



# Baker Technology Associates, Inc. Q-Series Rectifiers

## Q100

Switch-mode  
Rectifiers

## E-Coat Application



Back View



Front View

Q100 Rectifier for E-Coat is a switch-mode rectifier, that adopts pulse width modulation (PWM) technique for the controlling the output voltage.

A buzzer and a push button are mounted on the rectifier; this buzzer will turn ON when the process is completed and red light of the push button starts blinking, pushing the button, the buzzer and red light will turn OFF.

- Ripple < 1.5% standard, 0.75% on request.
- Current regulation down to 2% of full scale.
- 93% efficiency.
- Ramp time 10 - 60 sec.

### Q100 Air Cooled 400VAC Standard Values

100V / 25A  
100V / 50A + REM  
160V / 25A  
160V / 50A + REM  
400V / 10A  
400V / 18A + REM

### Q300 01-1 Max Values

100V / 100A + REM  
160V / 75A + REM  
400V / 25A + REM

**ELECTRICAL SPECIFICATIONS**

<b>Output</b>	Voltage regulation range	10% - 100%	
	Current regulation range	2% - 100%	
	Current ripple   Full scan	< 1.5% with film Capacitor	< 0.75% with Electrolytic & film capacitors
	Efficiency	93% (typ.) at Rated Output	
<b>Main Supply</b>	Line voltage	3 x 230VAC ± 10%, 3 x 400VAC ± 10%, 3 x 480VAC ± 10%	
	Frequency	50 - 60Hz	
	Neutral	NOT USED	
	Power factor	> 93% at Rated Load	

**GENERAL SPECIFICATIONS**

<b>Technology</b>	Switching mode PWM, Full bridge IGBT inverter		
<b>Cooling System</b>	Air Cooled		
<b>Operation Conditions</b>	Location	Indoor use only	
	Ambient temperature	0 - 40°C	
	Relative humidity	15 - 85% not condensing	
	Filter obstruction - air cooled	15% max	
<b>Degree of Protection</b>	Air cooled	IP33	
<b>Conformity of EU Directives</b>	2004/108/EC - Electromagnetic Compatibility		
	2006/42/EC - Machines Directive		

**RANGE OF THE INPUT VALUES**

Ramp Time	10 - 60 sec
Target Voltage	10% - 100% of Max Volts
Process Time	0 - 5 Min in step of 1 Sec.

**E-Coat Rectifier Operating Procedure**

- 1> Turn on the rectifier with the main switch
- 2> Insert data
  - a. Ramp seconds
  - b. Target voltage
  - c. Time at target
  - d. E-Coat Min Amps - Rectifier stops if current goes lower than this value (minimum 2% of full scale)
  - e. Set buzzer time
    - i. -1 Buzzer on until red button is pushed (default)
    - ii. 0 Buzzer Off
    - iii. +x. x = Seconds from 1 - 60
- 3> Push red button, process starts
- 4> While process is in running, the red light of the push button is ON steady
- 5> At the end of the process, buzzer is activated and red light starts blinking
- 6> Push red button to stop buzzer and turn off the red light
- 7> To repeat the process go back to step 3.

Figure below reports an example of the generated waveform.

