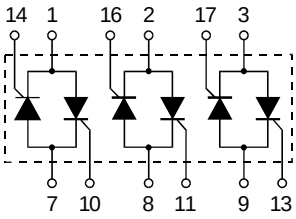
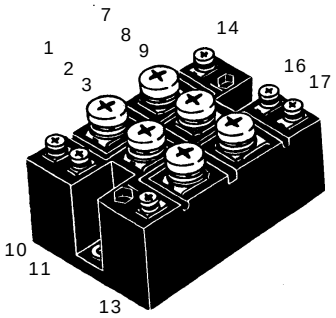
# Three Phase AC Controller Modules

$I_{RMS}$ = 40 A
$V_{RRM}$ = 800-1600 V

Preliminary data

| $V_{RSM}$ $V_{DSM}$ V | $V_{RRM}$ $V_{DRM}$ V | Type |
|---|---|---|
| 800 | 800 | VWO 40-08io7 |
| 1200 | 1200 | VWO 40-12io7 |
| 1400 | 1400 | VWO 40-14io7 |
| 1600 | 1600 | VWO 40-16io7 |




| Symbol | Test Conditions | | Maximum Ratings | |
|---|---|---|---|---|
| $I_{RMS}$ | $T_C$ = 85°C, 50 - 400 Hz (per phase) | | 40 | A |
| $I_{TRMS}$ | $T_{VJ} = T_{VJM}$ | | 29 | A |
| $I_{TAVM}$ | $T_C$ = 85°C; (180° sine) | | 18 | A |
| $I_{TSM}$ | $T_{VJ}$ = 45°C; | t = 10 ms (50 Hz), sine | 400 | A |
| | $V_R$ = 0 | t = 8.3 ms (60 Hz), sine | 450 | A |
| | $T_{VJ} = T_{VJM}$ | t = 10 ms (50 Hz), sine | 360 | A |
| | $V_R$ = 0 | t = 8.3 ms (60 Hz), sine | 390 | A |
| $I^2t$ | $T_{VJ}$ = 45°C | t = 10 ms (50 Hz), sine | 800 | $A^2s$ |
| | $V_R$ = 0 | t = 8.3 ms (60 Hz), sine | 850 | $A^2s$ |
| | $T_{VJ} = T_{VJM}$ | t = 10 ms (50 Hz), sine | 650 | $A^2s$ |
| | $V_R$ = 0 | t = 8.3 ms (60 Hz), sine | 640 | $A^2s$ |
| $(di/dt)_{cr}$ | $T_{VJ} = T_{VJM}$<br>f =50 Hz, $t_P$ =200 µs<br>$V_D$ = 2/3 $V_{DRM}$ | repetitive, $I_T$ = 150 A | 100 | A/µs |
| | $I_G$ = 0.3 A<br>$di_G/dt$ = 0.3 A/µs | non repetitive, $I_T = I_{TAVM}$ | 500 | A/µs |
| $(dv/dt)_{cr}$ | $T_{VJ} = T_{VJM}$;<br>$R_{GK}$ = ∞; method 1 (linear voltage rise) | $V_{DR}$ = 2/3 $V_{DRM}$ | 1000 | V/µs |
| $P_{GM}$ | $T_{VJ} = T_{VJM}$ | $t_p$ = 30 µs | 10 | W |
| | $I_T = I_{TAVM}$ | $t_p$ = 300 µs | 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 | 2500 | V~ |
| | $I_{ISOL} \leq$ 1 mA | t = 1 s | 3000 | V~ |
| $M_d$ | Mounting torque (M5) | | 5/44±15 % | Nm/lb.in. |
| | Terminal connection torque (M3; M5) | | 1.5/13±15 % | Nm/lb.in. |
| Weight | typ. | | 180 | g |

**Features**
- Thyristor controller for AC (circuit W3C acc. to IEC) for mains frequency
- Package with metal base plate
- Isolation voltage 3000 V~
- Planar passivated chips
- UL applied

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

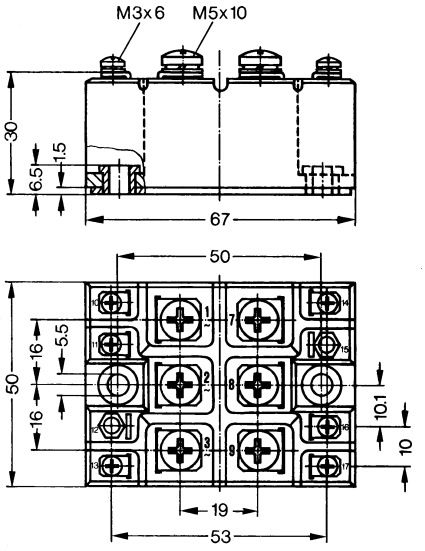
**Advantages**
- Easy to mount with two screws
- Space and weight savings
- Improved temperature and power cycling
- High power density

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

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| Symbol | Test Conditions | | Characteristic Values | | |
|---|---|---|---|---|---|
| $I_D$, $I_R$ | $T_{VJ} = T_{VJM}$; $V_R = V_{RRM}$; $V_D = V_{DRM}$ | | ≤ | 5 | mA |
| $V_T$ | $I_T$ = 80 A; $T_{VJ}$ = 25°C | | ≤ | 1.65 | V |
| $V_{T0}$ | For power-loss calculations only | | | 0.85 | V |
| $r_T$ | | | | 15 | mΩ |
| $V_{GT}$ | $V_D$ = 6 V; | $T_{VJ}$ = 25°C | ≤ | 1.0 | V |
| | | $T_{VJ}$ = -40°C | ≤ | 1.6 | V |
| $I_{GT}$ | $V_D$ = 6 V; | $T_{VJ}$ = 25°C | ≤ | 100 | mA |
| | | $T_{VJ}$ = -40°C | ≤ | 150 | mA |
| $V_{GD}$ | $T_{VJ} = T_{VJM}$; | $V_D$ = 2/3 $V_{DRM}$ | ≤ | 0.2 | V |
| $I_{GD}$ | | | ≤ | 5 | mA |
| $I_L$ | $T_{VJ}$ = 25°C; $t_P$ = 10 µs<br>$I_G$ = 0.3 A; $di_G/dt$ = 0.3 A/µs | | ≤ | 200 | mA |
| $I_H$ | $T_{VJ}$ = 25°C; $V_D$ = 6 V; $R_{GK}$ = ∞ | | ≤ | 150 | mA |
| $t_{gd}$ | $T_{VJ}$ = 25°C; $V_D$ = 1/2 $V_{DRM}$<br>$I_G$ = 0.3 A; $di_G/dt$ = 0.3 A/µs | | ≤ | 2 | µs |
| $t_q$ | $T_{VJ} = T_{VJM}$; $I_T$ = 20 A, $t_P$ = 200 µs; di/dt = -10 A/µs<br>$V_R$ = 100 V; dv/dt = 15 V/µs; $V_D$ = 2/3 $V_{DRM}$ | | typ. | 150 | µs |
| $R_{thJC}$ | per thyristor; sine 180°el | | | 1.43 | K/W |
| | per module | | | 0.238 | K/W |
| $R_{thJK}$ | per thyristor; sine 180°el | | | 1.53 | K/W |
| | per module | | | 0.255 | K/W |
| $d_S$ | Creeping distance on surface | | | 8.0 | mm |
| $d_A$ | Creepage distance in air | | | 4.5 | mm |
| a | Max. allowable acceleration | | | 50 | $m/s^2$ |

**Dimensions in mm (1 mm = 0.0394")**




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