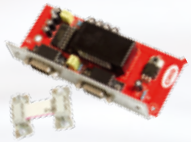
rectifier options

ANL — ANALOGUE & DIGITAL CONTROL CARD

REM — REMOTE CONTROL UNIT

SED — REMOTE SERIAL DISPLAY



PFB — COMMUNICATION ADAPTER FOR PROFIBUS-DP OR DEVICENET NETWORK

comparison chart

Quasar 500 CRS rectifiers use pulse width modulation (PWM) technique to control the current amplitude instead of the voltage. The result is a more accurate output current than other topologies.

	Thyristor		Switching	
	Primary control type	Secondary control type	Monolithic voltage control	CRS PWM current control
Ripple	high at low voltage	high	low	< 0.5% or < 3.5%
Efficiency	acceptable	low	high	87% (typ.)
Power factor	good	bad	high	>93%
Regulation speed	slow	slow	high	very high
Response time to load variation	slow	slow	high	very high (≈ 1 ms)
Accuracy	good	acceptable	very high	1/1000 of max. A/V
Shift phase	yes	yes	no phase shift	cos Ø = 1
Control type	voltage / current	voltage / current	voltage / current	current / voltage
Parallelability (multi-tower)	possible not easy	very difficult	easy in current mode	easy in current/voltage mode
Efficiency at no load / voltage out	poor	poor	high	high
Efficiency at no load / no voltage out	high	poor	high	high
Reverse speed (DCR & PPR type)	very slow	very slow	fastest only in current mode	fastest in both voltage and current mode

Quasar 500 SWITCH-MODE RECTIFIERS

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FEATURES

- ENERGY SAVING
- SPACE SAVING
- MULTI-TOWER INTERCONNECTION
- FAST RESPONSE TIME
- HIGH STABILITY TO LOAD VARIATION
- AIR & WATER COOLING SYSTEMS
- RS485 SERIAL COMMUNICATION INCLUDED

CRS INDUSTRIAL POWER EQUIPMENT

illustrated model : Q500 with 10V | 8000A | DC | Air

Quasar 500

SWITCH-MODE RECTIFIERS

Q500 switch-mode rectifiers are designed to meet all galvanic surface treatment requirements. Based on high speed IGBT technology, they provide high efficiency and performance. Compact dimensions and reduced weight versus conventional rectifiers without compromising reliability.

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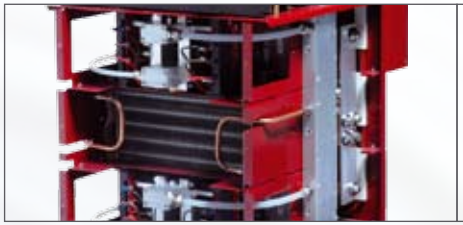
select the right size for your needs

from 100A up to 500A
in a small case

from a mini unit ... ... to a powerful installation of 32'000A!

For more information, read our technical catalogue

cooling systems



water cooled system

air cooled system

machine types

Current Type	Most Common Applications	Output Voltage (V)[1]	Max Output Current per Tower (A)	
			air	water
DC : Direct Current (forward)	Barrel process control Static method (jig) based processes Zinc alloy deposition Anodizing Hard anodizing Electro-winning Electro-polishing Electro-static painting Metal stripping	8/10	5000	8000
		12	5000	6000
		16	5000	5000
		18	4000	4250
		20	3200	4000
		25	3200	3000
		30	2600	2500
		40	2000	2000
		50	1500	1500
		60	1300	1250
		100	650	800
DCR : Direct Current Reverse (forward & reverse)	Hard chroming Alkaline copper Electro-cleaning	8/10/16/18/20 25/30/40/50	8 power modules (including reverse unit)	
PP : Pulse Plating (forward) Up to 3 times max. output DC current	Copper processes Decorative chrome Precious metals	16	5250 (10500 peak)	
PPR : Pulse Plating Reverse (forward & reverse) Up to 5 times max. output DC current	PCB (Printed Circuit Board) Hole metallization Nano-structure generation	16	600 (1800 peak)	

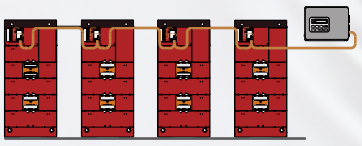
[1] Standard voltages. Other values upon request. Please contact our technical center.

technical specifications

Mains voltage	230 · 380 · 440 · 500 Vac +/- 10% | 50-60 Hz | 3 phases
Output DC voltage	4 - 100 V
Output DC current	100 - 8000 A per tower
Regulation	Constant current and voltage
Current ripple	<0.5% or <3.5% - All configurations (except mini) <2.0% - Mini configuration (01)
Efficiency	87% (typ.)
Environment temperature	0 - 40°C
Relative humidity	15 - 85% not condensing
Degree of protection	IP33 · Air cooled / IP43 · Water cooled
Protection features	Input over voltage, phase loss, surge, thermal protection, output short circuit
Dimensions W / D / H	424 / 429 / 154 - 1689 mm
Weight	25 - 306 Kg per tower
Cooling Systems	Air / Water
Finishing	Powder coated RAL3004
Operation modes	Manual Automatic (Via PC, PLC, Profibus-DP, DeviceNet, Modbus-RTU, CRS-ASCII)
Interfaces	RS232/RS485, Profibus-DP, DeviceNet

product range

2 years warranty



multi-tower interconnection
(DC type)
max. DC Power : 400 kVA / 4 towers

Configuration:	01 (mini)	02-i1	03-1i1	04-1i2	05- 1i1i1	06-1i2i1	07-1i3i1	08-2i2i2	09-2i3i2	10-2i4i2	11-2i2i2i2
Height:	154 mm	501 mm	633 mm	765 mm	897 mm	1029 mm	1161 mm	1293 mm	1425 mm	1557 mm	1689 mm
Max. DC Amps at 10V:	500 A	1000 A	2000 A	2500 A	3000 A	4000 A	5000 A	6000 A	7000 A	7500 A	8000 A
Weight Air:	25 Kg	79 Kg	99 Kg	119 Kg	143 Kg	163 Kg	183 Kg	203 Kg	223 Kg	243 Kg	267 Kg
Weight Water:	25 Kg	86 Kg	110 Kg	134 Kg	160 Kg	184 Kg	208 Kg	232 Kg	256 Kg	280 Kg	306 Kg