

**M-GS20 / 40PC Static Relay Zero-crossing or phase angle  
(8 PROGRAMMABLE FUNCTIONS) AUTOMATIC ACQUISITION OF CONTROL  
SIGNALS AND LINE FREQUENCY. SINGLE PHASE 20 / 40A 230-440V AC 50-60Hz**



**M-GS20PC**  
H.138-L.24-P.108  
HOOKING FOR  
DIN RAIL

Via DIP-switches on the front panel, you can set up eight different actuation methods. Four with SSR control in the range 11-24VDC 5mA, and four with analog control 0-10V DC. They are equipped with load, fuse, semiconductor fault diagnostics for all functions except in the use with MASTER-SLAVE method. It must be powered with 24VDC 20mA, and is able to automatically adapt to the 50/60Hz line and LOGIC or ANALOG control signal.



**FUNCTION 1:** Dip 1 (off), Dip 2 (off). Zero-crossing. With SSR signal, the relay switches over with direct control, the AL line is considered fuse load fault alarm.  
**FUNCTION 1A :** with analog signal 0-10V, converts the switching into proportional times of 500ms. The AL output can be used to control one or two relays simultaneously with MASTER SLAVE method. Suitable for SINGLE AND THREE-PHASE RESISTIVE LOADS, with single phase, two phase and three phase method.

**FUNCTION 2 :** Dip 1 (on), Dip 2 (off). Zero-crossing. With SSR signal, the relay switches with a direct command performing "phase angle soft" from zero to 100% with a time of 400ms, for an average trigger time equal to 5 sec. After this period the switching becomes 'zero-crossing'. If the control signal remains absent for more than 2 sec., that automatically resets the soft. Minimum recommended SSR cycle time 1 sec. The AL output is considered fuse load fault alarm.  
**FUNCTION 2A :** With analog signal 0-10V converts the switching into proportional times of 500ms. The AL output is considered fuse load fault. Suitable for SINGLE-PHASE RESISTIVE LOADS with considerable variations in initial draw such as medium and short wave infrared lamps.

**FUNCTION 3 :** Dip 1 (off), Dip 2 (on). This function requires a fixed SSR cycle time of 1 sec. +/- 3% The relay actuates with "phase angle" converting the SSR control signal in a reference in %, performing the soft start from 0 to 100% with a time of 1Sec. Auto soft in the event of transient lack of line voltage. The AL output is considered fuse load fault.  
**FUNCTION 3A:** with analog signal 0-10V behaves as a normal phase angle control with characteristics of soft, auto-soft and alarm identical as function 3. Suitable for SINGLE-PHASE RESISTIVE AND INDUCTIVE LOADS, with considerable variations in initial draw, in particular in surface thermal treatments in motion with infrared shortwave lamps.

**FUNCTION 4 :** Dip 1 (on), Dip 2 (on). This function requires a fixed SSR cycle time of 1 sec. +/- 3% The relay performs a "phase angle" preheating by converting the SSR control signal in a percentage reference, for a period of 5 sec, then passes from phase angle to zero crossing control, with a SSR cycle time of 500ms. In preheating, it behaves as a normal phase angle control, performing the soft start of 1Sec. In the case of transient lack of line voltage, preheating is reset. The AL output is considered fuse load fault.

**FUNCTION 4A :** with the analog signal 0-10V it behaves with the same characteristics as function 4. SUITABLE FOR SINGLE-PHASE RESISTIVE LOADS with considerable variations in initial draw, such as medium and short wave infrared lamps.



**M-GS40PC**  
H.100-L.60-P.115  
HOOKING FOR  
DIN RAIL

DIP Prog.

**COMMON SPECIFICATIONS:**

- Switched current at 45°C environment
- M-GS20PC (17.5A I2T450A ) 230/400V AC.
- M-GS40PC (30A I2T880A) 230/400V AC.
- POWER SUPPLY 24V DC, 20mA + (ALARM OUT).
- LOGIC CONTROL SIGNAL 11-24V DC 2mA.
- ANALOG CONTROL SIGNAL 1-10V DC 1mA.
- (Limiting trimmer 0-100% of the control signal, for 0-10v test only)
- ALARM OUT (EXCEPT FOR PROG 1A) 22V DC MAX.20mA
- Reports: Breaking semiconductor, load, fuse and absence of line voltage.
- WITH INTERNAL DIODE FOR PARALLEL CONNECTION.
- RESPONSE TIME 1.5Sec.
- OUT (PROG. 1A) 22V DC MAX.20mA. FOR MASTER-SLAVE USE.

**- SSR control (11-24V DC 5mA)**

- FUNCTION 1:** Dip 1 (off), Dip 2 (off).  
- ZERO CROSSING ACTUATION.  
- Minimum cycle time (SSR) 0.2 Sec.
- FUNCTION 2:** Dip 1 (on), Dip 2 (off).  
- PHASE ANGLE + ZERO CROSSING actuation.  
- RECOMMENDED CYCLE TIME (SSR) 1 Sec.  
- MINIMUM PULSE CONSIDERED 20ms.  
- PHASE ANGLE SOFT TIME FROM 0 TO 100% 400mS.  
- SOFT DURATION 5 Sec. OF SSR ACTIVE TIME.  
- After the ZERO CROSSING soft actuation.  
- TIME FOR SOFT RESET DUE TO LACK OF SSR 2 Sec.

- FUNCTION 3:** Dip 1 (off), Dip 2 (on).  
- PHASE ANGLE actuation.  
- CYCLE TIME (SSR) FOR SAMPLING 1 Sec. +/- 3%  
- MINIMUM PULSE CONSIDERED 20ms.  
- ACTUATION % UPDATE TIME 1 Sec.  
- SOFT START FROM 0 TO 100% 1 Sec.

- FUNCTION 4:** Dip 1 (on), Dip 2 (on).  
- PHASE ANGLE + FAST ZERO CROSSING actuation.  
- CYCLE TIME (SSR) FOR SAMPLING 1 Sec. +/- 3%  
- ACTUATION % UPDATE TIME 1 Sec.  
- SOFT START FROM 0 TO 100% 1 Sec.  
- Phase angle preheating time 5 Sec.  
- After preheating, conversion to Zero Crossing with 500ms. SSR cycle  
- MINIMUM PULSE CONSIDERED 20ms.

**Control 0-10V DC 1mA.**

- FUNCTION 1A:** Dip 1 (off), Dip 2 (off).  
- ZERO CROSSING ACTUATION.  
- Cycle time conversion (SSR) 500mS  
- Out AL 22V DC MAX. 20mS. For MASTER-SLAVE function.

- FUNCTION 2A:** Dip 1 (on), Dip 2 (off).  
- ZERO CROSSING ACTUATION.  
- Cycle time conversion (SSR) 500mS  
- Out AL 22V DC MAX. 20mS. Load/fuse fault alarm.

- FUNCTION 3A:** Dip 1 (off), Dip 2 (on).  
- PHASE ANGLE actuation.  
- SOFT START FROM 0 TO 100% 1 Sec.

- FUNCTION 4A:** Dip 1 (on), Dip 2 (on).  
- PHASE ANGLE preheating.  
- Preheating TIME 5 Sec.  
- SOFT START FROM 0 TO 100% 1 Sec.  
- After preheating, conversion to Zero Crossing with cycle (SSR) 500mS

