

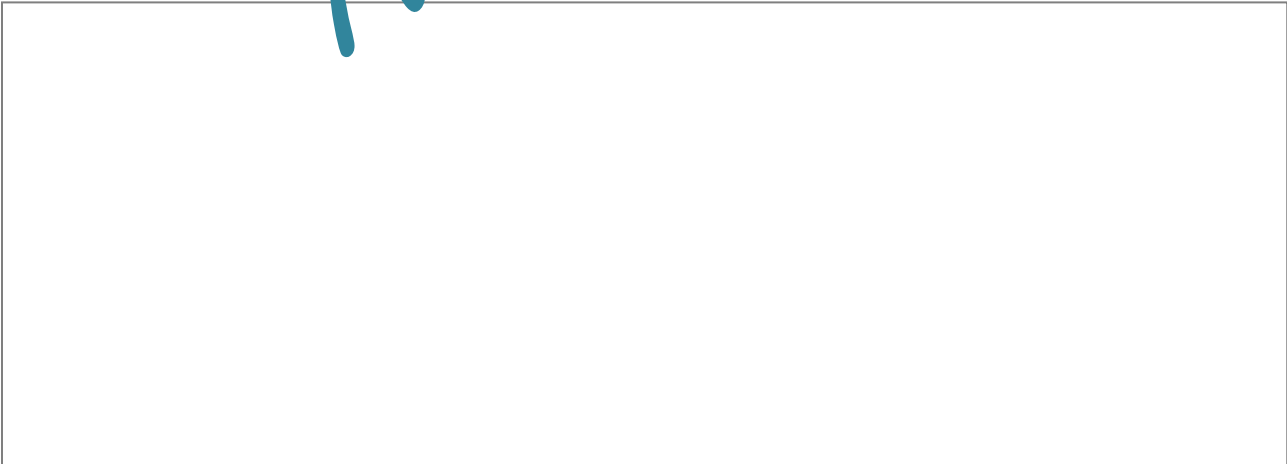


New

TECQ082,_095 SCR MODULES

Preliminary Data Sheet

- ▶ Extremely high power density
- ▶ Line voltage range up to 690 V_{RMS}
- ▶ High reliability
- ▶ Modularity
- ▶ User friendly assembly and maintenance
- ▶ Cost effective solution
- ▶ Suitable for heavy duty applications



Maximum Ratings

Parameters	Part number	TECQ082	TECQ095			Conditions	Units
I _{T(AV)}		825	950			180° cond, half sine T _a = 40 °C Air velocity = 8 m/s	A
I _{T(RMS)}		1295	1492				A
I _{TSM}		34	36			50 Hz, T _j = T _{jmax} , V _R = 0 V	kA
I _{TSM}		35.9	38.0			60 Hz, T _j = T _{jmax} , V _R = 0 V	kA
I ² t		5780	6480			50 Hz, T _j = T _{jmax} , V _R = 0 V	kA ² s
I ² t		5260	5897			60 Hz, T _j = T _{jmax} , V _R = 0 V	kA ² s
V _{DRM} /V _{RRM}		2200	1800			T _j = T _{jmax}	V
T _{jmax}		125	125				°C

Part Number	V code	VDRM VRRM max repetitive reverse and off-state blocking voltage	IDRM IRRM @ Tjmax	VL(RMS) maximum suggested RMS line voltage
		[V]	70	[V]
TECQ095	12	1200	70	400
	16	1600	70	500
	18	1800	70	550
TECQ082	22	2200	75	690

On-State Characteristics

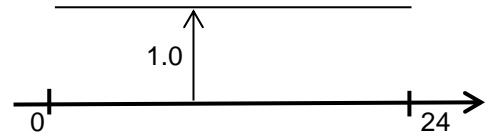
Parameters		TECQ082	TECQ095		Conditions	Units
V _{T(TO)}	Threshold voltage	0.99	0.8		T _j = T _{jmax}	V
r _T	On-state slope resistance	0.21	0.18		T _j = T _{jmax}	mΩ
I _H	Holding current, max	300	300		T _j = 25°C	mA
I _L	Latching current, typ	700	700		T _j = 25°C	mA
P _{MAX}	Max power losses	4660	4660		T _A = 40°C	W

Triggering Characteristics

Parameters		TECQ082	TECQ095		Conditions	Units
V _{GT}	Gate trigger voltage	3	3.5		T _j = 25°C, V _D = 5V	V
I _{GT}	Gate trigger current	250	300		T _j = 25°C, V _D = 5V	mA
P _{GM}	Peak gate power dissipation	150	150		Pulse width 1 ms	W
P _{G(AV)}	Average gate power dissipation	2	2			W
I _{FGM}	Peak gate current	10	10			A
V _{FGM}	Peak gate voltage (forward)	30	30			V
V _{RGM}	Peak gate voltage (reverse)	12	5			V

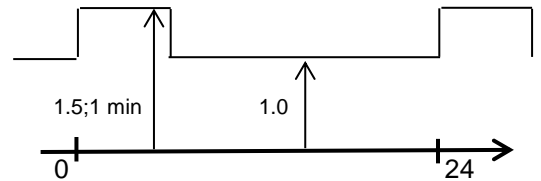
Switching Characteristics

Parameters		TECQ082	TECQ095		Conditions	Units
di/dt	Critical rate of rise of on-state current	200	200		T _j = T _{jmax}	A/μs
dV/dt	Critical rate of rise of off-state voltage	1000	1000		T _j = T _{jmax}	V/μs
t _q	Turn-off time, typ	450	400		T _j =T _{jmax} , I _T =1000A di/dt=-20A/μs V _R =50V dV/dt=20V/μs	μs



Maximum IEC class 1 currents for typical circuit type

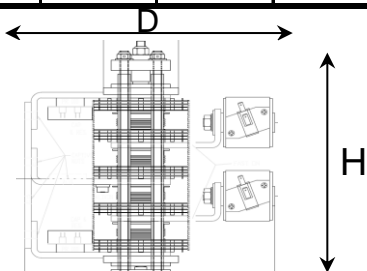
Circuit Type	TECQ082	TECQ095	Conditions	Units
AC switch	1843	2122	Ta = 40 °C Air velocity = 8 m/s	A
Center tap	1650	1900		A
Two pulse regen bridge	1650	1900		A
Six pulse regen bridge	2360	2700		A
Double star with I.P. transf.				



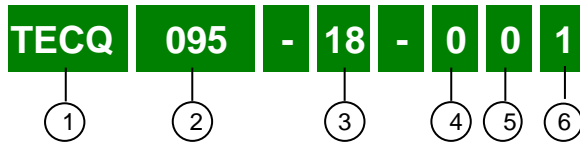
Maximum IEC class 2 currents for typical circuit type

Circuit Type	TECQ082	TECQ095	Conditions	Units
AC switch			TA = 40 °C delay angle = 0°	A
Center tap			TA = 40 °C delay angle = 0°	A
Two pulse bridge				
Six pulse bridge				

Thermal and mechanical characteristics

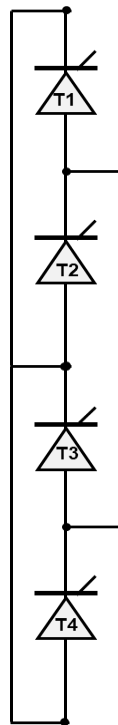
Parameters	TECQ082	TECQ095	Conditions	Units
T _{jmax} Max operating junction temperature	125	125		°C
T _{stg} Storage temperature	-40 +70	-40 +70		°C
R _{thJA} Thermal resistance (junction to ambient)	0.073	0.073	Air velocity = 8 m/s	°C/W
F Mounting torque - TEC to panel (+/- 10%) Mounting torque - busbar to TEC (+/- 10%)			M8 mounting screw	N·m
	14	14		N·m
Overall dimensions				
D Depth	338			mm
H Height	349			mm
W Width	170			mm
m Mass				kg

PART-NUMBERING SYSTEM

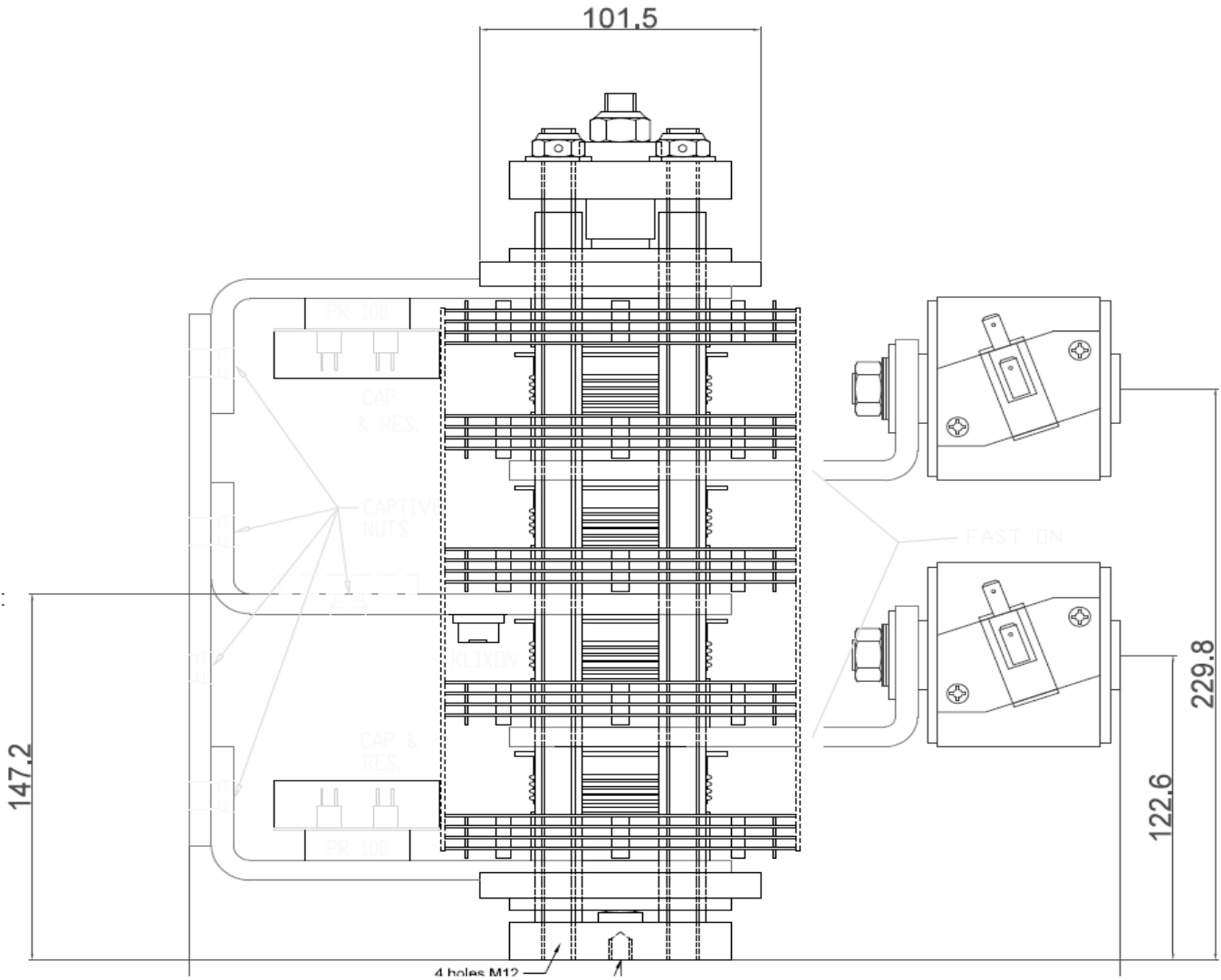


- ① Circuit configuration = double AC-switch in series - see scheme below
- ② Average current / 10
- ③ Blocking voltage / 100
- ④ 0 = No fuse - 1 = with fuse for regen application
- ⑤ 0 = no blown-fuse microswitch
- ⑥ 0 = No snubber - 2 = two RC snubber - S = two snubber resistor

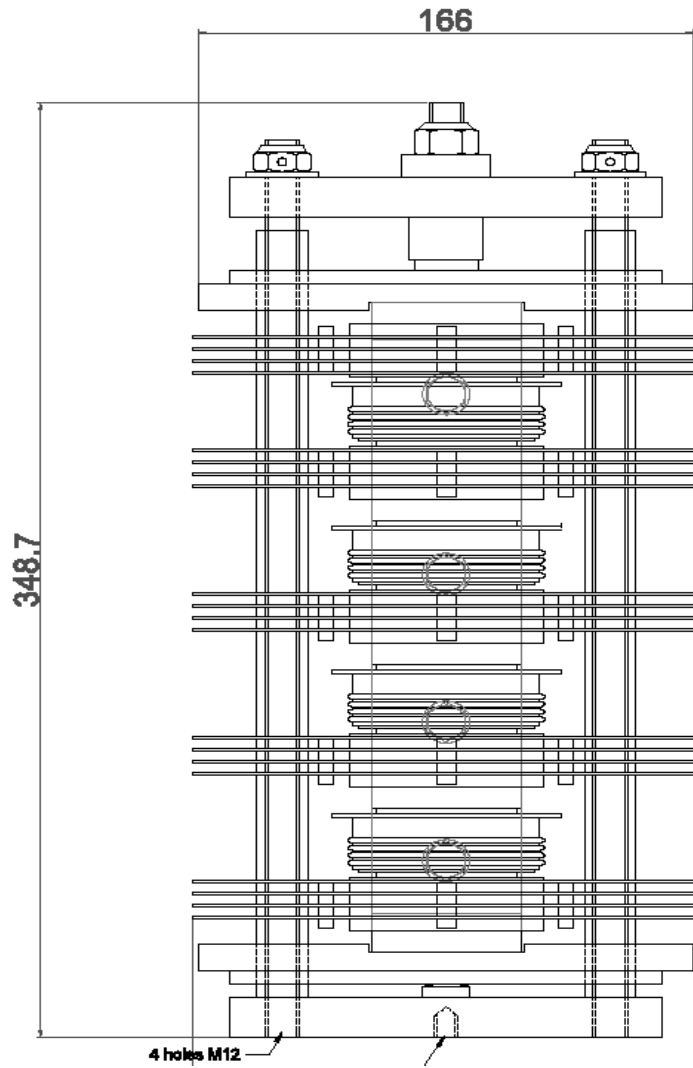
TECQ



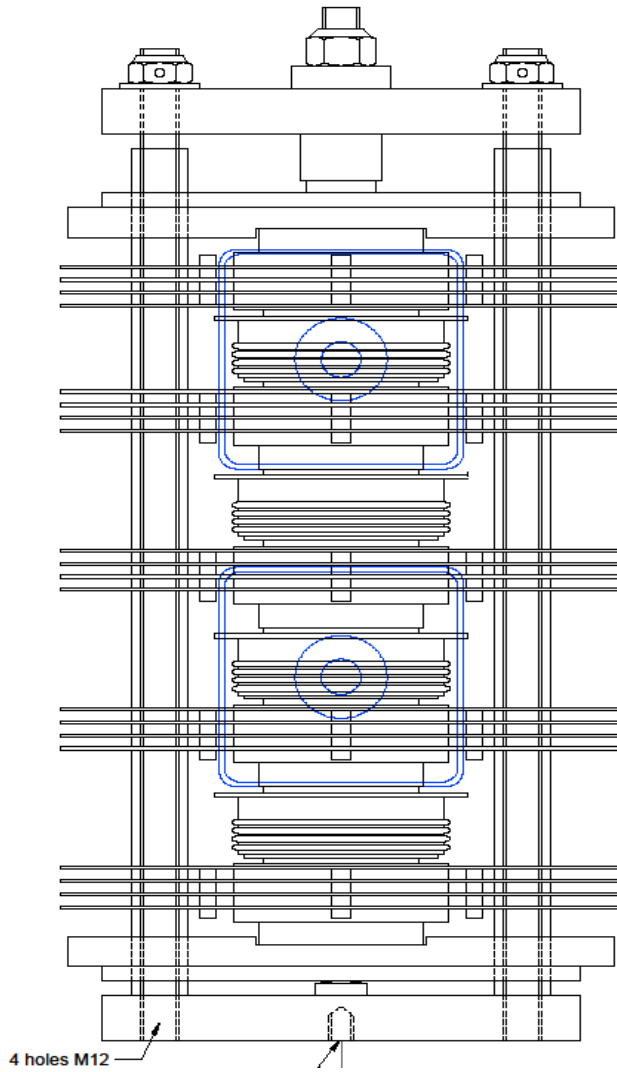
Outline - side view



Outline - AC side



Outline - fuse side



AC side



Fuse side



In the interest of product improvement Green Power Solutions reserves the right to change any specification given in this data sheet without notice.