Millenium II +

➜ Standard

- Intuitive programming via function block (FBD) or grafcet (SFC)
- Function : timing, counting, etc
- Application-specific functions : rotation, cam timers, calculation, etc
- Discrete, analogue or potentiometer inputs
- Relay, solid state or PWM outputs
- Backlit LCD display
- Program password protection
- Integral calender and clock
- User-definable from the front panel
- Non-expandable



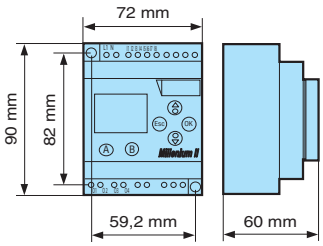


Specifications

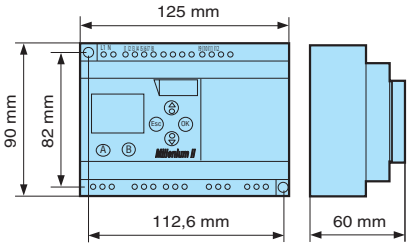
Type	Input	Output	Supply	Code
SA 12	8 PNP	4 relays	24 VDC	88 950 041
	8	4 relays	100 - 240 VAC	88 950 043
	8	4 relays	24 VAC	88 950 044
	8 PNP	4 solid state	24 VDC	88 950 042
	8 PNP	4 relays	12 V DC	88 950 045
	8 PNP	4 solid state	12 V DC	88 950 046
	8 NPN	4 relays	24 VDC	88 950 049
SA 20	12 PNP	8 relays	24 VDC	88 950 051
	12	8 relays	100 - 240 VAC	88 950 053
	12	8 relays	24 VAC	88 950 054
	12 PNP	8 solid state	24 VDC	88 950 052
	12 PNP	8 relays	12 V DC	88 950 055
	12 PNP	8 solid state	12 V DC	88 950 056
	12 NPN	8 relays	24 VDC	88 950 059

Dimensions

SA 12



SA 20



General characteristics

see page 23

To order, see page 6

Millenium II +

➜ Expandable

- Expandable : communication, inputs/outputs, etc
- Intuitive programming via function block (FBD) or grafcet (SFC)
- Function : timing, counting, etc
- Application-specific functions : rotation, cam timers, calculation, etc
- Discrete, analogue or potentiometer inputs
- Relay, solid state or PWM outputs
- Backlit LCD display
- Program password protection
- Integral calender and clock
- User-definable from the front panel
- Can take an XC adjacent extension and an XL local extension



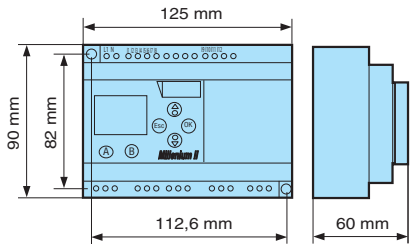


Specifications

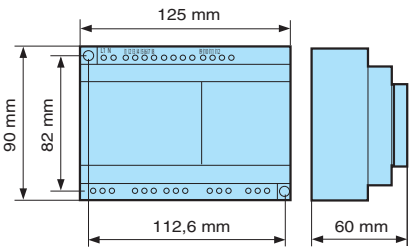
Type	Input	Output	Supply	Code
XT 20	12 PNP	8 relays	24 VDC	88 950 061
	12 PNP	8 relays	100 - 240 VAC	88 950 063
	12 PNP	8 relays	24 VAC	88 950 064
	12 PNP	8 solid state	24 VDC	88 950 062
	12 PNP	8 relays	12 V DC	88 950 065
	12 PNP	8 solid state	12 V DC	88 950 066
	12 NPN	8 relays	24 VDC	88 950 069
EX 20	12 PNP	8 relays	24 V DC	88 950 831
	12	8 relays	100 - 240 V AC	88 950 833
	12	8 relays	24 V AC	88 950 834
	12 PNP	8 solid state	24 V DC	88 950 832
	12 NPN	8 relays	24 V DC	88 950 839

Dimensions

XT 20



EX 20



General characteristics

see page 23

To order, see page 6

Millenium II +

➜ Blind

- No display or parameter-setting buttons
- Intuitive programming via function block (FBD) or grafcet (SFC)
- Function : timing, counting, etc
- Application-specific functions : rotation, cam timers, calculation, etc
- Discrete, analogue or potentiometer inputs
- Relay, solid state or PWM outputs
- Program protected by a password
- Integral calendar and clock



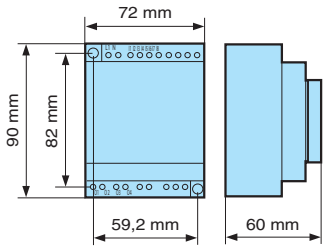


Specifications

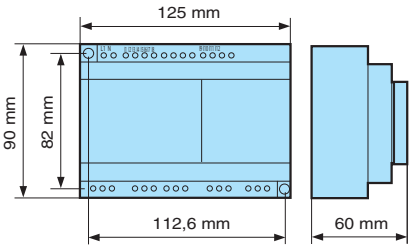
Type	Input	Output	Supply	Code
EC12	8 PNP	4 relays	24 VDC	88 950 021
	8	4 relays	100 - 240 VAC	88 950 023
	8	4 relays	24 VAC	88 950 024
	8 PNP	4 solid state	24 VDC	88 950 022
	8 PNP	4 relays	12 V DC	88 950 025
	8 PNP	4 solid state	12 V DC	88 950 026
	8 NPN	4 relays	24 VDC	88 950 029
EC 20	12 PNP	8 relays	24 VDC	88 950 031
	12	8 relays	100 - 240 VAC	88 950 033
	12	8 relays	24 VAC	88 950 034
	12 PNP	8 solid state	24 VDC	88 950 032
	12 PNP	8 relays	12 V DC	88 950 035
	12 PNP	8 solid state	12 V DC	88 950 036
	12 NPN	8 relays	24 VDC	88 950 039

Dimensions

EC 12



EC 20



General characteristics

see page 23

To order, see page 6

Chronos 2 timers

➜ 17.5 mm DIN rail mounting

- Relay or solid state output
- Multi-function or mono-function
- Multi-range
- Multi-voltage
- Screw or spring terminals
- LED status indicator (relay version)
- Option of connecting an external power supply to the control input
- 3-wire sensor control option



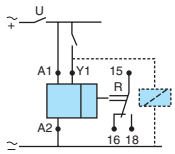


Specifications

Type	Functions	Output	Nominal rating	Connections	Supply voltage	Code
MUR1	A - At - B - C- H - Ht - Di - D - Ac - Bw	1 changeover relay	8 A	Screw terminals	24 V DC / 24 → 240 V AC	88 826 105
MAR1	A - At	1 changeover relay	8 A	Screw terminals	24 V DC / 24 → 240 VAC	88 826 115
MBR1	B	1 changeover relay	8 A	Screw terminals	24V DC / 24 → 240 V AC	88 826 125
MCR1	C	1 changeover relay	8 A	Screw terminals	24 V DC / 24 → 240 V AC	88 826 135
MHR1	H - Ht	1 changeover relay	8 A	Screw terminals	24 V DC / 24 → 240 V AC	88 826 145
MLR1	Li-L	1 changeover relay	8 A	Screw terminals	24 V DC / 24 → 240 V AC	88 826 155
MUR4	A - At - B - C - H - Ht - Di - D - Ac - Bw	1 changeover relay	8 A	Screw terminals	12 V DC / AC	88 826 100
MUR3	A - At - B - C - H - Ht-Di - D - Ac - Bw	1 changeover relay	8 A	Screw terminals	12 → 240V AC / DC	88 826 103
MURc3	A - At - B - C - H - Ht - Di - D - Ac - Bw	1 changeover relay	8 A	Spring terminals	12 → 240 V AC/DC	88 826 503
MXR1	Ad - Ah - N - O - P - Pt - Tl - Tt - W	1 changeover relay	8 A	Screw terminals	24 V DC / 24 → 240 V AC	88 826 185
MUS2	A - At - B - C - H - Ht - Di - D - Ac - Bw	Solid state	0.7 A	Screw terminals	24 → 240 V AC	88 826 004
MAS5	A	Solid state	0.7 A	Screw terminals	24 → 240V AC / DC	88 826 014
MHS2	H	Solid state	0.7 A	Screw terminals	24 → 240 V AC	88 826 044
MLS2	Li - L	Solid state	0.7 A	Screw terminals	24 → 240 V AC	88 826 054

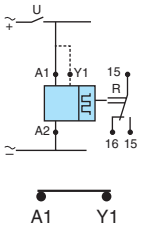
Connections

1 changeover relay output



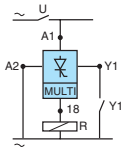
A-At / H-Ht / B / C / Di-D / Ac / BW - Ad - Ah - N - O - P - Pt - Tl - Tt - W

1 changeover relay output



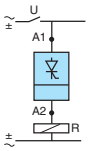
Li - L

Solid state output



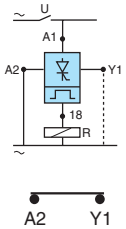
A-At / H-Ht / B / C / Di-D / Ac / BW - Ad - Ah - N - O - P - Pt - Tl - Tt - W

Solid state output



A / H

Solid state output



L / Li

General characteristics

see page 45

To order, see page 6

GRD single or double phase DIN rail mounting

➜ GRD range 22.5 mm single phase

- Single phase
- Complete, compact units
- Tailor-made solution to current sinks
- DIN rail and panel mounting
- Rating : 12 and 25 A (Triac) -25 A (SCR)
- Protection by RC filter
- Optional protection by removable varistor
- LED display of input status
- UL-Cul approval and CE marking



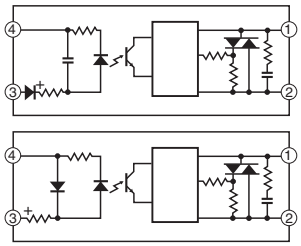
Specifications

Type	Current	Output voltage	Input voltage	Code
Zero voltage switching (Triac)	12 A	24 - 280 V AC	90 - 140 V AC	84 130 150
			4 - 32 V DC	84 130 101
			180 - 280 V AC/ DC	84 130 100
	20 A	24 - 280 V AC	90 - 140 V AC	84 130 152
			4 - 32 V DC	84 130 103
			180 - 280 V AC/ DC	84 130 102
Zero voltage switching (SCR)	25 A	48 - 660 V AC	180 - 280 V AC DC	84 130 118
			4 - 32 V DC	84 130 116
			90 - 140 V AC	84 130 158
Instantaneous switching (SCR)	25 A	48 - 660 V AC	4 - 32 V DC	84 130 117

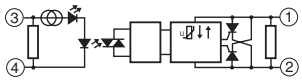
5

Connections

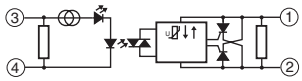
GRD range - single-phase with triac



GRD range - single-phase with SCR Zero voltage switching

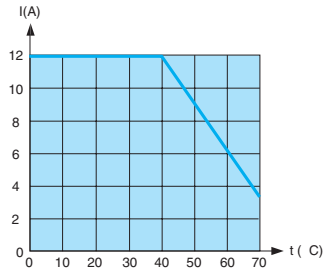


GRD range - single-phase with SCR Instantaneous switching

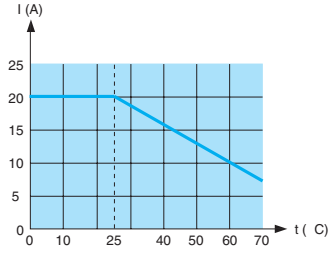


Curves

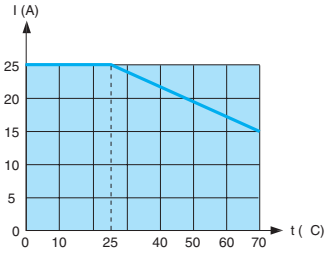
GRD range 22.5 mm - 12 A (Triac)



GRD range 22.5 mm - 25 A (Triac)



25 A (SCR)



To order, see page 6

GRD single or double phase DIN rail mounting

➜ GRD Range 45 mm single phase

- Single phase
- Complete, compact units
- Tailor-made solution to current sinks
- DIN rail and panel mounting
- Rating : 35 and 45 A
- Back-to-back SCRs
- Protection by RC filter
- Optional protection by removable varistor
- LED display of input status
- UL-Cul approval and CE marking



Specifications

Type	Current	Output voltage	Input voltage	Code
Zero voltage switching SCR output	35 A	48 - 660 V AC	90 - 280 V AC / DC	84 130 110
			4 - 32 V DC	84 130 111
	45 A	48 - 660 V AC	90 - 280 V AC / DC	84 130 115
			4 - 32 V DC	84 130 113
Instantaneous switching Thyristor output	35 A	48 - 660 V AC	4 - 32 V DC	84 130 112
	45 A			84 130 114

General characteristics

Output characteristics	
Voltage range (Vrms max)	48-660
Peak voltage - t = min (V)	1000 (1)
Maximum off-state leakage at Vmax and T = 25 °C (mAeff per phase)	4
Minimum current mA(rms)	100
Max. 1-cycle surge A(peak)	750
Max. 1-second surge A(peak)	145
On-state voltage drop at Imax and T = 25 °C V(peak)	1.6
I t (t = 10 ms) (A^2s)	35A : 1260 45A : 5000
Static (off-state) dv/dt (V/µs)	500
Supply frequency range	47 → 80
Cos φ (Zero voltage)	> 0.5
Rth junction / ambient air (°C/W)	35A : 3.78 °C 45A : 1.65 °C/W
Inputs specifications	
Input voltage	35A : 80-280 AC/DC 45A : 4-32 DC
Turn-off voltage (V)	35A : 10 Veff 45A : 1 V DC
Maximum current at Vmax	35A : 10 mAeff 45A : 12 mA
Nominal input resistance (kΩ)	35A : 45 45A : 3
Response time (close) (ms)	35A : 20 ms 45A : 0.5 cycle max.
Response time (open) (ms)	35A : 30 ms 45A : 0.5 cycle max.
General characteristics	
Operating temperature	-20 → +80 °C
Temperature stored	-40 → +100 °C
Input to output insulation voltage V(rms)	4000
Dielectric strength V(rms)	2500
Input/output capacitance (pF)	8
Material housing	Self-extinguishing (UL 94 V0)
Material baseplate	aluminium
Weight (g)	490
Input terminal capacity	Ø 2 mm max.
Output terminal capacity	Ø 5.6 mm max.

To order, see page 6

GRD three-phase DIN rail mounting

➜ GRD Range 90 mm 3 phase

- Three-phase
- Complete, compact units
- Tailor-made solution to current sinks
- DIN rail and panel mounting
- Rating : 3 x 25 A
- Back-to-back SCRs
- Protection by RC filter
- Optional protection by removable varistor
- LED display of input status
- UL-Cul approval and CE marking



Specifications

Type	Current	Output voltage	Input voltage	Code
SCR zero voltage switching	3 x 20 A	48 - 660 V AC	90 - 280 V AC / DC	84 130 311
			4 - 32 V DC	84 130 310
SCR Instantaneous switching	3 x 20 A	48 - 660 V AC	4 - 32 V DC	84 130 312

General characteristics

Output characteristics	
Voltage range (Vrms max)	48-660
Peak voltage (1 min) V(peak)	1200
Maximum current	3x35 (A)
Maximum off-state leakage at Vmax and T = 25 °C (mAeff per phase)	20
Minimum current (mArms per phase)	100
Max 1 cycle surge T = 25 °C A(rms)	500
Max 1 second surge T = 25 °C A(rms)	145
On-state voltage drop at Imax and T = 25 °C V(peak)	1.6
I t (t = 10 ms) (A^2s)	1260
Static (off-state) dv/dt (V/µs)	500
Supply frequency range	47 → 80 Hz
Cos φ (Zero voltage)	> 0.5
Rth junction / ambient air (°C/W)	1 °C/W
Inputs specifications	
Input voltage	90-280 AC/DC 4-32 DC
Turn-off voltage (V)	10 Veff 1 V DC
Maximum current at Vmax	10 mAeff 10 mA
Nominal input resistance (kΩ)	45 3
Response time (close) (ms)	20 ms 0.5 cycle max.
Response time (open) (ms)	30 ms 0.5 cycle max.
General characteristics	
Operating temperature (°C)	-20 → +80
Storage temperature (°C)	-40 → +100
Input to output insulation voltage V(rms)	4000
Dielectric strength V(rms)	2500
Material housing	Self-extinguishing (UL 94 V0)
Material baseplate	aluminium
Input/output capacitance (pF)	8
Weight (g)	940

To order, see page 6

GRD double phase DIN rail mounting

➜ GRD Range 90 mm double phase

- Double phase
- Complete, compact units
- Tailor-made solution to current sinks
- DIN rail and panel mounting
- Rating : 2 x 25 A
- Back-to-back SCRs
- Protection by RC filter
- Optional protection by removable varistor
- LED display of input status
- UL-Cul approval and CE marking



Specifications

Type	Current	Output voltage	Input voltage	Code
SCR zero voltage switching	2 x 25 A	48 - 660 V AC	90 - 280 V AC / DC	84 130 222
			4 - 32 V DC	84 130 220
SCR Instantaneous switching	2 x 25 A	48 - 660 V AC	4 - 32 V DC	84 130 221

General characteristics

Output specifications	
Voltage range (Vrms max)	48-660
Peak voltage (1 min) V(peak)	1200
Maximum current	2500
Maximum off-state leakage at Vmax and T = 25 °C (mAeff per phase)	2x25A
Minimum current (mArms per phase)	100
Max 1 cycle surge T = 25 °C A(rms)	500
Max 1 second surge T = 25 °C A(rms)	135
On-state voltage drop at Imax and T = 25 °C V(peak)	1.6
I t (t = 10 ms) (A^2s)	1260
Supply frequency range	47 → 80 Hz
Cos φ (Zero voltage)	> 0.5
Rth junction / ambient air (°C/W)	0.95
Inputs specifications	
Input voltage	90-280 AC/DC 4-32 DC
Turn-off voltage (V)	10 Veff 1 V DC
Maximum current at Vmax	10 mAeff 10 mA
Nominal input resistance (kΩ)	45 3
Response time (close) (ms)	20 ms 0.5 cycle max.
Response time (open) (ms)	30 ms 0.5 cycle max.
General characteristics	
Operating temperature (°C)	-20 → +80
Storage temperature (°C)	-40 → +100
Input to output insulation voltage V(rms)	4000
Dielectric strength V(rms)	2500
Input/output capacitance (pF)	8
Material housing	Self-extinguishing (UL 94 V0)
Material baseplate	aluminium
Weight (g)	940

To order, see page 6