



### General purpose miniature controller

- Intel-51 compatible microcontroller in DIL20 socket.
- Atmel AT89S4051 ISP Flash-CPU with 4 kB of program code.
- CPU speed up to 24 MHz, normally 11.059200 MHz.
- 5V TTL serial port, standard 51-UART, pin connector.
- Tool-adjustable 4-pin DIP-switch for user parameters.
- Supply voltage up to 24 Vdc, DIN19240 or better.
- Optional voltage supervisor with active-high reset.
- 4 x 24V @ 9 mA PNP opto-inputs, yellow LED's.
- 4 x 24V @ 0,1/1,0A PNP isolated SSR outputs, red LED's.
- Two part Phoenix-type connectors, 10 x 3.81 mm.
- Typical operating environment 0...+50C.
- High quality SMD circuit board, UL, 56x56x17 mm, IP00.

### Typical stand-alone applications

- Low-priced C-programmable PLC's for simple serial products.
- Simple clock pulse generator for stepper motor applications.
- General purpose adjustable timer or precision time relay.
- Tester for various components like relays, pneumatics, etc.

### 12/24V Supply

1	GND	Common Ground
10	+Vcc	Supply, 12/24 V, 13 to 2000mA, Multifuse

- Normally 12/24 Vdc; range 10-30 Vdc, DIN19240 or better.
- Supply Current from 13 to 2000 mA, depends on loading.
- Self-recovering Multifuse onboard; cool down to autoreset.
- 33V 600W tranzorb onboard; protection for Vcc transients.

### 12/24V Inputs

2	X0	P1.0	PNP Input 24V @ 9 mA
3	X1	P1.1	PNP Input 24V @ 9 mA
4	X2	P1.2	PNP Input 24V @ 9 mA
5	X3	P1.3	PNP Input 24V @ 9 mA

- 4 x 24V PNP Optocoupler; cathode-pins connected to GND.
- 24 Vdc @ 9 mA; typical switch-on at 6.5 Vdc. EMC ferrites.
- Maximum signal input frequency typically 6 kHz.

### 12/24V Outputs

6	Y0	P1.4	PNP Output 24V @ 100 to 1000 mA
7	Y1	P1.5	PNP Output 24V @ 100 to 1000 mA
8	Y2	P1.6	PNP Output 24V @ 100 mA
9	Y3	P1.7	PNP Output 24V @ 100 mA

- 4 x 24V PNP outputs; isolated RF immune Solid State Relays.
- Common's connected to +24 Vcc. Fast circulation diodes.
- SSR's are mounted into IC-sockets for fast replacing.
- LAA110 Drives directly up to 24V 100mA signal loads.
- Optional SSR devices available according the next table:

SSR	Source	I <sub>max</sub>	R <sub>cha</sub>	P <sub>dsw</sub>	Usage
LAA110	Clare	120 mA	35R	0.50 W	Default 100mA
LAA710	Clare	1000 mA	0R5	0.50 W	High Current 1A
G3VM-61A1	Omron	500 mA	1R0	0.25 W	Medium 500mA

### 5V Serial Port

1	+5V	+5V	5V 10mA supply for interface
2	TxD	P3.1	Transmit Data, output
3	RxD	P3.0	Receive Data, input
4	GND	GND	Common Ground

- The 51's standard UART is connected to 0.1" solder pins.
- It is also possible to use these port pins as 5V TTL inputs.
- 5V CMOS levels, no pull-ups, 5V 10mA supply for interface.
- Needs an external interface card according the Com type.
- The application software defines the communication speed.
- Com speed up to 115200 Bd with 11.0592 MHz Xtal.

### DIP Switch

Dip1	2^1	P3.2	User Value x1
Dip2	2^2	P3.3	User Value x2
Dip4	2^4	P3.4	User Value x4
Dip8	2^8	P3.5	User Value x8

- Tool adjustable DIP-switch Sw1 for user parameters; 0 to 15.
- The application software defines the exact functional model.