

# AC Controller Modules

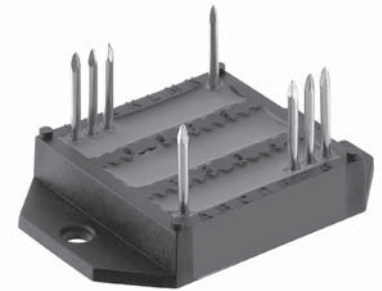
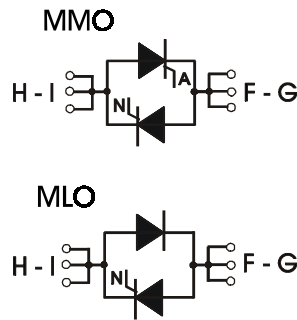
## ECO-PAC 2

$$I_{RMS} = 230A$$

$$V_{RRM} = 800 - 1800 V$$

### Preliminary Data

$V_{RSM}$ $V_{DSM}$ V	$V_{RRM}$ $V_{DRM}$ V	Type
900	800	MMO230-08io7 MLO230-08io7
1300	1200	MMO230-12io7 MLO230-12io7
1500	1400	MMO230-14io7 MLO230-14io7
1700	1600	MMO230-16io7 MLO230-16io7
1900	1800	MMO230-18io7 MLO230-18io7



Symbol	Conditions	Maximum Ratings		
$I_{RMS}$	$T_C = 85^\circ C$ ; 50-400 Hz (per single controller)	230	A	
$I_{TRMS}$		180	A	
$I_{TAVM}$	$T_C = 85^\circ C$ ; 180° sine	105	A	
$I_{TSM}$	$T_{VJ} = 45^\circ C$ ; $V_R = 0 V$ ; $t = 10 ms$ (50 Hz), sine	2250	A	
	$t = 8.3 ms$ (60 Hz), sine	2400	A	
$I^2dt$	$T_{VJ} = 45^\circ C$ ; $V_R = 0 V$ ; $t = 10 ms$ (50 Hz), sine	25300	A <sup>2</sup> s	
	$t = 8.3 ms$ (60 Hz), sine	23900	A <sup>2</sup> s	
$I^2dt$	$T_{VJ} = 125^\circ C$ ; $V_R = 0 V$ ; $t = 10 ms$ (50 Hz), sine	20000	A <sup>2</sup> s	
	$t = 8.3 ms$ (60 Hz), sine	19100	A <sup>2</sup> s	
$(di/dt)_{cr}$	$T_{VJ} = 125^\circ C$ ; $f = 50 Hz$ ; $t_p = 200 \mu s$ ; $V_D = 2/3 V_{DRM}$ ; $I_G = 0.45 A$ ; $di_G/dt = 0.45 A/\mu s$ ;	repetitive, $I_T = 250 A$	150	A/ $\mu s$
$(dv/dt)_{cr}$	$T_{VJ} = 125^\circ C$ ; $V_{DR} = 2/3 V_{DRM}$ ; $R_{GK} = \infty$ , method 1 (linear voltage rise)	non repetitive, $I_T = I_{TAVM}$	500	A/ $\mu s$
$P_{GM}$	$T_{VJ} = 125^\circ C$ ; $t_p = 30 ms$	$\leq 10$	W	
	$I_T = I_{TAVM}$ ; $t_p = 300 ms$	$\leq 5$	W	
$P_{GAVM}$		0.5	W	
$V_{RGM}$		10	V	
$T_{VJ}$		-40 ... + 125	°C	
$T_{VJM}$		125	°C	
$T_{stg}$		-40 ... + 125	°C	
$V_{ISOL}$	50/60 Hz, RMS; $t = 1 min$	3000	V ~	
	$I_{ISOL} \leq 1 mA$ ; $t = 1 s$	3600	V ~	
$M_d$	Mounting torque (M4)	1.5 - 2.0	Nm	
		14 - 18	lb.in.	
<b>Weight</b>	typ.	26	g	

### Features

- Thyristor controller for AC (circuit W1C acc. to IEC) for mains frequency
- Isolation voltage 3000 V~
- Planar glass passivated chips
- Low forward voltage drop
- Leads suitable for PC board soldering

### Applications

- Switching and control of single and three phase AC circuits
- Light and temperature control
- Softstart AC motor controller
- Solid state switches

### Advantages

- Easy to mount with two screws
- Space and weight savings
- Improved temperature and power cycling
- High power density
- Small and light weight

Data according to IEC 60747 refer to a single thyristor unless otherwise stated  
 IXYS reserves the right to change limits, test conditions and dimensions.

Component				
Symbol	Conditions	Characteristic Values		
		min.	typ.	max.
$I_D, I_R$	$T_{VJ} = 125^\circ\text{C}; V_R = V_{RRM}; V_D = V_{DRM}$			5 mA
$V_T$	$I_T = 300 \text{ A}; T_{VJ} = 25^\circ\text{C}$			1.5 V
$V_{TO}$	For power-loss calculations only			0.8 V
$r_T$				2.4 mΩ
$V_{GT}$	$V_D = 6 \text{ V}; T_{VJ} = 25^\circ\text{C}$ $T_{VJ} = -40^\circ\text{C}$			1.5 V 1.6 V
$I_{GT}$	$V_D = 6 \text{ V}; T_{VJ} = 25^\circ\text{C}$ $T_{VJ} = -40^\circ\text{C}$			150 mA 200 mA
$V_{GD}$	$T_{VJ} = 125^\circ\text{C}; V_D = \frac{2}{3}V_{DRM}$			0.2 V
$I_{GD}$	$T_{VJ} = 125^\circ\text{C}; V_D = \frac{2}{3}V_{DRM}$			10 mA
$I_L$	$T_{VJ} = 25^\circ\text{C}; t_p = 10 \text{ ms}$ $I_G = 0.45 \text{ A}; di_G/dt = 0.45 \text{ A}/\mu\text{s}$			450 mA
$I_H$	$T_{VJ} = 25^\circ\text{C}; V_D = 6 \text{ V}; R_{GK} = \infty$			200 mA
$t_{gd}$	$T_{VJ} = 25^\circ\text{C}; V_D = \frac{1}{2}V_{DRM}$ $I_G = 0.45 \text{ A}; di_G/dt = 0.45 \text{ A}/\mu\text{s}$			2 μs
$R_{thJC}$	per Thyristor; DC per module			0.26 K/W 0.13 K/W
$R_{thCH}$	per Thyristor; DC per module	0,2		K/W K/W
$d_s$	Creeping distance on surface			11.2 mm
$d_A$	Creeping distance in air			5.0 mm
$a$	Max. allowable acceleration			50 m/s <sup>2</sup>

