SYLVA CONTROL SYSTEMS

SC552ES - See Picture

The SC552ES is a complete application ready Extended BASIC language programmable controller with on the board real world interfaces, supporting both analog and discrete inputs and outputs. The ES controller also includes 3 serial communication ports. Two ports are configured as RS232. The third port is a RS485 for networking and long distance communications. The ES board has a memory complement of 128K static RAM and 128K of FLASH memory. These important features make the ES controller an ideal choice for demanding applications.

Applications:

- Machine Control
- Heating Ventilating and Cooling (HVAC)
- Energy Management
- Home Automation
- Commercial and Industrial Controls

Specifications:

System

- Philips 80C552 MCU (14.7456/22.1184 Mhz)
- 128K SRAM with lithium backup
- 128K FLASH
- 256 byte serial EEPROM
- Dallas real time clock
- 2 watchdog timer sources

Input/Output

- 10 5A Form A relay contacts
- 3 open collector outputs
- 16 12-24 Vdc opto-isolated inputs
- 8 10 bit analog inputs (0-5/1-5Vdc/4-20mA)
- 2 8 bit analog outputs (0-5Vdc)

Power

- 12Vdc @400mA (all outputs ON)

Communications

- 2 RS232 ports (full duplex)
- 1 RS485 port (half duplex)
- Philips I2C expansion bus

Physical

- 9" x 6" x 1"
- 0-50 degrees C operating

Features:

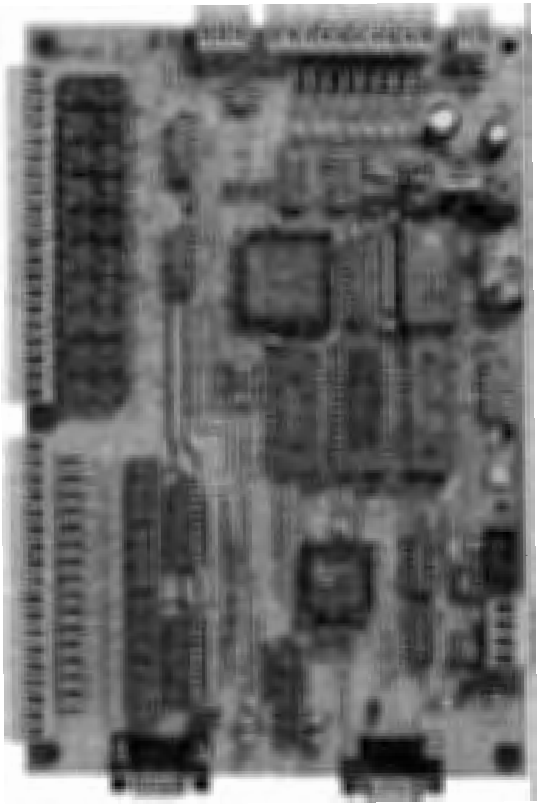
- FLASH memory program back-up
- Secondary watchdog timer
- LED indicators for all I/O and status
- Fully socketed with machined pin sockets
- Robust plug-on I/O connector system
- Complete programming manual
- Relay sockets available upon request

[CATALOG] [ORDERING INFO] [PRICES&COSTS] [CONTACT US]

[TECH SUPPORT] [WHAT'S NEW]

LastEdited 08/10/97 by William H Mogk of ***WHM Software***

SC552ES



Return to SC552ES

SYLVA CONTROL SYSTEMS

SC552EX - see Picture

The SC552EX is a complete application ready Extended BASIC language programmable controller with on the board real world interfaces, supporting both analog and discrete inputs and outputs. The EX board also includes a two way X10 communications controller for home automation. This additional MCU off loads the X10 communications burden from the 552 micro-controller. The single serial port can be configured as RS232 or RS485. The EX board has a memory complement of 128K static RAM and 128K of FLASH memory. These important features make the EX controller an ideal choice for demanding home automation applications.

Applications:

- Home Automation

Specifications:

System

- Philips 80C552 MCU (14.7456/22.1184 Mhz)
- 87C751 MCU masked for X10 communications
- 128K SRAM with lithium backup
- 128K FLASH
- 256 byte serial EEPROM
- Dallas real time clock
- 2 watchdog timer sources

Input/Output

- 10 5A Form A relay contacts
- 3 open collector outputs
- 16 12-24 VDC opto-isolated inputs
- 8 10 bit analog inputs (0-5/1-5Vdc/4-20mA)
- 2 8 bit analog outputs (0-5Vdc)

Power

- 12VDC @400mA (all outputs ON)

Communications

- RS232 port (full duplex) or RS485 port (half duplex)
- Philips I2C expansion bus

Physical

- 9" x 6" x 1"
- 0-50 degrees C operating

Features:

- FLASH memory program back-up
- Secondary watchdog timer
- LED indicators for all I/O and status

- Fully socketed with machined pin sockets
- Robust plug-on I/O connector system
- Secondary MCU (87C751) for X10 communications
- Direct connection to TX523 or TX513 modules

[CATALOG] [ORDERING INFO] [PRICES&COSTS] [CONTACT US]

[TECH SUPPORT] [WHAT'S NEW]

LastEdited 08/10/97 by William H Mogk of ***WHM Software***

SC552EX

Return to Sc552EX

SYLVA
CONTROL SYSTEMS

SC552S Controller - View Picture

The SC552S is a high performance controller engine for our I/O expansion products. the 552S has the same foot print as all the expansion boards. this allows the user to build-up a custom I/O configuration. A 4 x 4 keypad and a LCD display interface is also included. The single serial port can be configured for a high powered operator interface unit, all data input and output can be processed requiring only simple commands to be passed to a host computer.

Applications:

- Message display terminals with data input
- HVAC control systems
- energy management
- commercial and Industrial control
- Home Automation

Specifications:

System

- Philips 80C552 (22.1184 MHz)
- 128K SRAM with lithium backup
- 128K FLASH
- Dallas Semiconductor RTC
- 256 byte serial EEPROM
- Two watchdog timer sources

Input / Output

- 4x4 keypad interface via 16 pole header
- 1x16 to 4x40 LCD display interface via 16 pole header
- Expansion boards via I2C bus

Power

- 8 - 18 Vdc @ 120 mA

Communications

- 1 RS232 port (full duplex) or RS485 port (half duplex)
- Philips I2C expansion bus

Physical

- 4.5" x 4.5" x 1.0"
- 0-50 degrees C operating

Features:

- FLASH memory program back-up
- Secondary watchdog timer
- Fully socketed with machined pin sockets
- PWM control of LED back lighting
- Carrier detect on RS232 port

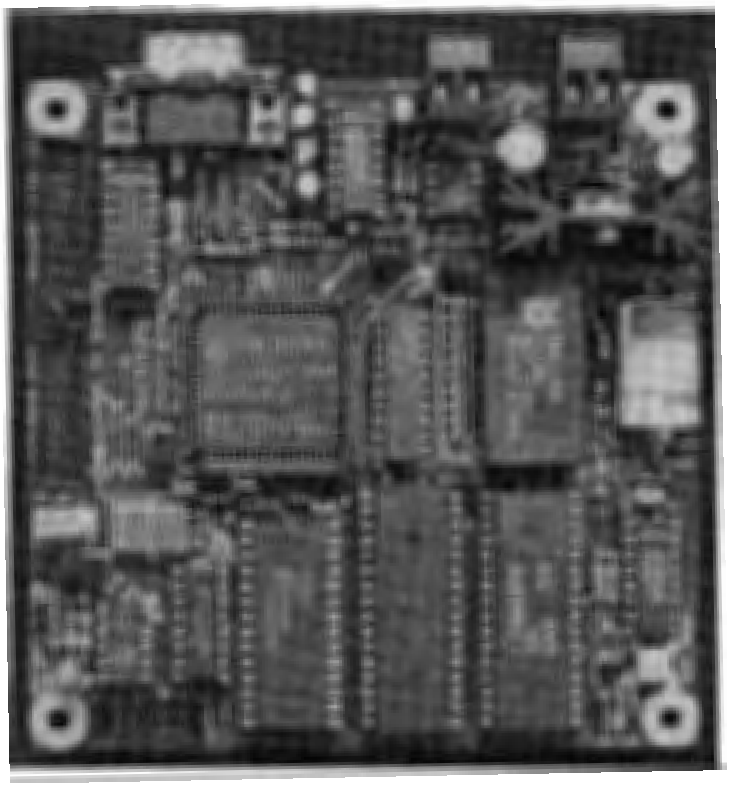
- Complete programming manual (disk supplied / printed optional)

[CATALOG] [ORDERING INFO] [PRICES&COSTS] [CONTACT US]

[TECH SUPPORT] [WHAT'S NEW]

LastEdited 08/10/97 by William H Mogk of ***WHM Software***

SC552S Controller



Back to SC552 Page

SYLVA
CONTROL SYSTEMS

SC552S16 - see Picture

The SC552S16 is a high performance controller with a 4x4 matrix keypad interface, a LCD display interface and discrete I/O. The S16 allows all of SYLVA's expansion boards to be stack mounted to it, to further expand it's I/O capabilities. A MCU bus expansion header connector is also included to further expand the controller with future high speed encoder/counter boards, general purpose logic I/O and additional serial communications. The S16 controller is the ideal controller for applications requiring operator input and display output. The S16 controller uses Sylva's BASIC with enhancements to support the keypad and LCD.

Applications:

- Machine/Process Controller
- HVAC control systems
- Energy management
- Commercial and Industrial control
- Home Automation

Specifications:

System

- Philips 80C552 MCU (22.1184 Mhz)
- 128K SRAM with lithium backup
- 128K FLASH
- 256 byte serial EEPROM
- Dallas real time clock
- 2 watchdog timer sources

Input/Output

- 4x4 matrix keypad interface
- 1x16 to 4x40 character LCD display interface
- 8 opto-isolated AC/DC LV inputs
- 8 5A relay outputs
- 1 opto-isolated high speed DC input
- Expansion boards via I2C bus

Power

- **12 VDC**

Communications

- 1 RS232 port (full duplex) or RS485 port (half duplex)
- Philips I2C expansion bus

Physical

- 4.5" x 8.6" x 1.0"
- 0-50 degrees C operating

Features:

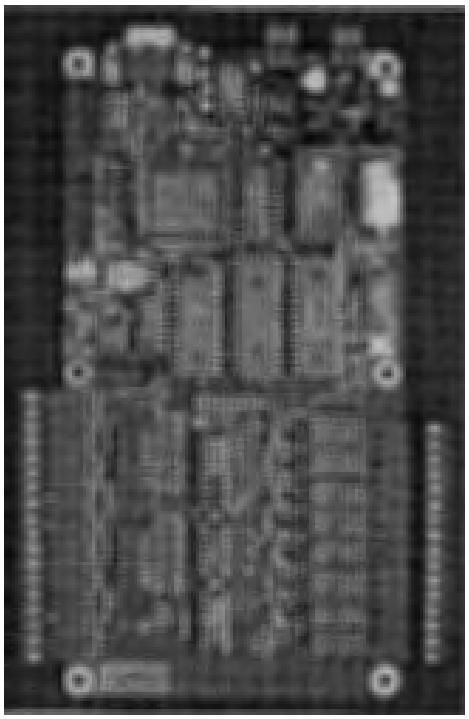
- FLASH memory program back-up
- Secondary watchdog timer
- Fully socketed with machined pin sockets
- PWM control of LED back lighting
- Carrier detect on RS232 port
- 1 high speed input
- MCU bus interface connection

[CATALOG] [ORDERING INFO] [PRICES&COSTS] [CONTACT US]

[TECH SUPPORT] [WHAT'S NEW]

LastEdited **08/10/97** by William H Mogk of ***WHM Software***

SC552



Return to SC552S16

SYLVA CONTROL SYSTEMS

SC552ES-P - see Picture

The SC552ES-P is a packaged version for our proven 552ES controller. In addition, the ES-P has a 32 character LCD display with back lighting and four user programmable front panel push buttons for operator input. A 2400 baud internal modem option is available for remote access applications. The ES-P includes a versatile analog input front end supporting a direct connection to1000 ohm RTDs. The ES-P controller will operate off 24 VAC or 24 VDC making it very suitable for HVAC applications.

Applications:

- HVAC control systems
- Energy management
- Commercial and Industrial control
- Home Automation

Specifications:

System

- Philips 80C552 MCU (14.7456/22.1184 Mhz)
- 128K SRAM with lithium backup
- 128K FLASH
- 256 byte serial EEPROM
- Dallas real time clock
- 2 watchdog timer sources

Input/Output

- 8 5A Form A relay contacts
- 8 12-24 volt AC/DC optoisolated inputs
- 8 10 bit analog inputs (1000ohm RTD,0-5/1-5Vdc,4-20mA)
- 4 8 bit analog outputs (0-10Vdc,0-20mA,4-20mA)

Power

- 24 VAC or 15-24 VDC

Display

- 32 character LCD with LED back lighting

Communications

- 2 RS232 ports (full duplex)
- 1 RS485 port (half duplex)
- Philips I2C expansion bus
- Optional 2400 baud Hayes compatible modem

Physical

- 9.5" x 6.2" x 3.5" poly-carbonate case
- 0-50 degrees C operating

Features:

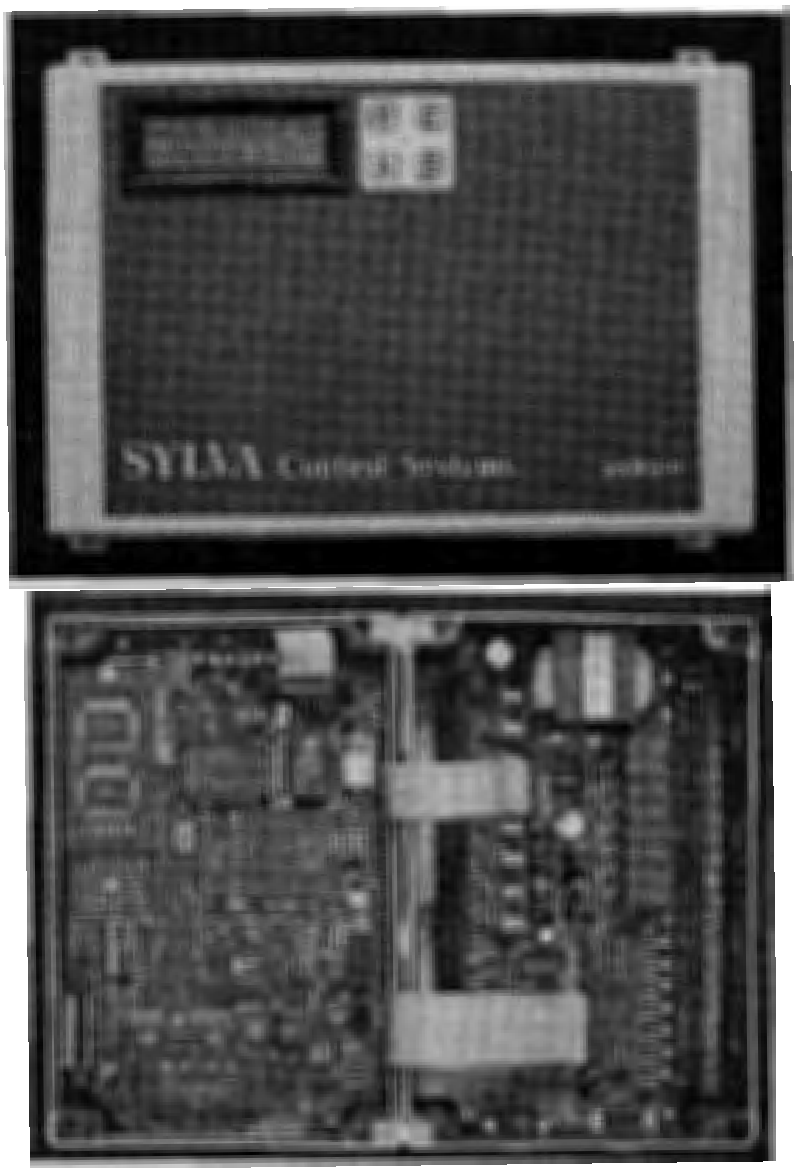
- FLASH memory program back-up
- Secondary watchdog timer
- LED indicators for all I/O and status
- Fully socketed with machined pin sockets
- Optional 2400 baud internal modem
- 32 character LCD display
- Relay sockets standard

[CATALOG] [ORDERING INFO] [PRICES&COSTS] [CONTACT US]

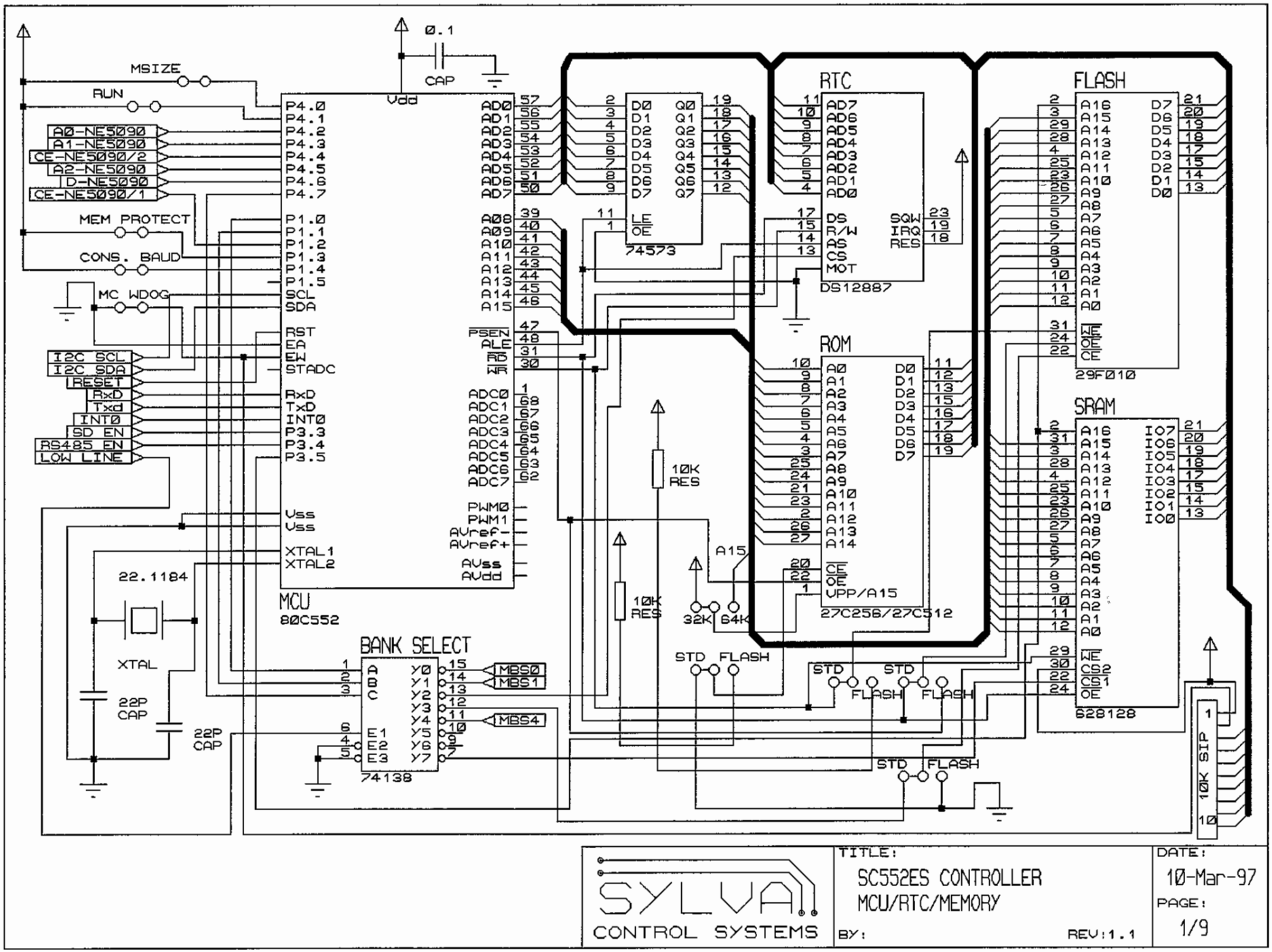
[TECH SUPPORT] [WHAT'S NEW]

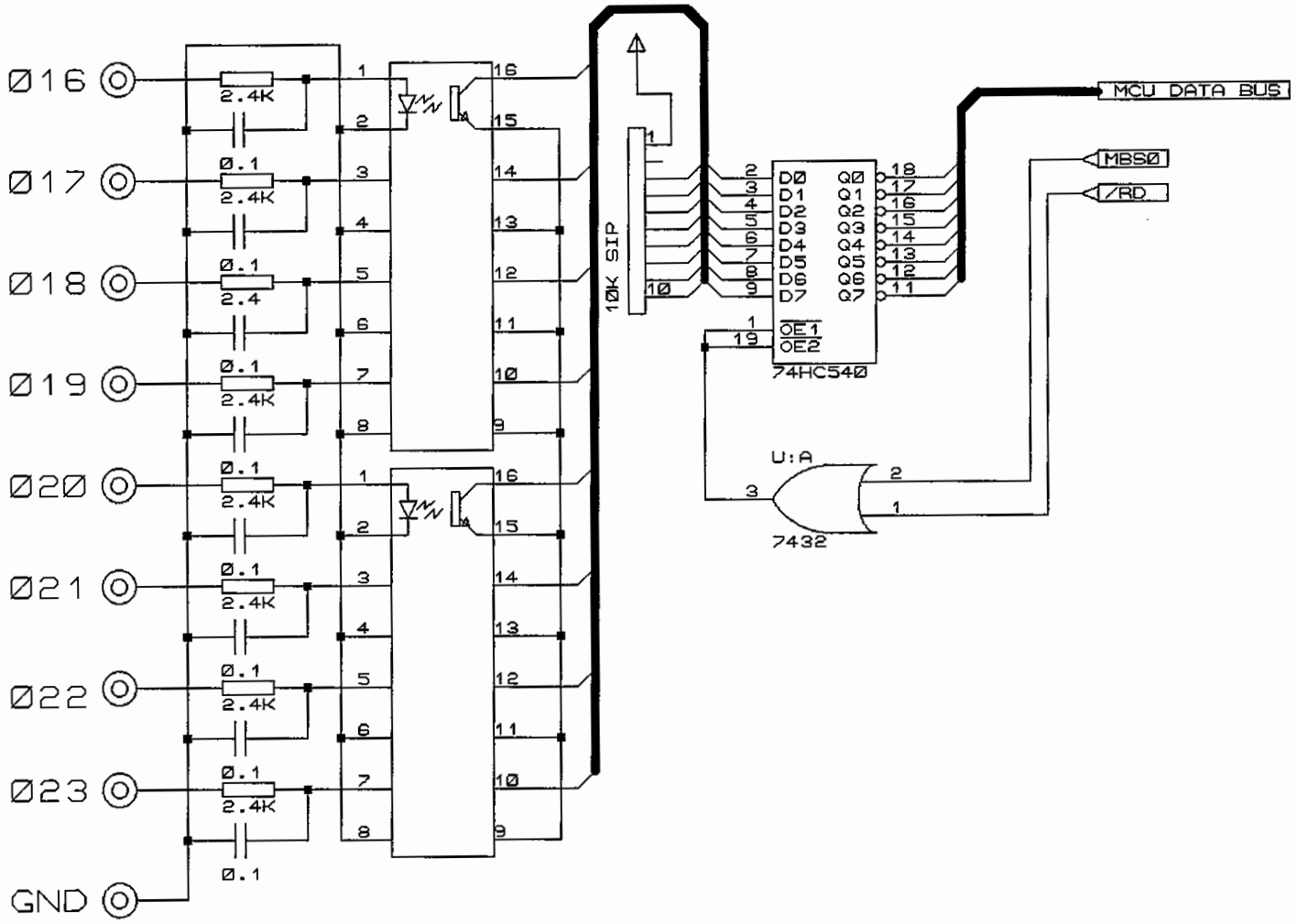
LastEdited 08/10/97 by William H Mogk of ***WHM Software***

SC552ES-P



Return to SC552ES-P


MSIZE
RUN
A0-NE5090
A1-NE5090
CE-NE5090/2
A2-NE5090
D-NE5090
CE-NE5090/1
MEM PROTECT
CONS. BAUD
MC WDOG
I2C SCL
I2C SDA
RESET
RxD
Txd
INT0
SD EN
RS485 EN
LOW LINE
0.1
CAP
Vdd
P4.0
P4.1
P4.2
P4.3
P4.4
P4.5
P4.6
P4.7
P1.0
P1.1
P1.2
P1.3
P1.4
P1.5
SCL
SDA
RST
EA
EW
STADC
RxD
TxD
INT0
P3.3
P3.4
P3.5
Vss
Vss
XTAL1
XTAL2
22.1184
XTAL
22P CAP
22P CAP
MCU
80C552
AD0
AD1
AD2
AD3
AD4
AD5
AD6
AD7
A08
A09
A10
A11
A12
A13
A14
A15
PSEN
ALE
RD
WR
ADC0
ADC1
ADC2
ADC3
ADC4
ADC5
ADC6
ADC7
PWM0
PWM1
AVref-
AVref+
AVss
AVdd
74573
LE
OE
RTC
DS12887
AD7
AD6
AD5
AD4
AD3
AD2
AD1
AD0
DS
R/W
AS
CS
MOT
SQW
IRQ
RES
ROM
27C256/27C512
A0
A1
A2
A3
A4
A5
A6
A7
A8
A9
A10
A11
A12
A13
A14
CE
OE
VPP/A15
D0
D1
D2
D3
D4
D5
D6
D7
10K RES
10K RES
A15
32K
64K
BANK SELECT
74138
MBS0
MBS1
MBS4
STD FLASH
FLASH
29F010
SRAM
628128
10K SIP
SYLVA
CONTROL SYSTEMS
TITLE:
SC552ES CONTROLLER
MCU/RTC/MEMORY
BY:
REV:1.1
DATE:
10-Mar-97
PAGE:
1/9



SYLVA CONTROL SYSTEMS

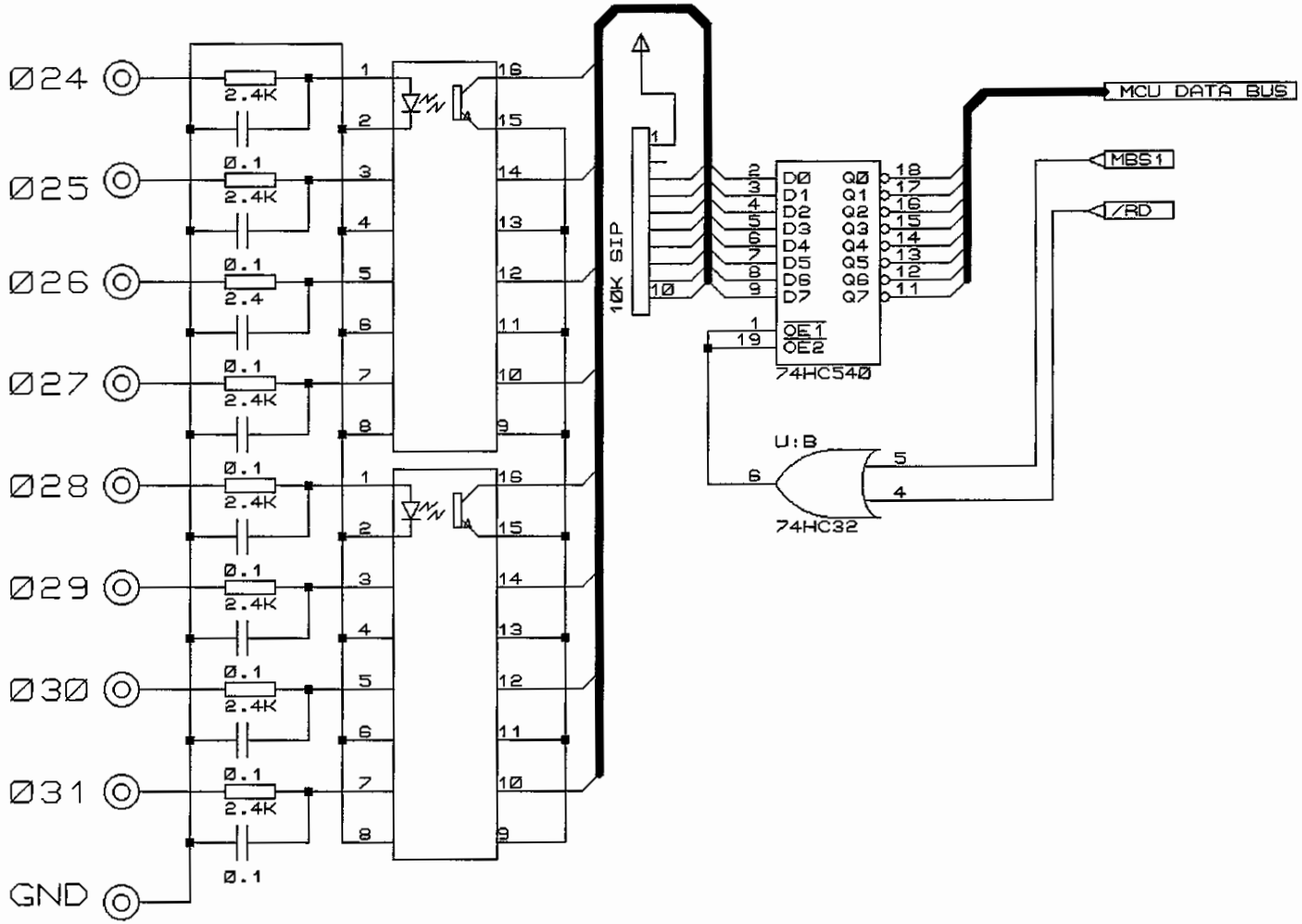
TITLE:
SC552ES CONTROLLER
DIGITAL INPUTS Ø24-Ø31

BY:

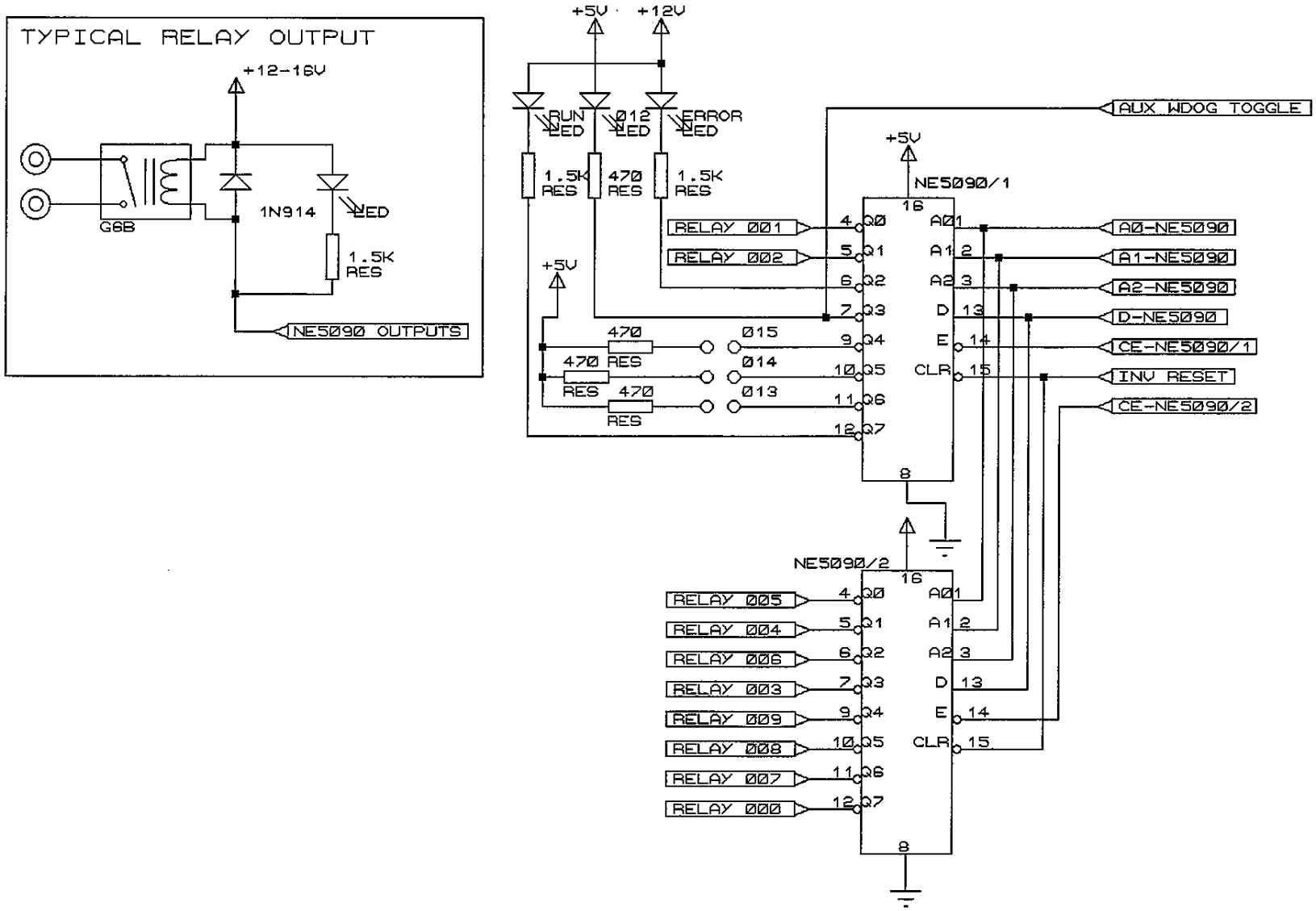
REV:1.0

DATE:
10-Mar-97

PAGE:
2/9



SYLVA CONTROL SYSTEMS	TITLE: SC552ES CONTROLLER DIGITAL INPUTS Ø24-Ø31	DATE: 10-Mar-97
	BY: REV:1.0	PAGE: 3/9



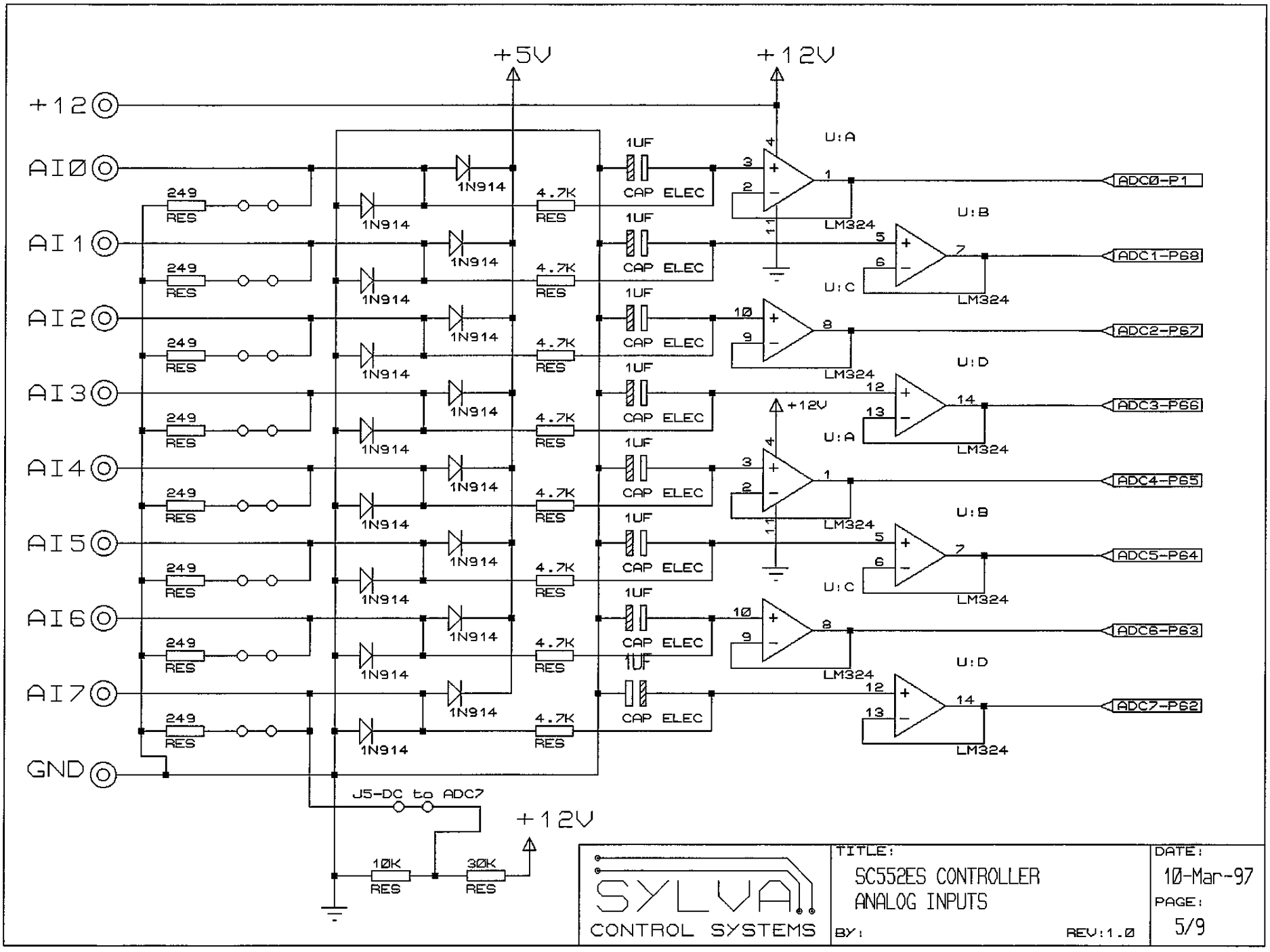
SYLVA CONTROL SYSTEMS

TITLE:
SC552ES CONTROLLER
NE5090 OUTPUTS

BY: LG REV:1.0

DATE:
10-Mar-97

PAGE:
4/9



SYLVA CONTROL SYSTEMS

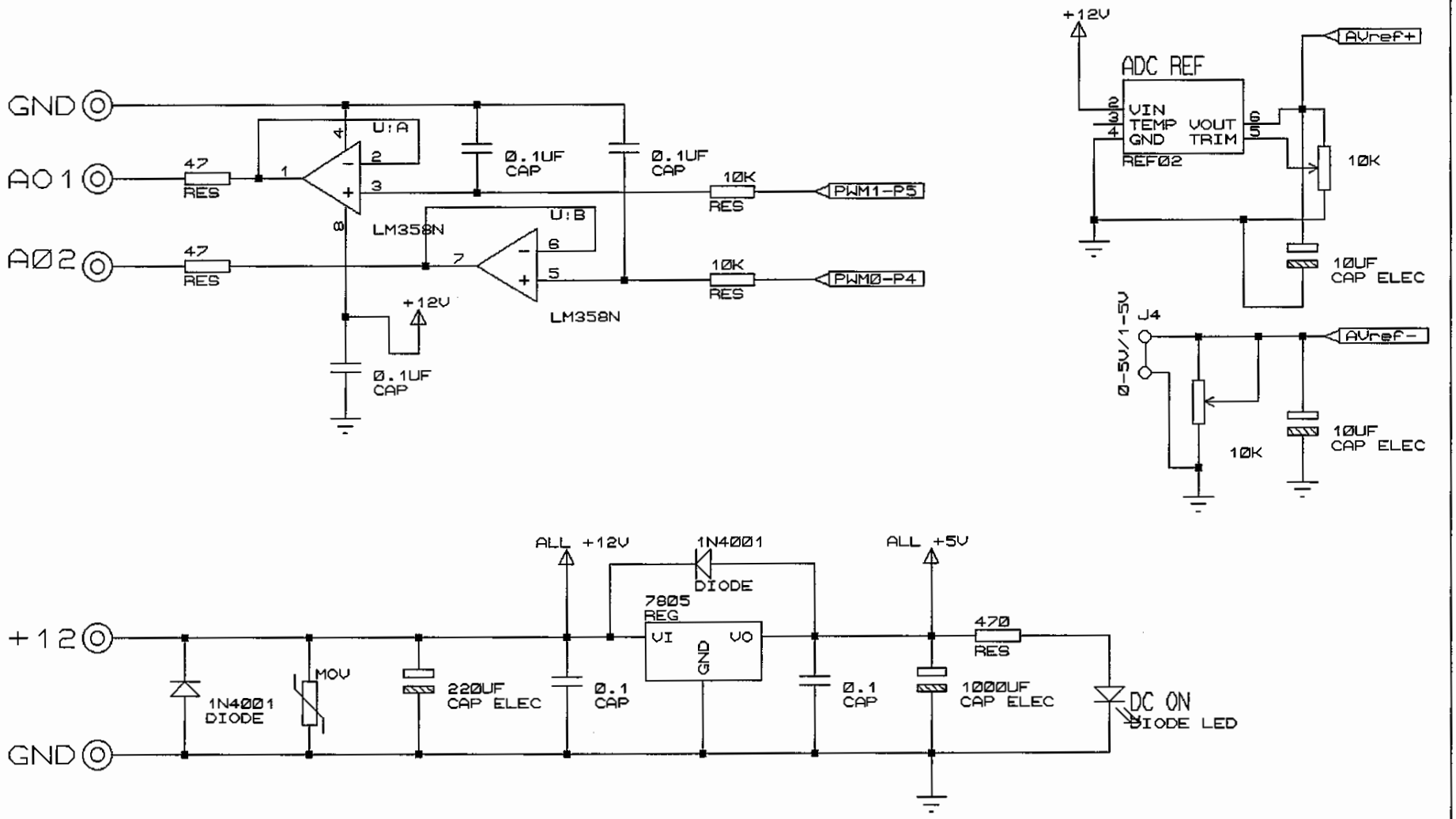
TITLE: SC552ES CONTROLLER ANALOG INPUTS

BY:

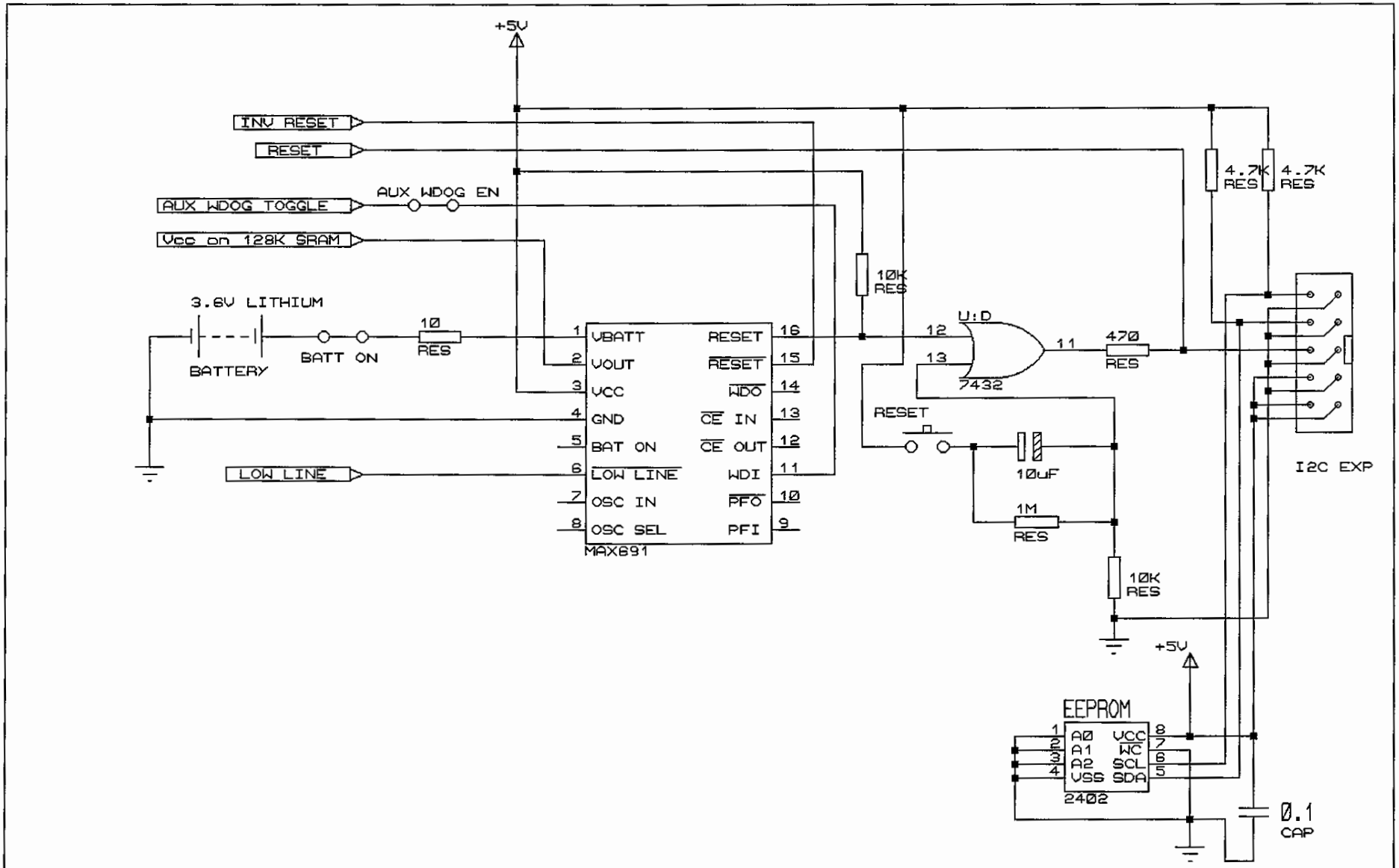
REV:1.0

DATE: 10-Mar-97

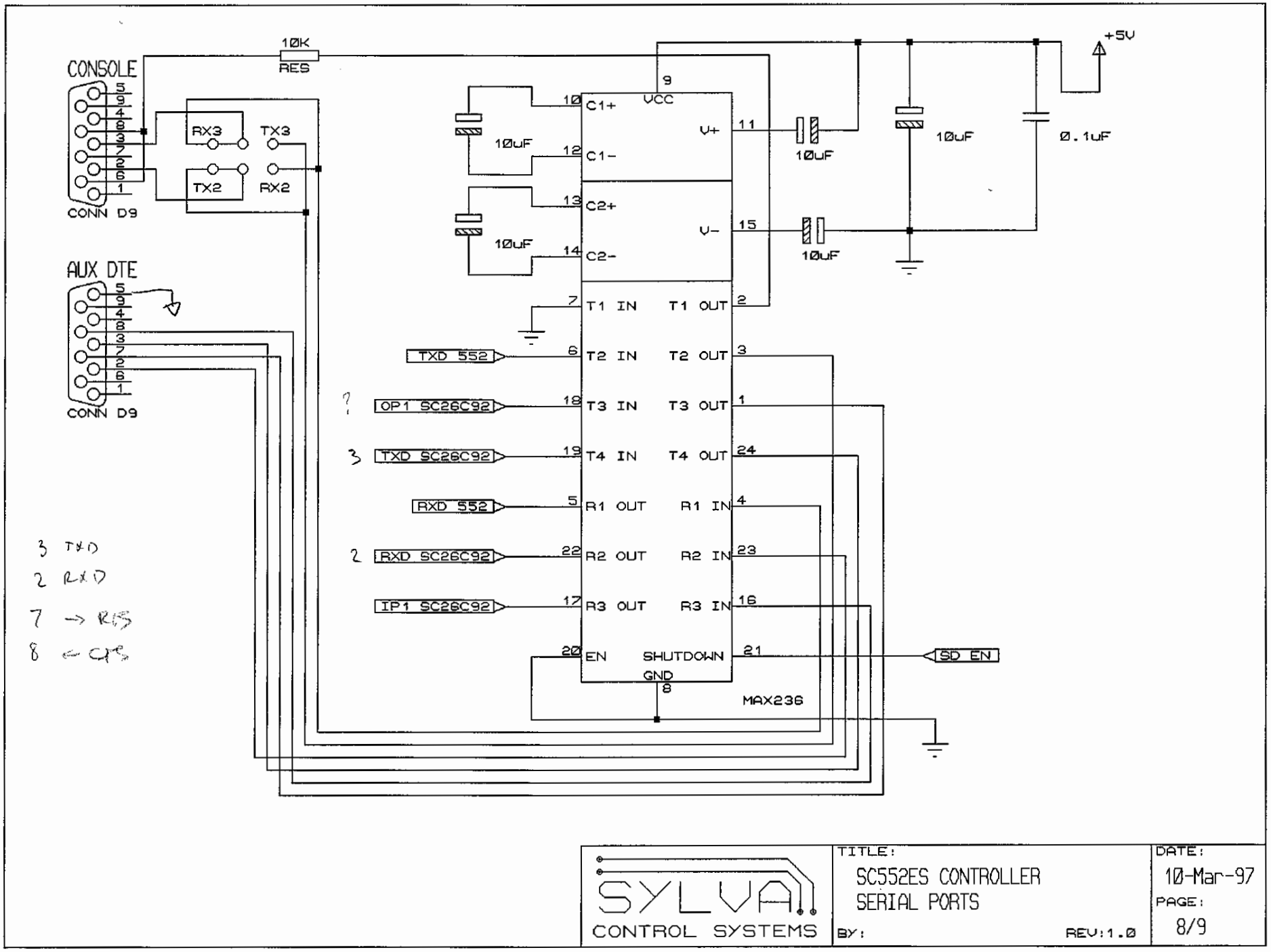
PAGE: 5/9



SYLVA CONTROL SYSTEMS	TITLE: SC552ES CONTROLLER ANALOG OUTPUTS/PS/VREF	DATE: 10-Mar-97
	BY: REV:1.0	PAGE: 6/9



SYLVA CONTROL SYSTEMS	TITLE: SC552ES CONTROLLER RESET / BATT BACKUP BY: REV:1.0	DATE: 10-Mar-97 PAGE: 7/9



SYLVA CONTROL SYSTEMS

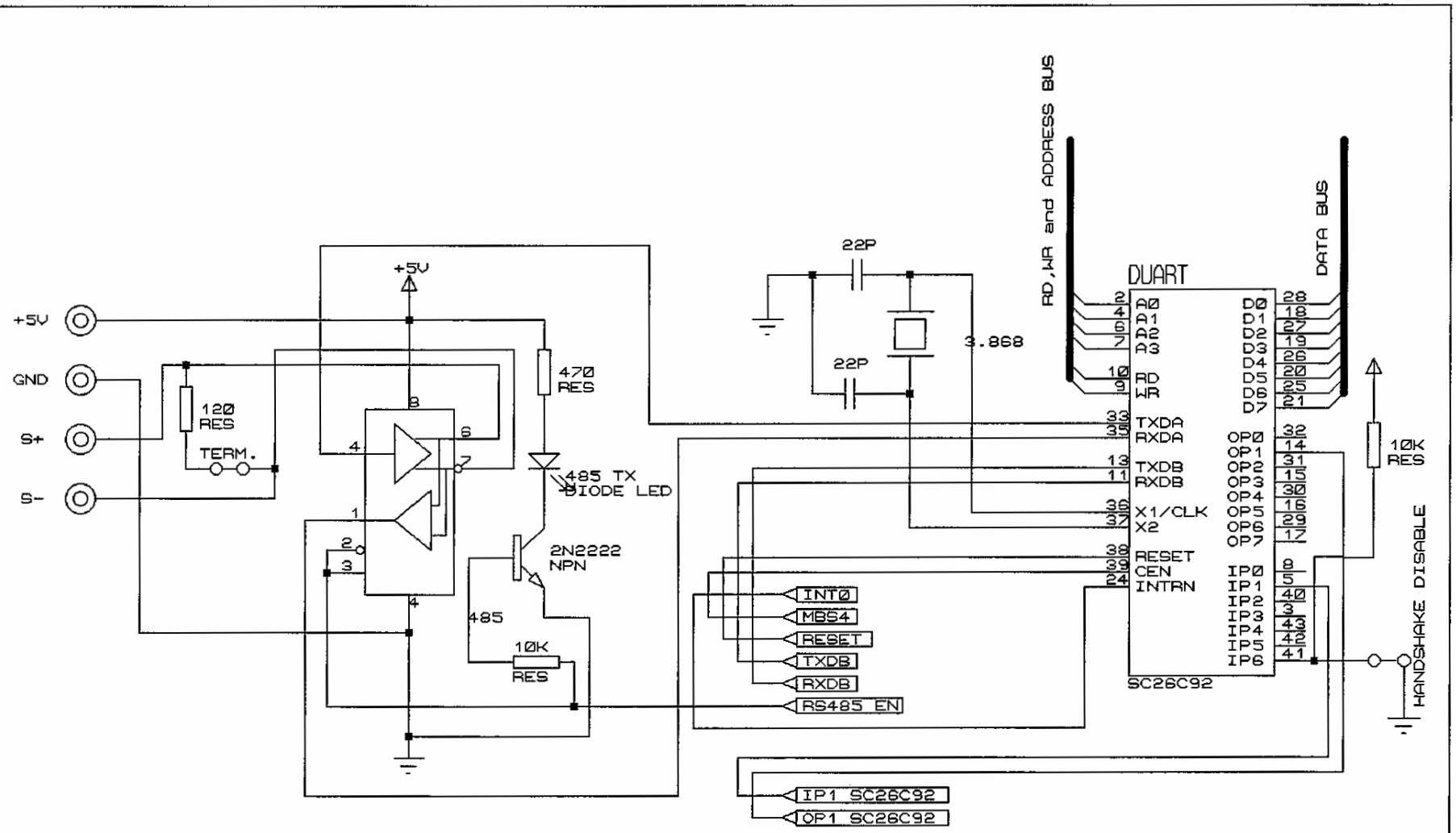
TITLE:
SC552ES CONTROLLER
SERIAL PORTS

BY:

REV:1.0

DATE:
10-Mar-97

PAGE:
8/9



SYLVA CONTROL SYSTEMS

TITLE:
SC552ES CONTROLLER
RS485 & DUART

BY:

REV:1.0

DATE:
10-Mar-97

PAGE:
9/9

BACTEST.BAS

```
10     REM TESTING PROGRAM FOR BAC552 CONTROLLER
11     REM
15     REM * For V2.1 with new serial buffer a CIC 1 must be included *
16     REM * before the RETI to turn the serial interrupt back ON *
17     REM
20     CLEAR R: CLEAR C: CLEAR D: CLEAR O: CLEAR B
30    DAC0=0:DAC1=0
40     ONTIME 10,3000: TIC 1
50     COMINT 5000: CIC 1
60     ONINT 0,4000: DIC 0,1
100    XIH 016: OTE 000
110    XIH 017: OTE 001
120    XIH 018: OTE 002
130    XIH 019: OTE 003
140    XIH 020: OTE 004
150    XIH 021: OTE 005
160    XIH 022: OTE 006
170    XIH 023: OTE 007
180    XIH 024: OTE 008
190    XIH 025: OTE 009
200    XIH 511: OST 000: CTU 000,005: CTR 000: GOSUB 1000
210    XIL 511: ROS 000
230    XIH 510: OST 001: GOSUB 2000
240    XIL 510: ROS 001
250    IF PORT0=0 THEN  ROS 002
260    IF PORT0>0 THEN  OST 002: PRINT F(###),"PORT 0 = ",PORT0
270    IF PORT1=0 THEN  ROS 003
280    IF PORT1>0 THEN  OST 003: PRINT F(###),"PORT 1 = ",PORT1
290    DLY 000,002: OTL 012: DLY 001,002: OTU 012: RST 000: RST 001
300    XIH 026: OST 004: PRINT "TIME = ";: TIME ;: PRINT "   DATE = ";: DATE
310    XIL 026: ROS 004
400    LIO : OTC : GOTO 100
1000   REM PRINT ANALOGS HERE
1005   PRINT
1010   PRINT F(#.#),"CHANNEL 0 = ",(ADC0*.00488)
1020   PRINT F(#.##),"CHANNEL 1 = ",(ADC1*.00488)
1030   PRINT F(#.###),"CHANNEL 2 = ",(ADC2*.00488)
1040   PRINT F(#.####),"CHANNEL 3 = ",(ADC3*.00488)
1050   PRINT "CHANNEL 4 = ",(ADC4*.00488)
1060   PRINT "CHANNEL 5 = ",(ADC5*.00488)
1070   PRINT "CHANNEL 6 = ",(ADC6*.00488)
1080   PRINT "CHANNEL 7 = ",(ADC7*.00488)
1099   RETURN
1100   REM READ X10 DATA ON POWER LINE
1110   PLR 030
1120   XPL A,02,00: OTU 001
1130   XPL A,02,01: OTL 001
1140   RETURN
2000   REM DAC OUTPUTS
2010  DAC0=DAC0+1: IF DAC0=255 THEN DAC0=0
2020  DAC1=DAC1+1: IF DAC1=255 THEN DAC1=0
2025   GOSUB 1100
2030   RETURN
3000   REM ONTIMER
3010   PRINT : PRINT "ON TIME INTERRUPT EVERY 10 SECONDS": PRINT
3020   TIC 1
3030   RETI
4000   PRINT : PRINT "ONE OF THE EIGHT DISCRETE INTERRUPTS": PRINT
4010   DIC 0,1
4020   RETI
```

```
5000   REM COM INTERRUPT
5010  A=INKEY
5015   IF A=3 THEN STOP
5020   IF A=ASC(A) THEN  OTL 000
5030   IF A=ASC(B) THEN  OTU 000
5040   XSB "ON": PLW A,01,01
5050   XSB "OFF": PLW A,01,00
5060   CIC 1
5090   RETI
```