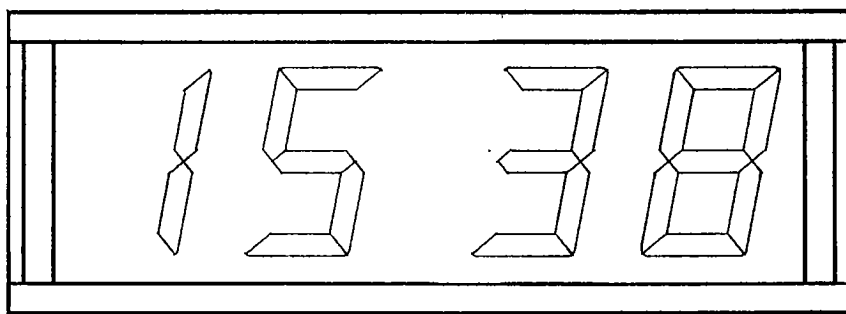
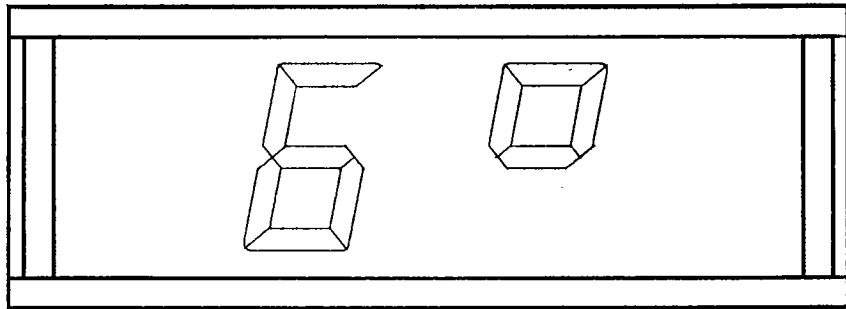


# TIME/TEMPERATURE DISPLAY BOARD



ALGE

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\*\*\*\*\*  
 G E N E R A L  
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The Time-Temperature display consists of:

ALGE display board (four digits)  
 ALGE power supply NG20  
 ALGE Comet with Time-Temperature software  
 ALGE temperature sensor  
 ALGE cable 030 (cable from the display board to NG20)

SET-UP OF THE TIME-TEMPERATURE DISPLAY BOARD:  
 =====

You can build the display board into the facade or you can set it up on top of a wall of a house (we deliver it for your need).

The Comet terminal should be covered at a place closed to the display board (within 30 Meters).

Closed to the Comet should be a 220 (110) Volt outlet, where you can plug the power supply NG20. The Comet, display board, and temperature sensor is powered by the power supply NG20.

You have to set up the temperature sensor on a shade. It should show always the real temperature. If you mount the sensor at a place, where the sun shines on it, the case will get warm, and it shows a wrong temperature. Further you have to mount the sensor at a place, where the air can move.

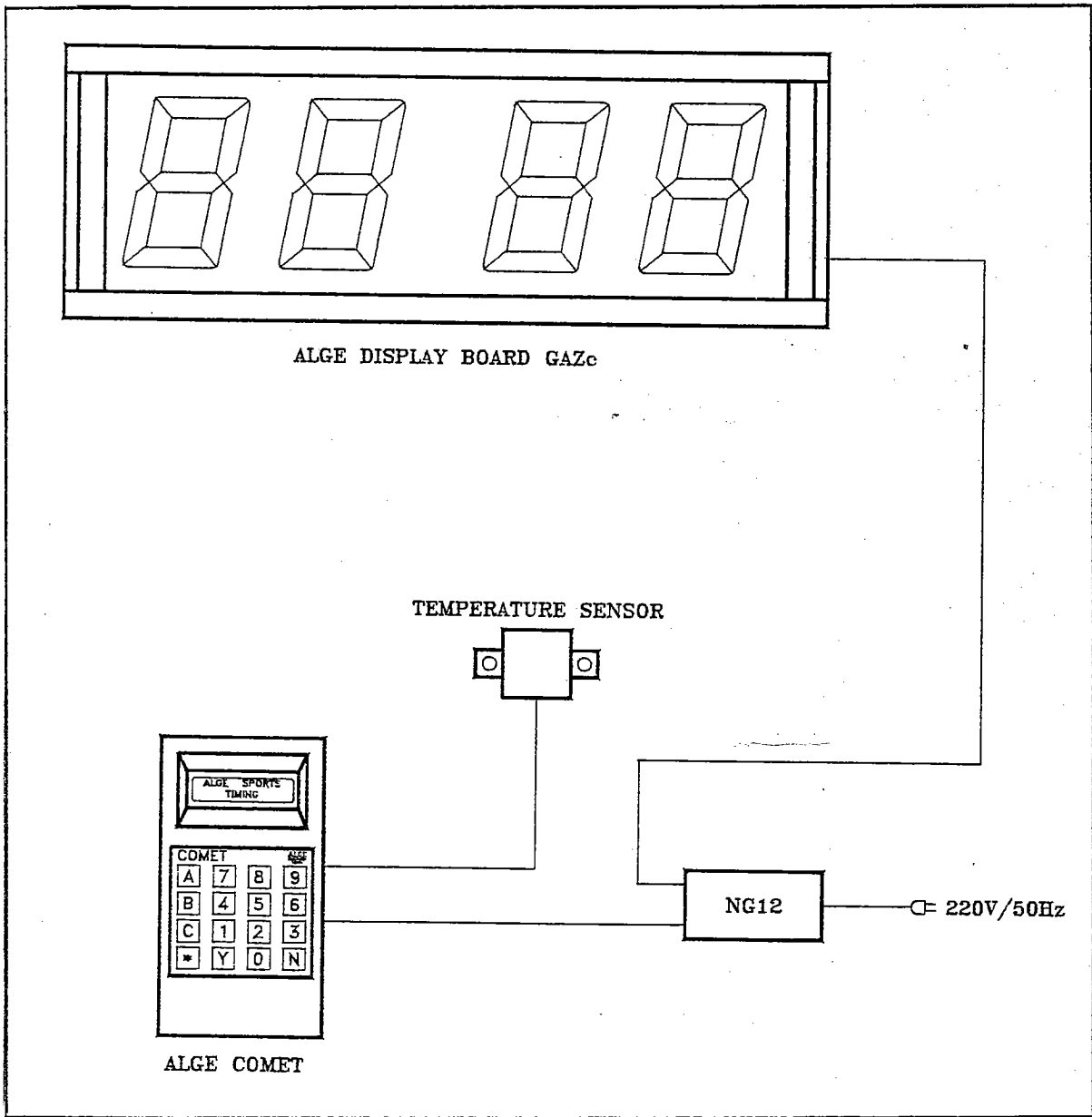
POWER SUPPLY:  
 =====

The display board, the Comet, and the temperature sensor is supplied by the power supply NG20/12, which you have to plug at a 220 V (110 V) outlet. The Comet has NiCd batteries (rechargeable). This means that no data go lost in case of a power failure (with completely recharged batteries it will keep the correct time and temperature for 12 hours by the Comet).

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TIME/TEMPERATURE SET UP

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ADJUSTMENT OF THE TIME-TEMPERTURE DISPLAY BOARD

=====

- Turn the Comet with the switch on the right side on.
- Wait until it shows on the display ALGE, date, temperature, and time.
- Press key "N" (NEW)
- The display shows now:

```
ALGE NEW IMPUT
SELECT      Y/N?
```

If you want to input the time and temperature new press key "Y" (YES).

- Now the display shwos:

```
ALGE NEW IMPUT
TIME      #8:00:15
```

- You can input the time with the keyboard of the Comet (attention: it shows the time with 24 hours, e.g. 10 p.m. is 22:00).
- When you input the time correct press "\*" to confirm the time. Now the time starts to run.
- The display shows:

```
ALGE DD/MM/YY
DATE  #9/08/89
```

- Input the date with the keyboard of the Comet (day, month and year).
- Confirm the date with the "\*" key.
- The display shows now:

```
ALGE DD/MM/YY
CELSIUS Y/N?
```

- Now you can input the temperature in degrees Celsius or Fahrenheit. You have to answer the question "CELSIUS" with "Y" or "N".

- e.g. if you want to input the temperature in degrees Celsius you have to press the "Y" (YES) key. The display shows:

ALGE	DD/MM/YY
TEMP.	+#20.0C

- You can change with key "N" the temperature from the positive to the negativ teperature rage. With the numbers of the keyboard you can input the temperature.
- The display shows e.g.

ALGE	29/08/89
+ 20.1C	09:23:35

- All datas are entered. The display board shows alternating for five seconds the time and the temperature.

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TECHNICAL DATA OF THE DISPLAY BOARD

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CONTROL UNIT:  
 Microprocessor technologie (80C31) in CMOS technologie.

DISPLAY MODULES:  
 Bi-stable electromagnetic 7-segment modules, phosphorescent yellow segments, black casing, low power consumption, high visibility, best reliability.

TIME BASIS:  
 Quarzoszillator with 4.608 MHz.

POWER CONSUMPTION:  
 Stand by current: 10 mA  
 Max. consumption during position change (every second, if clock runs)

size	max. current	impulse time
150 mm	123 mA	120 ms
250 mm	360 mA	120 ms
450 mm	360 mA	150 ms

CONNECTIONS:  
 Amphenol plug:  
 1 ... +11 to 22 Volts  
 2 ... 0 Volt  
 3 ... no connection  
 E ... Data

POWER SUPPLY:  
 external with 20 VDC from power supply NG20.

TEMPERATURE RANGE:  
 -25° to 50° Celsius

DISPLAY BOARD INTERFACE:  
 Signal compatible to RS 232c interface, serial, no handshake  
 2400 baud

1 start bit  
 8 data ASCII bit  
 1 stop bit  
 no parity bit

=====  
TECHNICAL DATAS OF THE COMET  
=====

MEASURING RANGE:  
23 h 59 min. 59,999 sec.

ACCURACY:  
+/- 0,005 sec./h at 20° Celsius  
+/- 0,05 sec./h at -15° to 50° Celsius

QUARTZ FREQUENCY:  
9,216 MHz

WORKING TEMPERATURE:  
-20° to 45° Celsius

OPERATING KEYS:  
foil-keyboard with 16 keys

DISPLAY:  
2 x 16 sign display

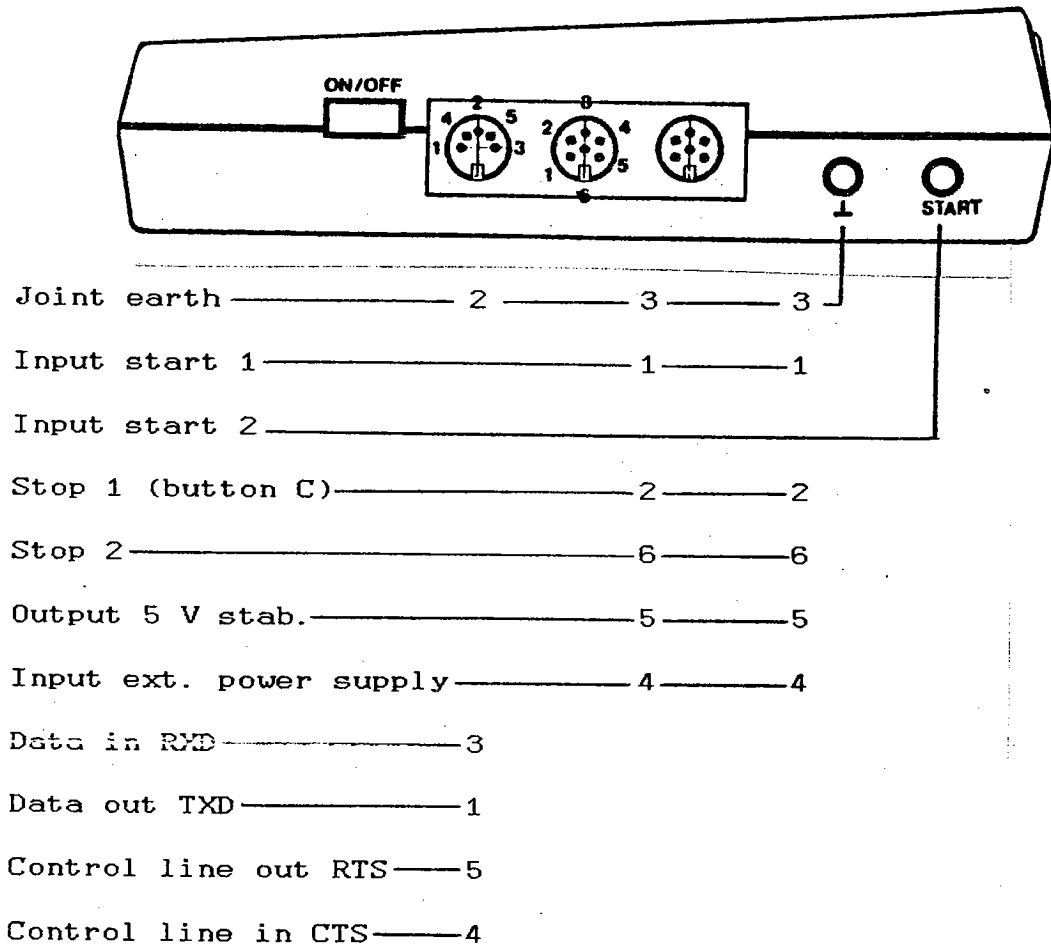
POWER SUPPLY:  
4 NiCd rechargeables (charging time at about 9 hours)

EXTERNAL SUPPLY:  
wit 20 Volts from the power supply NG20 (use cable\_030)

POWER CONSUMPTION:  
27 to 33 mA (with internal power supply)



CONNECTION SYSTEM:  
 =====



SERIELLE SCHNITTSTELLE:

=====

Asynchronous serial communication interface, compatible to V24 and RS 232.

Voltage level: Comet output +/- 5 Volts  
 allowable input level +/- 12 Volts

Transfer format: 1 start bit  
 8 data bit  
 1 stop bit  
 no parity bit

Handshake: hardware handshake (connect RTS and CTS, if handshake is not necessary)

X-ON/X-OFF handshake (as an option)

Transfer rate: 2400 baud standard

Data format: 23 byte data, LF, CR

Data ... 8 bit ASCII (MSB always one)  
 LF ..... Line Feed (0A hexadecimal)  
 CR ..... Carriage Return (0D hexadecimal)

Interface description and format:

1	TDX	Transmit Data	output	
2	GND	Ground		
3	RXD	Recive Data	input	
4	CTS	Clear to Send	input	periphery ready to send
5	RTS	Request to Send	output	Comet ready to receive
6	6	Startkanal 1	in-/output	Startline for stopwatch
7	6-15VDC	Power Supply	input	
8		not connected		

INPUT OF TIME AND DATE FOR THE  
TIME/TEMP-DISPLAYBOARD  
WITH THE COMET

**Program: TT Date/Time**

Please connect the Comet with the cable 030 to the time/temperature-displayboard and switch it on.

When it appears on the Display „Time = 00:00“ and „Date“ then press the key „N“. Now input the daytime, i.e. „09:30“ for 9.30h.

Confirm with „\*“ key and afterwards input the date, i.e. „97-01-15“ for 15<sup>th</sup> January 1997. Confirm with „\*“ key.

If the cursor disappears from the display, the data have been transmitted to the Time/Temp-displayboard. If you make anything wrong there will be a short peep-tone!

Switch off the Comet and remove the cable 030!