	330x360x596	330x360x596	330x360x596
*Weight kg		40	48	48	48

1) The DCREG series comes with different power supply ranges:  
 440Vac-500Vac-600Vac-690Vac  
 \* Rated current, dimension and weight can be changed based on power supply requirements  
 \*\* DCREG MODULAR.S, the control unit is to be added to the dimensions given in the table 214x265x440 (WxDxH)



Size 2A

Model	Input	DCREG4.1200
*Armature rated current		1400A
Overload		125%
Armature output Voltage	440 Vac	530 Vdc max
	500 Vac	600 Vdc max
	600 Vac	720 Vdc max
	690 Vac	800 Vdc max
Field rated current		35A
Field output voltage	500 Vac	425 Vdc max
AC Fast fuses		1100A 3T/80
FDC Fast fuses		1400A 3T/80
*Dimensions (WxDxH) mm		333x453x685
*Weight kg		54

Size MODULAR.S

Model	Input	DCREG4.1050S	DCREG4.1250S
*Armature rated current		1400A	1250A
Overload		125%	125%
Armature output Voltage	500 Vac	N.A	N.A
	600 Vac	N.A	630 Vdc max
	690 Vac	720 Vdc max	720 Vdc max
Field rated current		35A	35A
Field output voltage	500 Vac	425 Vdc max	425 Vdc max
AC Fast fuses		Included	Included
DC Fast fuses		Included	Included
*Dimensions (WxDxH) mm		500x275x860 (Size F)**	500x275x860 (Size F)**
*Weight kg		84	84

Size MODULAR.S

Model	Input	DCREG4.1400S	DCREG4.1600S	DCREG4.1800S	DCREG4.2000S	DCREG4.2300S
*Armature rated current		1400A	1600A	1800A	2000A	2300A
Overload		125%	125%	125%	125%	125%
Armature output Voltage	500 Vac	520 Vdc max	520 Vdc max	520 Vdc max	520 Vdc max	520 Vdc max
	600 Vac	N.A	630 Vdc max	630 Vdc max	630 Vdc max	630 Vdc max
	690 Vac	N.A	720 Vdc max	N.A	720 Vdc max	720 Vdc max
Field rated current		35A	35A	35A	35A	35A
Field output voltage	500 Vac	425 Vdc max	425 Vdc max	425 Vdc max	425 Vdc max	425 Vdc max
AC Fast fuses		Included	Included	Included	Included	Included
DC Fast fuses		Included	Included	Included	Included	Included
*Dimensions (WxDxH) mm		500x275x860 (Size F)**	500x375x1410 (Size G)**	500x375x1410 (Size G)**	500x375x1410 (Size G)**	620x495x1434 (Size H)**
*Weight kg		84	159	159	159	229

Size MODULAR.S

Model	Input	DCREG4.2500S	DCREG4.2700S	DCREG4.3000S	DCREG4.3500S	DCREG4.4500S
*Armature rated current		2500A	2700A	3000A	3500A	4500A
Overload		125%	125%	125%	125%	125%
Armature output Voltage	500 Vac	520 Vdc max	520 Vdc max	520 Vdc max	520 Vdc max	520 Vdc max
	600 Vac	630 Vdc max	630 Vdc max	630 Vdc max	630 Vdc max	630 Vdc max
	690 Vac	720 Vdc max	720 Vdc max	720 Vdc max	720 Vdc max	720 Vdc max
Field rated current		35A	35A	35A	35A	35A
Field output voltage	500 Vac	425 Vdc max	425 Vdc max	425 Vdc max	425 Vdc max	425 Vdc max
AC Fast fuses		Included	Included	Included	Included	Included
DC Fast fuses		Included	Included	Included	Included	Included
*Dimensions (WxDxH) mm		712x495x1505 (Size I)**	712x495x1505 (Size I)**	712x495x1505 (Size I)**	784x460x1790 (Size J)**	988x543x2070 (Size K)**
*Weight kg		229	289	289	331	624

1) The DCREG series comes with different power supply ranges:  
 440Vac-500Vac-600Vac-690Vac  
 \* Rated current, dimension and weight can be changed based on power supply requirements  
 \*\* DCREG MODULAR.S, the control unit is to be added to the dimensions given in the table 214x265x440 (WxDxH)



## Option for electromagnets applications

DCREG4 thyristor converter can be used to power very inductive loads, such as electromagnets. Applications problems due to this type of load have been solved by a control algorithm specially developed for DCREG4 converters.

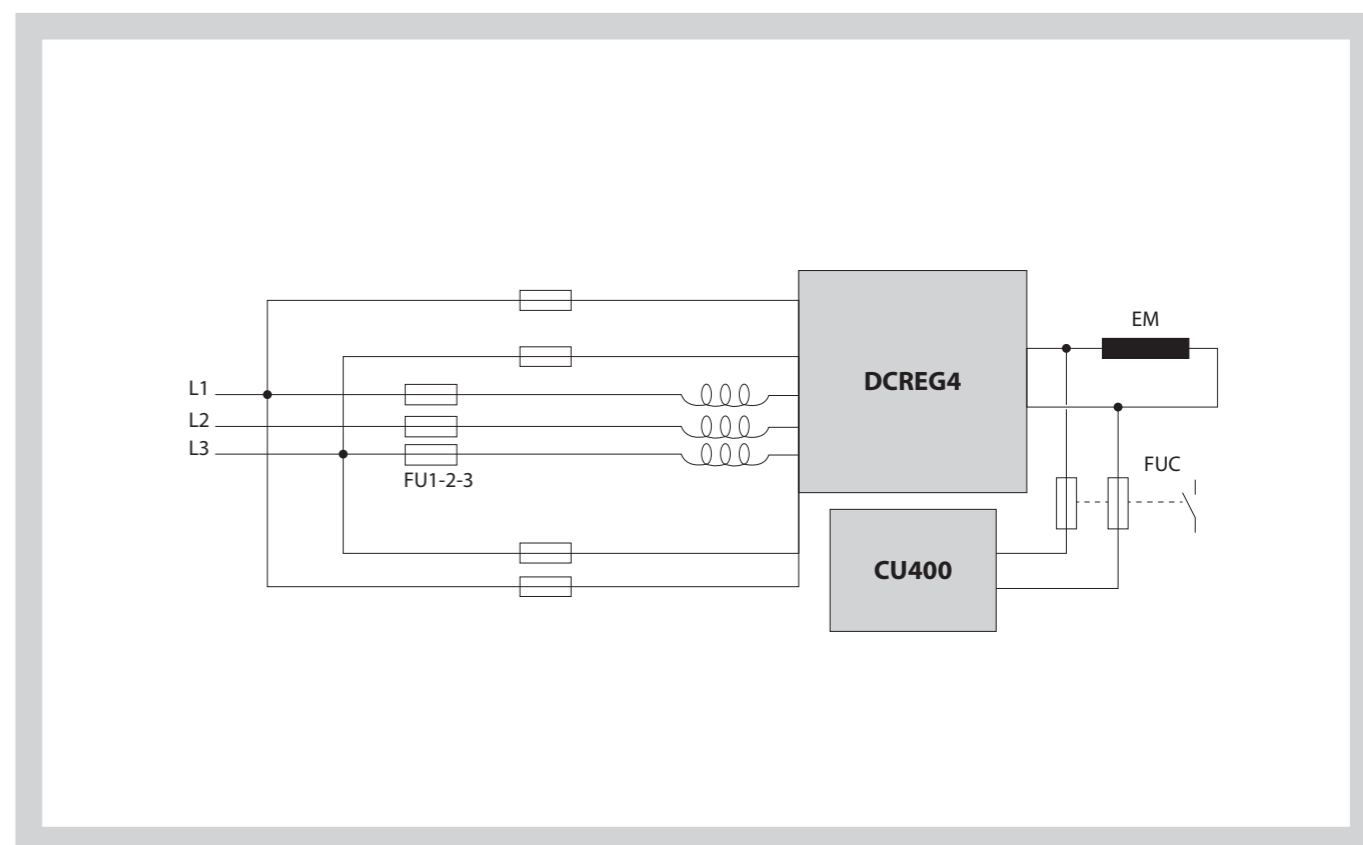
## CU400 clamping unit for DCREG

A special algorithm featured by the DCREG4 enables solving the application problems issued by an ohmic resistor connected in series to a very high inductance.

Clamping unit CU400 protects the DCREG4 when it is subject to dangerous overvoltage conditions generated when the current conduction mesh of the magnet unexpectedly opens. Power is cut by CU400, which avoids dangerous overvoltage conditions.

The energy stored into the magnet is "absorbed" and stored in an RC-type clamping circuit, where overvoltage is limited by a capacitor and is dissipated by a resistor.

To ensure proper clamping, unit CU400 must be connected directly to the converter DC side. To suppress the first current peak generated by the capacitor, this is precharged when connecting the main voltage of the mains (typically 400 VAC) to the relevant terminals. If a power supply conducted mesh is physically open or the connecting cables between the magnet and the converter open, the voltage arc generated by the current cut off is limited by the clamping circuit capable of suppressing overvoltage. The configuration above is typically required for electromagnets installed on bridge cranes.



### Max power supply 440 Vac

Converter size	Clamping unit	External capacitor (µF)	W(mm)	H (mm)	D(mm)	Weight (kg)
DCREG4.10	CU400	-	136	246	160	3.9
DCREG4.20	CU400	-	136	246	160	3.9
DCREG4.40	CU400	-	136	246	160	3.9
DCREG4.100	CU400	-	136	246	160	3.9
DCREG4.150	CU400	2 x 3300	136	246	160	3.9
DCREG4.180	CU400	2 x 3300	136	246	160	3.9
DCREG4.250	CU400	2 x 6800	136	246	160	3.9
DCREG4.350	2 x CU400	2 x 6800	136	246	160	3.9
DCREG4.410	2 x CU400	2 x 6800	136	246	160	3.9