P ɪ ᴄ B ʟ ᴏ ᴄ ᴋ   M C 2 8 A D - 1 6
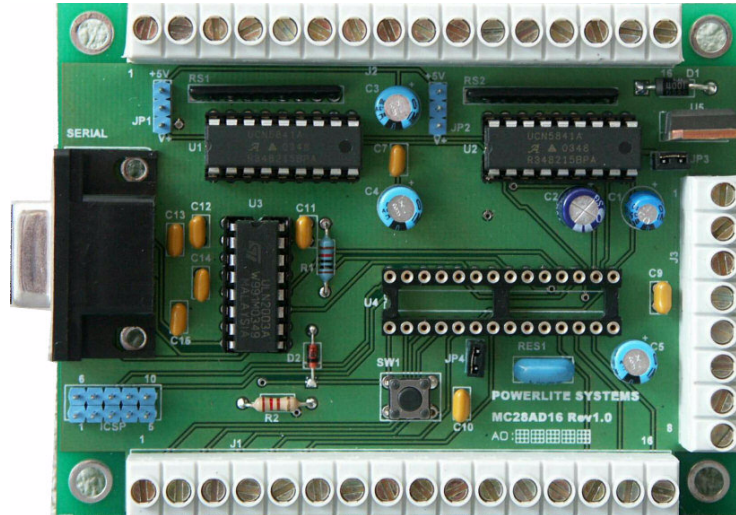
Unlike other products on the market, **PicBlocks** are high quality pre-assembled pcbs. Ideal for development of software, they are also designed to be included in systems as a finished product. With on-board power supply, versatile I/O capabilities and quality connectors, they are ideal compact replacements for PLCs in process control situations.

The MC28AD-16 is the latest addition to the PicBlock range and gives the user an unprecedented 32 I/O from a 28 pin pic chip. By utilising a pair of UCN5841 8-bit serial input latched drivers, 16 digital 500mA* open collector outputs are provided on J2 using only 4 of the pic chips I/O lines. Optional SIL resistor arrays can be added as pull-ups. Jumpers** alow these to be connected to either the on-board +5V or the pre-regulated applied voltage.

PortA***, PortB and RCO, RC1 and RC2 are all available directly on J1.

An In Circuit Serial Programming header is provided as is a 9-way RS232 connector for either serial comms or bootloading. An incoming reset line is included on the RS232 connector as is an on-board reset button.

The board includes a 7805 regulator and can be powered by up to 24V DC. The on-board 5V is available on J3 for powering external circuits. If preferred, an on-board link can be removed and the board powered by an existing external regulated 5V DC.

*   See Allegro UCN5841 datasheet available from our website
**   Each UCN5841 pull-up selection is independent
***   Except PortA.4

O/C output current sink max	500 ma
DC supply voltage range	9-24 or 5V DC regulated
On board resonator	4MHz
Dimensions	102x76x23 high
Mounting	4*4mms holes

Specifications are liable to change

In Circuit Programming Header

ICSP

RB7
RB6

0V

I/O connections

J1

RA0
RA1
RA2
RA3
RA5
RB0
RB1
RB2
RB3
RB4
RB5
RB7
RC0
RC1
RC2

U4   16f876

RA0   Vdd
RA1   MCLR
RA2
RA3   OSC1
RA5
RB0   OSC2
RB1
RB2   RA4
RB3   RC3
RB4   RC4
RB5   RC5
RB6   RC6
RB7   RC7
RC0
RC1   Vss
RC2   Vss

0V

+5V

R1
10K

0V 0V 0V 0V 0V 0V

C5 100uF
C4 100uF
C3 100uF
C9 100n
C7 100n
C2 100uF

D2
1N4148

C10
100n

MCLR
Reset

0V   0V

Y1   4MHz

0V

Open if external
5V is used

JP3

U5   78S05

OUT   GND   IN

0V

C1
10uF 35V

+5V

D1   1N4004

V+

Power

J3

V+ In
V- In
+5V
0V

0V

RC3   Clk
RC4   Data

RC5   Strobe
RA4   O/P Enable

U1   UCN5841A

Vee   O/P1
Clk   O/P2
SDin   O/P3
LGnd   O/P4
Vdd   O/P5
SDout O/P6
St   O/P7
OE   O/P8
Vee   K

U2   UCN5841A

Vee   O/P1
Clk   O/P2
SDin   O/P3
LGnd   O/P4
Vdd   O/P5
SDout O/P6
St   O/P7
OE   O/P8
Vee   K

JP4

Open if enable
control is required

0V 0V 0V

Open collector O/Ps

J2

+5V

C11
100n

C12
100n

Boot Loader and
Serial port

Serial

U3   MAX232A

Vdd   C1+
Vcc   C1-
       C2+
       C2-
T1out T1in
T2out T2in
R1in   R1out
R2in   R2out
Vee   Gnd

0V

C13
100n

C14
100n

RC6

RC7
MCLR

R2   100R

C15
100n

0V   0V   0V

+5V   V+

Output pullup
voltage select

JP1

JP2

RS1

RS2

OPTIONAL COMPONENTS

Com R1 R2 R3 R4 R5 R6 R7 R8

Com R1 R2 R3 R4 R5 R6 R7 R8

POWERLITE SYSTEMS   www.powerlitesystems.co.uk

mc28ad_16.sch   16 I/O PicBlock

| CREATED | 08/04/2004 | MODIFIED | 10/08/2004 | REV | 1.0 |
| ARTWORK | mc28ad_16 | CUSTOMER NO | PS2086 | | |