

## **Nexus Weather Station**

( Kat. Nr. 35.1075 ) **Instruction Manual** 

31

KSPO:0344-16(TFA) TFA TE922&TS34C&TS808&TS906 MANUAL 2(Eng) Size: W148 X H210(mm) Material: 80 LBS WF-PAP Printing Color: BLACK (双面印刷) BY Lai H Z 29/04/16 Rev.2

Congratulations on your purchase of the "Nexus" Weather Station. The weather station consists of a main console unit, as well as an assortment of remote sensors which collect and transmit a wide range of weather data, including outdoor temperature, humidity, wind speed and direction, rain amount and rain rate

### Before you use it

Please be sure to read the instruction manual carefully. This information will help you to familiarise yourself with your new device, learn all of its functions and parts, find out important details about its first use and how to operate it, and get advice in the

Following the instruction manual for use will prevent damage to the device and loss of your statutory rights arising from defects due to incorrect use. We shall not be liable for any damage occurring as a result of not following these instructions.

Likewise, we take no responsibility for any incorrect readings and for any consequences which may result from them. Please take particular note of the safety advice!

Please keep this manual for future reference.

### For your safety:

- should only be used as described within these instructions. - Unauthorised repairs, modifications or changes to the product are prohibited.
- The product is not to be used for medical purpose or for public information, but is intended solely for home use.
- The product is exclusively intended for the field of application described above. The product

Caution!

Risk of injury:

- Keep this instrument and the batteries out of reach of children. - Batteries must not be thrown into the fire, short-circuited, taken apart or recharged. Risk of
- Batteries contain harmful acids. Low batteries should be changed as soon as possible to prevent damage caused by a leaking battery. Never use a combination of old and new batteries together or batteries of different types. Wear chemical-resistant protective gloves and glasses when handling leaked batteries.

32

- Important information on product safety! - Do not expose the instrument to extreme temperatures, vibration or shock. - Protect the base unit from moisture.
- The outdoor thermo-hygro-transmitter is protected against splash water, but is not watertight. Choose a shady and dry position for the transmitter.

The main console unit features a radio-controlled precision clock with alarm and weather forecast.

**Main Console Unit** 

It measures indoor temperature and humidity, and displays weather data collected by the remote weather sensors. It also provides indication of the indoor/outdoor temperature, pressure and humidity trends, and celestial information such as moon phase, and sunrise/set times The main console unit stores around 3300 weather records without a computer connection. When linked to a computer using the USB cable and software provided, an unlimited number of weather records can be displayed and saved onto the computer. **Remote Weather Sensors** 

sensor. All data collected by the sensors is transmitted to the main console unit by wireless RF (433.92Mhz). The weather station supports a maximum of 5 thermo-hygrometers, allowing 5 channels of temperature/humidity display. **Features** 

The remote weather sensors include a thermo-hygrometer, anemometer (wind sensor) and rain

# **Weather Forecast**

- Sunny, Partly Cloudy, Cloudy, Slight Rain, Heavy Rain, Snow and Unstable Weather conditions
- Current or historical pressure (mBar/ hPa, mmHg or inHg)
- Altitude or sea level pressure adjustment for atmospheric pressure compensation - Pressure trend indication - Sea-level pressure history for the last 24 days
- Sea-level pressure history bar chart Moon phase
- Moon phase history for the last or future 39 days

- Scans moon phase for year 2000 to 2099

**Radio Controlled Clock** - Time and date synchronized by radio signal DCF-77 to atomic clock precision (time and date also manually adjustable)

- 12 steps of moon symbols

Clock and Calendar (12hr/ 24 hr) (month/day or day/month) - Different combinations of clock and calendar displays

- 6 languages for day of week (English/ German/ French/ Italian/ Spanish/ Dutch)

33

- **Alarms** - **Single alarm**: activated once at specified time - Weekday alarm: activated everyday from Monday to Friday at specified time
- Programmable snooze function (1-15 minutes) Sunrise time and sunset time

- **Pre-alarm**: activated ahead of single or weekday alarm if channel 1 temperature falling to +2°C

- Calculates sunrise/set times with geographical information provided by user (DST, zone time

# offset, latitude, longitude)

or below. (Fixed 30 minutes)

- over 133 preset cities can be selected for automatic geographical information input
- Remote temperate and relative humidity, with trend indication - Indoor and outdoor temperature and relative humidity display (°C or °F) - Temperature and relative humidity trend indication

### - Dew point display - Max and Min memory for temperature and relative humidity

### **Comfort level indicator** - Analyzes current environmental conditions (Comfort, Wet and Dry) Rainfall measurement

- Records rainfall amount for the last hour, last 24 hours, last day, last week and last month (inch or - Daily rainfall alert if rainfall for the current day exceed pre-specified amount.

### - Temperature at place of anemometer. - Temperature adjusted to wind chill factor. (°C or °F)

- Wind direction compass display. Wind direction angles available as compass points or bearings. - Average wind speed and gust speed (mph, m/s, knots, and km/h) - Daily Maximum wind speed and gust speed memory. - Wind speed alert for average wind speed and wind gust speed.
- Stores 3000 weather records (without a computer connection) with memory saving intervals (1 hr default). - Interval: 5 Min., 10 Min., 20 Min., 30 Min., 1 Std., 11/2 Std., 2 Std., 3 Std., 4 Std., 6 Std., 24 Std. - USB port for connection to computer to allow upload of weather records.

**Memory Functions** 

- Light sensor to automatically toggle backlight when environment lighting level is low. Can be turned on/off or set to automatic. (Should be used with AC/DC adaptor for automatic control
- Other Features - Foldable table stand for mounting display on a table or wall

34

**Contents of Complete Weather Station Kit** 

**Hardware Components** Fittings

Before installing your weather station, please check that the following are complete:

Main 0	Console Unit AC/DC 7.5V output adaptor USB
Therm	no-Hygro Sensor
- Funn Batte - Sens - Buck - saw	Sensor: del shaped Lid with ery Hatch or Base exet See Mechanism ective Screen  4 screws for securing unit to ground
Sensor - Wind - Wind - Aner	d Cups
	2m (6ft) USB cable

35

# When placing the sensors, make sure that they are within receiving range of the console unit. Ideally

**Installing your weather station** 

**Setting up the Remote Weather Sensors** 

they should be within the line of sight of the console unit. Transmission range may be affected by trees, metal structures and electronic appliances. Test reception before permanently mounting your weather station.

Before starting up the main console unit, setup all the remote sensors first.

Also make sure that the sensors are easily accessible for cleaning and maintenance. The remote sensors should be cleaned on a weekly basis, since dirt and debris will affect sensor

**Setting up the Thermo-Hygro Sensor(s)** 1. Open the latch at the base of the thermo-hygro sensor. 2. Set the channel with a slide switch. 3. Insert 2 x "AA" size 1.5V batteries.

- 4. Use a pin to press the "RESET" key which is in the battery compartment of thermo-hygrometer 5. Replace the latch and mount unit at desired location.
- The thermo-hygrometer sensor should be in an area with free air circulation and sheltered from direct sunlight and other extreme weather conditions. Place the unit in a shaded area, such as - Use the wall mount and fittings provided if mounting the unit on a vertical surface.
- Avoid placing the sensor near sources of heat such as chimneys. - Avoid any areas which collect and radiate heat in the sun, such as metal, brick or concrete structures, paving, patios and decks.
- Ideally, place the sensor above natural surfaces such as a grassy lawn. - The international standard height for measurements of air temperature is at 1.25m (4 ft) above ground level.
- **Setting up the Rain Sensor** 1. Unlock the funnel-shaped top of the rain sensor by turning both knobs on the sides of the rain
- sensor in an anti-clockwise direction. 2. Lift the top off the base and insert 2 x "AA" size 1.5V batteries into the battery holder. 3. Replace the lid and secure into place by turning the knobs clockwise. 4. Place the rain sensor in a location such that precipitation can fall directly into the sensor, ideally
- 2-3 ft above the ground. It may be secured into place by using the four screws provided. 5. The sensor must be accurately level for optimum performance. To check if the sensor is level,
- remove the lid and check if the ball bearing inside is at the midpoint of the leveler. Additionally, a bubble level or carpenter's level may be used. 6. Attach the protective screen onto the top of the lid. The screen will prevent any debris entering the sensor.
- **Placement tips:** - The rain sensor should be placed in an open area away from walls, fences, trees and other coverings which may either reduce the amount of rainfall into the sensor, deflect the entry of
- 36

four times the height of any nearby obstruction. It is important that rain excess can flow freely away from the sensor. Make sure that water does not collect at the base of the unit. - The rainfall measurement mechanism utilizes a magnet, hence do not place any magnetic objects around the proximity of the sensor.

wind-blown rain, or create extra precipitation runoff. Trees and rooftops may also be sources of

To avoid rain shadow effects, place the sensor at a horizontal distance corresponding to two to

- Setting up the Anemometer (wind sensor) 1. Assemble the wind cups and wind vane to the anemometer arm, using the included small allen key. 2. Insert the 2 x 1.5 V AA batteries (optional) into the battery compartment in the base, observing
- the correct polarity. The anemometer is solar-powered. The batteries will operate as a backup power source. 3. Pull off the protection foil from the solar panel.
- 4. Insert the adapter into the jack. The rechargeable battery is already installed and now ready to use. 5. Mount the anemometer onto a vertical surface, using the fittings provided. To allow the main console unit to indicate the correct wind direction, the wind vane must be oriented towards the north, while the wind vane is in line with the anemometer's arm. Use a compass if necessary.
- Note: If the wind sensor cannot be fixed with the anemometer's arm towards the north, as provided by the default setting, you have to adjust the anemometer manually: i. Insert the backup batteries (where required) and plug the adapter into the jack. ii. Point the wind vane towards the north. Use a compass if necessary. iii. Use a pin to press the "SET" key which is in the battery compartment of the wind sensor.
- Above procedure must be repeated for changing battery. **Placement tips:**
- Check that wind can travel freely around the anemometer and is not distorted by nearby buildings, trees or other structures. - For better results, place the anemometer at least 3m above local structures and obstacles. The
- ground creates a frictional effect to wind flow and will attenuate readings. - Aim for maximum exposure of the anemometer to the commonest wind directions in your area. The official mounting location for anemometers is 10m (33 ft) above ground level in a clear
- **Setting up the Main Console Unit** 1. Open the latch at the back of the main console unit. 2. Insert 4 x "AA" size 1.5V batteries according to the polarities shown.
- 3. Reattach the latch.
- 4. You are highly recommended to connect the AC/DC adaptor. For the feature of the automatic backlight control function, the AC/DC adaptor must be used. 5. If placing the console unit on a table or horizontal surface, fold out the table stand and adjust to the optimal viewing angle.

6. If mounting the console unit on a wall or vertical surface, fold the table stand back into the unit

**Placement tips:** Make sure that the console unit is within receiving range of all remote sensors. Ideally sensors should be within the line of sight of the console unit. Transmission range may be affected by trees,

LIGHT SENSOR

- Weather forecast

- AUTO, ON, OFF

**Navigating between Different Modes** 

and use the fitting provided.

unobstructed location.

pollen and debris.

metal structures and electronic appliances. Test reception before permanently mounting your weather station.

37

The console unit measures indoor temperature, humidity, pressure and receives signals from all remote sensors and radio-clock broadcasts. Avoid placing the console unit in the following areas: - Direct sunlight and surfaces which radiate and emit heat. - Near heating and ventilation devices, such as heating ducts or air conditioners.

- Areas with interference from wireless devices (such as cordless phones, radio headsets, baby listening devices) and electronic appliances. Starting up the Main Console Unit Once the console unit is properly powered, the display will start showing some data and weather

readings to show up. If "---" is still displayed for the sensor reading(s), check the wireless transmission path and the batteries for the corresponding sensor. You can try to orient the antenna for a better reception.

parameters. Wait for a few minutes for the console to finish self-calibration and for the sensor

**Buttons and its control specification** The following controls are available on both the main console unit:

UP[ ▲ ]	- Switches to next mode in anti-clockwise direction - Increment for setting parameters		
DOWN[▼]	- Switches to next mode in clockwise direction - Decrement for setting parameters		
SET	<ul> <li>Rotates display for current mode</li> <li>Press and hold to enter setup or change units</li> <li>Confirmation for setting parameters</li> </ul>		
MEMORY	- Shows records for moon phase, temperature, humidity, rain and wind.		
HISTORY	- Shows history for sea-level pressure		
ALARM/CHART	- Shows time alarms and alerts for temperature, rain and wind Press and hold to enter alarm/alert setup - Press and hold in Pressure and Weather Forecast Mode to view different bar-charts		
CHANNEL	- Changes temperature and humidity display to selected channel     - Press and hold to enable cycling display of channel temperature     and humidity		
LIGHT/SNOOZE	- Turns on backlight for 5s		

- Enters Snooze mode when alarm is activated

38

**SENSITIVITY** - Adjusts the sensitivity of the light sensor - HIGH/LOW

The following controls are only available on the main console unit:

There are 7 modes available on the main console unit, and each one displays a different category of data. When display is in a certain mode, its corresponding icon will start flashing. To navigate between the different modes from the main console unit, press UP [ • ] to cycle through the modes in a clockwise direction or DOWN [  $\nabla$  ] to cycle through the modes in an anticlockwise direction. **MOONPHASE WEATHER Moon Phase and Weather** 

- Toggles the light sensor function to automatic, on or off

- Current pressure, trend, and history bar-chart



Sunrise/Sunset Mode

- Radio Controlled clock showing current time and calendar

- Single alarm, weekday alarm and pre-alarm

TIME Time and Alarm Mode

- Sunrise and sunset times

- Longitude and Latitude of local area

39

**Temperature and Humidity Mode** 

- Temperature and humidity trend and readings for indoor and selected channel
- Comfort level
- Dew point



### RAIN Rain Mode

- Precipitation amount for last hour, last 24 hour, yesterday, last week and last month - Rainfall alert
- **WIND Wind Mode**
- Wind Chill - Temperature at place of anemometer
- Wind direction - Wind speed
- Wind gust
- Alert for wind speed and wind gust speed



**Customizing your Weather Station** 

To fully customize the weather station to your local settings and personal preferences, the following settings are required. Please refer to the appropriate sections for detailed instructions.

### Required:

- Setting Pressure Parameters during Initial Start-Up (Pressure and Weather Forecast Mode P.40) - Setting up the Time, Date and Language (Clock and Alarm Mode: P.43) - Setting up the Location Data (Sunrise/Sunset Mode: P.45)
- Setting up the Time Alarms (Clock and Alarm Mode: P.43)
- Setting up the Temperature Alerts (Temperature and Humidity Mode P.46)
- Setting up the Daily Rainfall Alerts (Rain Mode P.48) - Setting up the Wind Alerts (Winds Mode: P.49)

40

**LED Backlight Options** 

lighting preferences.

The backlight of the main console unit can be turned permanently on/off or automatically toggled when environment lighting level is low. Use the light sensor switch at the back of the unit to select

For the automatic backlight function, the sensitivity of the light sensor can be adjusted to high or

low with the sensitivity switch also on the back of the console unit.

Note: Console unit must be powered with AC/DC adaptor for automatic control function

Linking the Weather Station to a Computer Data collected by the weather station can be displayed and recorded on a computer by connecting

the main console unit with the computer via USB.

Install the software provided with the weather according to the instructions on the software manual.

Connect the main console unit with the computer using the USB cable provided. **Using the Different Weather Modes** 

**Pressure and Weather Forecast Mode** This part of the display indicates the current pressure, sea level pressure, weather forecast, moon phase and pressure trend.

A number of historical statistics can also be viewed, such as the sea-level pressure values for the last 24 hours, moon phase for the previous and next 39 days, as well as a pressure/temperature/ humidity history bar-chart. Pressure values may be displayed in Hg, hPa/mBar or mmHg, and altitude values may be displayed

in meters or feet. **Accessing Pressure and Weather Forecast Mode** From the main console unit: Press the button [ ▲ ] or [ ▼ ] until the weather forecast icon

**WEATHER** and **PRESSURE** on the upper left of the display starts flashing. **Setting Pressure Parameters during Initial Start-Up** 

During the initial start-up of the main console unit, all functions in Pressure and Weather Forecast mode will be locked until the pressure settings are configured. 1. Choose Pressure Units:

- The unit icon "inHg" or "mmHg" or "hPa/mBar" should be flashing. Press the button [▲] or [ ▼ ] to select pressure unit as inHg, hPa/mBar or mmHg
- Press **SET** to confirm your selection. 2. Choose Altitude Units: Press the button [  $\blacktriangle$  ] or [  $\blacktriangledown$  ] to select altitude unit as feet or meters.
- Press **SET** to confirm your selection. 3. Set Altitude:
- Press the button [ ▲ ] or [ ▼ ] to adjust value. Press and hold either button for fast advance. Press **SET** to confirm your selection. 4. Upon completion the display will be returned to Pressure and Weather Forecast Mode.
- Note: After initial start-up the altitude cannot be adjusted again until the main console unit is

**Understanding the Weather Forecast Display** 

41

- **Viewing Pressure and Altitude Data** In Pressure and Weather Forecast Mode, each press of **SET** rotates display between:
- Sea level pressure - Local pressure Local altitude
- **Setting the Sea Level Pressure**
- 1. In Pressure and Weather Forecast Mode, press SET until the sea level pressure is displayed. 2. Press and hold SET. The Sea Level Pressure display should be flashing. 3. Set Sea Level Pressure: Press the button [ ▲ ] or [ ▼ ] to adjust value. Press and hold either button for fast advance.
- Press **SET** to confirm your selection. 4. Upon completion the display will be returned to Pressure and Weather Forecast Mode. **Setting the Pressure and Altitude Units** 1. In Pressure and Weather Forecast Mode, press SET until local pressure is displayed.
- 2. Press and hold **MEMORY**. The pressure unit should be flashing. 3. Set Local Pressure Units: Press the button [  $\blacktriangle$  ] or [  $\blacktriangledown$  ] to adjust value.
- Press **SET** to confirm your selection. 4. Set Altitude Units: Press the button [  $\blacktriangle$  ] or [  $\blacktriangledown$  ] to adjust value.
- Press **SET** to confirm your selection. 5. Set Sea-Level Pressure Units:
- Press the button [  $\blacktriangle$  ] or [  $\blacktriangledown$  ] to adjust value. Press **MEMORY** to confirm your selection. 6. Upon completion the display will be returned to Pressure and Weather Forecast Mode.
- **Viewing the Sea Level Pressure History** 1. In all modes, pressing **HISTORY** will toggle the sea level pressure display. 2. When sea level pressure is displayed, press HISTORY repeatedly to view sea level pressure data
- for each of the last 24 hours. 3. If no buttons are pressed for 5s, the display automatically returns to Pressure and Weather

Forecast Mode.

- Viewing the Pressure/Temperature/Humidity Bar-Charts The bar-chart on the display can be configured to display the history data for sea-level pressure, temperature or humidity for channel 1.
- In Pressure and Weather Forecast Mode, press and hold ALARM/CHART to toggle the bar-chart between: - Sea-level pressure ("PRESSURE" should be displayed)
- Temperature (Thermometer icon and "CH1" should be displayed) - Humidity (RH icon and "CH1" should be displayed)
- **Viewing Moon Phase History and Forecast** 1. In Pressure and Weather Forecast Mode, press **MEMORY**.
- 2. "+ 0 days" should be flashing. 3. View Moon Phase History / Forecast:
- Press UP or DOWN to choose number of days forward (+ days) or backward (- days) from
- current date. Press and hold either button for fast advance.
- The corresponding moon phase will be shown. 4. To exit, press **MEMORY**. Otherwise, if no buttons are pressed for 5s the display automatically returns to Pressure and Weather Forecast Mode.
- 42

Display	Weather Forecast Status
~\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	Sunny
	Partly Cloudy
	Cloudy
and and and	Light Rain
and and and	Heavy Rain
<i>f f</i>	Unstable Weather
and and and and	Light Snow
	Heavy Snow

# 1. The accuracy of a general pressure-based weather forecast is about 70%.

2. The weather forecasts. It may not necessarily reflect the current situation. 3. The "Sunny" icon, as applies to night time, implies clear weather.

and and and

43

# **Understanding the Moon Phase Diagram**



**Clock and Alarm Mode** 

3. Select City Code:









time alarms available on the console unit: Single alarm: activated once at specified time Weekday alarm: activated everyday from Monday to Friday at specified time

The main console unit can be configured to display the time, calendar or UTC time. There are three

- Pre-alarm: activated at specified time interval (Fixed 30 min) ahead of weekday alarm, if channel 1 temperature falling to +2 °C or below.
- The snooze duration for the above alarms can also be programmed (0-15 min). **Accessing Clock and Alarm Mode**
- Setting up the Time, Date and Language

Press **SET** to confirm your selection.

settings made will be discarded.

1. In Clock and Alarm Mode, press and hold SET to enter clock and calendar setup. 2. The day of week should start flashing in the display.

From the main console unit: Press the button [  $\blacktriangle$  ] or [  $\blacktriangledown$  ] until the Time Icon TIME starts

Set Language: Press the button [  $\blacktriangle$  ] or [  $\blacktriangledown$  ] to select language for day of week: English, German, French, Italian, Spanish or Dutch Press **SET** to confirm your selection.

You will be asked to enter your latitude in minutes (°).

Press the button [ ▲ ] or [ ▼ ] to select city code for your local area. Refer to P.54 for a list of available codes. Press **SET** to confirm your selection. 4. (if USR was chosen for city code) Set Minute for Latitude:

Press the button [ ▲ ] or [ ▼ ] to adjust value. Press and hold either button for fast advance.

- Press SET to confirm your selection. Repeat above procedure to set seconds for latitude, minutes for longitude and seconds for longitude. 5. (if USR was chosen for city code) Set Time Zone: Press the button [ ▲ ] or [ ▼ ] to adjust value in resolution of 30 min. Press and hold either button for fast advance.
- 6. (if USR was chosen for city code or city is in a DST zone) Set Daylight Saving Time Option: Press the button [▲] or [▼] to turn DST option on or off. Press and hold either button for fast advance.
- Press **SET** to confirm your selection. 7. Repeat the above instructions to set year, month, day, calendar display format (day/month or month/day), time display format (12 hr/ 24 hr), local hour and local minutes. 8. Upon completion the display will return to normal Clock and Alarm Mode.
- 44

Note: Press and hold SET anytime during the setup to return to normal Clock and Alarm Mode. All

### - Hour: Minute for UTC (Coordinated Universal Time) - Hour: Minute: Weekday - Hour: Minute: City

Rotating between Different Clock/Calendar Displays

- Hour: Minute: Second - Month: Day: Year (or Day: Month Year depending on settings) **Activating/Deactivating the Time Alarms** 

In Clock and Alarm Mode, each press of **SET** rotates clock display between:

- Weekday Alarm Time (displays OFF if weekday alarm deactivated) - Single Alarm Time (displays OFF if single alarm deactivated) - Pre-Alarm Time (displays OFF if pre-alarm deactivated)
- 2. When the above alarms are displayed, pressing the button [▲] or [▼] will activate/deactivate the corresponding alarm. Note: Press **SET** anytime during alarm selection mode to return to normal clock display.

1. In Clock and Alarm Mode, each press of **ALARM/CHART** rotates clock display between:

- **Setting up the Time Alarms** 1. In Clock and Alarm Mode, press ALARM/CHART to select alarm which you wish to configure.
- 2. Press and hold ALARM/CHART until hour starts flashing in the display 3. Set Alarm Hour: Press the button [ ▲ ] or [ ▼ ] to adjust value. Press and hold either button for fast advance. Press ALARM/CHART to confirm your selection.
- 4. Set Alarm Minutes: Press the button [ ▲ ] or [ ▼ ] to adjust value. Press and hold either button for fast advance. Press ALARM/CHART to confirm your selection. 5. Set Duration of Snooze Function (all three alarms share same snooze time duration):
- Press the button [ ▲ ] or [ ▼ ] to adjust value. Press and hold either button for fast advance. Press ALARM/CHART to confirm your selection. 6. Upon completion the display will be returned to the alarm selection screen.

Note: Pre-alarm cannot be activated if weekday alarm or single alarm is not enabled.

- Disabling/Entering Snooze when Time Alarms are Activated To Enter Snooze: Press LIGHT/SNOOZE to enable snooze function.
- Note: Alarm will automatically enter snooze mode if no key is pressed after the alarm sounds for 2 minutes. This will occur for a maximum of three times.
- To Disable Alarm(s): Press **ALARM/CHART** to disable the alarm (s). Note: For weekday alarm, pressing ALARM/CHART will only disable the alarm for the current day. The alarm will be activated again the next day (if it falls within Monday to Friday).
- **Activating/Deactivating Radio Clock Reception** The main console unit synchronizes the time and date with radio clock broadcasts to maintain atomic clock precision.

45

### If RC reception is deactivated, the triangular tower icon will disappear. Icon **RC** Reception Strength Undefined data (Flashing)

To turn this function on/off:

Press and hold the button  $[ \triangle ]$ .

Reception failed for 24 hours

If RC reception is activated, a tower icon will start flashing beside the clock icon.

Weak signal, but can be decoded					
(° <sub>1</sub> »)	·				
Note: The radio controlled signal for time (DCF 77) is transmitted from the central atomic clock in Frankfurt/Main in short intervals. It has a reception range of approx. 1500 km. Obstructions such as concrete walls can reduce the signal range.					
	de it computes the sunrise and sunset times from the user-configured location ne longitude, latitude, time zone and DST (Daylight Saving Time). Choosing a				

choose "USR" as the city code during setup. A searching function is also available, which allows the sunrise/sunset times for different dates to be

From the main console unit: Press the button [ \( \bigs \) ] or [ \( \bigv \) ] until the sunrise and sunset icons

suitable city code for your area will automatically generate the correct values for the location data.

Should you wish to input your own location data or if a suitable city code could not be found,

**Setting up the Location Data** 

Should you wish to input your own geographical coordinates, choose "USR" as the city code Press **SET** to confirm your selection. 3. If "USR" was chosen, you will be asked to input your geographical coordinates.

Press **SET** to confirm your selection.

Set Degree of Latitude:

Press the button [ ▲ ] or [ ▼ ] to select city code for your local area. Refer to P.54 for a list of available codes. The corresponding longitude and latitude will be shown along with the city.

46

2. The city code in the Time and Alarm display should start flashing.

1. In Sunrise/Sunset Mode, press and hold **SET** to enter location data setup.

**Accessing Sunrise/Sunset Mode** 

SUNSET on the lower left of the display start flashing.

Press the button [ ▲ ] or [ ▼ ] to adjust value. Press and hold either button for fast

Note: Press and hold SET anytime during the setup to return to normal Clock and Alarm Mode. All settings made will be discarded. **Viewing the Location Data** In Sunrise/Sunset Mode, each press of SET rotates display between:

5. Upon completion the display will be returned to Sunrise/Sunset Mode.

4. Repeat above procedure to set minute of latitude, degree of longitude, minute of longitude, time

zone of the city, and DST selection.

- Time and sunrise/ sunset Times - Calendar and sunrise/ sunset Times - Calendar and longitude/ latitude

**Understanding the Sunrise/Sunset Display** 

Sunrise status

Sunrise at previous day

No sunrise for the whole day

From 12 pm to 12 am:

Display

**FULL** 

**Viewing Sunrise/Sunset Times for Different Dates** 1. In Sunrise/Sunset Mode, press **MEMORY**. 2. The date should be flashing. Press the button [ ▲ ] or [ ▼ ] to adjust date. Press and hold either button for fast advance.

The corresponding sunrise and sunset times will be displayed for the selected date.

The sunrise time being displayed differs during the morning and the afternoon/night. From 12 am to 12 pm: The sunrise time for the current day will be displayed.

3. Press **MEMORY** or **SET** to return display to Sunrise/Sunset Mode.

will be displayed above the sunrise time. At certain locations (especially those at high latitudes), sunrise and sunset events may not occur within a 24 hour time frame.

The sunrise time for the next day will be displayed. "NEXT DAY" icon

Sunset status

Sunset at next day or later

No sunset for the whole day

Display

**FULL** 

Temperature and Humidity Mode					
The weather station supports up to 5 remote thermo-hygrometer sensors, each sensor corresponding					
to a separate channel for the temperature and relative humidity display. The temperature may be					
shown in degrees Celsius °C or degrees Fahrenheit °F. The trend (rising, steady or falling) of all					
values is also indicated on the display.					
The main console unit uses the indoor temperature	and humidity of	lata to compute a comfort level			
rating of Wet, Comfort or Dry.					
A temperature alert function is available for each c	hannel. It can b	e programmed to sound if the			

Note: The temperature alerts have a 0.5 °C hysteresis to prevent the alerts from sounding constantly due to small fluctuations near the alert value. This means that after the temperature reaches the alert

47

channel temperature exceeds or falls below the pre-configured upper and lower limits.

value, it will have to fall below the alert value plus the hysteresis to deactivate the alert.

The wave icon above the current channel display shows the connection status of the corresponding

Searching for remote sensor signals

Corresponding remote sensor successfully linked

No signals received for more than 15 minutes

### **Accessing Temperature and Humidity Mode** From the main console unit: Press the button [ $\blacktriangle$ ] or [ $\blacktriangledown$ ] until the OUT Icon $\blacksquare$ and IN icon IN on the upper right of the display starts flashing.

- Temperature and Relative Humidity

the corresponding alert.

**Setting up the Temperature Alerts** 

Press ALARM/CHART to disable the alarm (s).

- Dew Point Temperature and Relative Humidity

For Static Display:

channels.

Viewing Temperature and Humidity Display for each Channel

For Cycling Display: To enable automatic rotating between different channel displays, press and hold CHANNEL, until the O icon is displayed. Each valid channel will now be alternately displayed for 5s. **Rotating Between Temperature and Dew Point Display** In Temperature and Humidity Mode, each press of **SET** rotates temperature display between:

In Temperature and Humidity Mode, each press of CHANNEL rotates display between different

Setting Units for Temperature Display (°C or °F) In Temperature and Humidity Mode, press and hold SET to convert units between degrees Celsius °C and degrees Fahrenheit °F.

- Lower Temperature Alert (displays OFF if deactivated): [ ▼ ] icon displayed

**Activating/Deactivating the Temperature Alerts** 1. In Temperature and Humidity Mode, each press of ALARM/CHART rotates channel temperature display between: - Current Temperature for corresponding channel - Upper Temperature Alert (displays OFF if deactivated): [ ▲ ] icon displayed

2. When the above alerts are displayed, pressing the button [ \( \blacktriangle \)] or [ \( \blacktriangle \)] will activate/deactivate

1. In Temperature and Humidity Mode, press ALARM/CHART to select alarm which you wish to configure. 2. Press and hold **ALARM/CHART** until channel temperature and [ ▲ ] or [ ▼ ] icon starts flashing in the display.

Press ALARM/CHART to confirm your selection. 4. Upon completion the display will be returned to the temperature alert selection screen. Disabling when Temperature Alarms are Activated To Disable Temperature Alarm(s):

- Minimum temperature and humidity at remote sensor - Maximum temperature and humidity at remote sensor

3. Set Value for Temperature Alert: Press the button [  $\blacktriangle$  ] or [  $\blacktriangledown$  ] to adjust value. Press and hold either button for fast advance.

СН

**Remote Sensor Status** 

**a** flashing

remote sensor:

The main console unit may be manually activated to search for signals from all remote sensors. Press and hold the button [ ▼ ] to enforce a search. Rain Mode The main console unit records the total amount of rainfall for the last hour, last 24 hours, yesterday,

exceeds a pre-configured limit. **Accessing Rain Mode** From the main console unit: Press the button [ ▲ ] or [ ▼ ] until the RAIN icon RAIN on the display starts flashing.

**Resetting the Rainfall Statistics Memory** In Rain Mode, press and hold **MEMORY** to reset all rainfall statistics.

statistics and the daily rainfall alert ("ALARM HI" will be displayed). If the alert is deactivated, "OFF" will be shown, otherwise the rainfall alert value is shown. 2. When the rainfall alert is displayed, pressing the button [ ▲ ] or [ ▼ ] will activate/deactivate it.

49

Icon

last week and last month. The rainfall may be displayed in mm or inches. A daily rainfall alert function is available which can be programmed to sound if the daily rainfall

**Viewing Rain Statistics** In Rain Mode, each press of **SET** or **MEMORY** rotates display between different rain statistics:

Status

Activating Main Console Unit to Search for All Remote Sensor Signals

Tip: For an estimation of the rain rate, the Last Hour rainfall value can be understood as "inch/hr" or

**Setting Units for Rain Display (inch or mm)** In Rain Mode, press and hold **SET** to convert units between mm and inches.

- Yesterday - Last week - Last month "mm/hr".

- Last 24 hour

"mm" is equal to "l/m2" Activating/Deactivating the Daily Rainfall Alert 1. In Rain Mode, each press of ALARM/CHART rotates display between the current rainfall

Viewing the Max/Min Channel Temperature and Humidity In Temperature and Humidity Mode, each press of MEMORY rotates channel temperature and

humidity display between: - Current temperature and humidity at remote sensor Resetting the Max/Min Channel Temperature and Humidity Memory In Temperature and Humidity Mode, press and hold MEMORY to clear memory for all channels.

**Setting up the Daily Rainfall Alert** 1. In Rain Mode, press ALARM/CHART to display rainfall alert. 2. Press and hold ALARM/CHART until rainfall alert and "ALARM HI" starts flashing in the display. 3. Set Value for Rainfall Alert: Press the button [ ▲ ] or [ ▼ ] to adjust value. Press and hold either button for fast advance.

Press ALARM/CHART to confirm your selection. 4. Upon completion the display will be returned to the rainfall alert display.

Disabling when Daily Rainfall Alert is Activated

To Disable Rainfall Alert: Press ALARM/CHART to disable the alert.

Wind Mode

The wind direction is shown by an animated compass display. Its angle can be displayed as compass points (i.e. NW) or in bearings from the north (i.e. 22.5°). The upper left of the wind display can be set to indicate the temperature at the anemometer or the

temperature adjusted with a wind chill factor.

The lower left of the wind display indicates the average wind speed for the last 10 minutes, as well as gust, wind speed alert and gust alert information. It can also show records of the maximum values of wind speed and gust attained for the current day.

The wind speed and gust alert functions can be programmed to sound if the wind speed or gust exceeds a pre-configured limit. The wind speed may be displayed in km/h, mph, m/s or knots.

Note: The wind speed alert has a 5 mph hysteresis and the wind gust speed alert has a 7 mph hysteresis. The hysteresis is to prevent the alerts from sounding constantly due to small fluctuations near the alert value. This means that after the wind speed reaches the alert value, it will have to fall below the alert value plus the hysteresis to deactivate the alert.

**Accessing Wind Mode** 

From the main console unit: Press the button [ ▲ ] or [ ▼ ] until the WIND icon WIND on the display starts flashing.

**Configuring Wind Display** 

In Wind Mode, each press of **SET** rotates display between: - Temperature with wind chill, wind direction in bearings

- Temperature with wind chill, wind direction in compass points - Temperature at anemometer, wind direction in compass points - Temperature at anemometer, wind direction in bearings

Setting Units for Wind Speed Display (km/h, mph, m/s or knots)

In Wind Mode, press and hold SET to convert wind speed units between km/h, mph, m/s or knots.

**Viewing Wind Statistics** 

In Wind Mode, each press of **MEMORY** rotates wind speed display between:

- Current wind speed - Daily maximum wind speed ("DAILY MAX" is displayed)

- Gust speed ("GUST" is displayed)

- Daily maximum gust speed ("GUST DAILY MAX" is displayed)

Resetting the Wind Statistics Memory

In Wind Mode, press and hold **MEMORY** to reset all wind statistics.

**Activating/Deactivating Wind Alerts** 

1. In Wind Mode, each press of ALARM/CHART rotates wind speed display between: Current wind speed

Wind speed alert ("ALARM HI" displayed) - Gust alert ("GUST ALARM HI" displayed) If the alert is deactivated, "OFF" will be shown, otherwise the alert value is shown.

2. When a wind alert is displayed, pressing the button [  $\blacktriangle$  ] or [  $\blacktriangledown$  ] will activate/deactivate it. **Setting up the Wind Alerts** 1. In Wind Mode, press **ALARM/CHART** to select alarm which you wish to configure.

2. Press and hold **ALARM/CHART** until alert and corresponding icon starts flashing in the display.

Press the button [ ▲ ] or [ ▼ ] to adjust value. Press and hold either button for fast advance. Press **ALARM/CHART** to confirm your selection.

4. Upon completion the display will be returned to the wind alert selection screen.

Disabling when Wind Alert is Activated

**Changing Batteries for the Main Console Unit** 

replace the batteries for the corresponding unit immediately.

To Disable Wind Alert:

Press ALARM/CHART to disable the alert.

3. Set Value for Alert:

Maintenance **Changing Batteries** The battery statuses of the sensors are checked every hour. If the low battery indicators light up,

1. To avoid losing data and records, connect the AC/DC adaptor to the main unit first. 2. Remove the latch at the back and replace all batteries. Do not mix old and new batteries. 3. Replace the cover.

**Changing Batteries for the Remote Sensors** 1. Replace the batteries following the setup instructions for the corresponding sensor.

To enforce a search immediately for all remote signals, press and hold the button [  $\nabla$  ] on the main console unit.

2. When the batteries are properly installed, the sensor will resume sending signals to the main

Cleaning

The main console unit and outer casings for the remote sensors can be cleaned with a damp cloth. Small parts can be cleaned with a cotton tip or pipe-cleaner. Never use any abrasive cleaning agents and solvents. Do not immerse any units with electronic parts in water or under running water.

Anemometer - Check that the wind vane and wind cups can spin freely and are free from dirt, debris or spider webs.

51

Like all rain gauges, the rain sensor is prone to blockages due to its funnel shape. Checking and cleaning the rain sensor from time to time will maintain the accuracy of rain measurements. - Detach the protective screen and lid. Remove any dirt, leaves or debris by cleaning the items with soapy water and a damp cloth. Clean small holes and parts with a cotton tips or pipe-cleaner.

- Also clean the swinging mechanism with a damp cloth.

Look out for spiders or insects that might have crawled into the funnel.

**Troubleshooting** 

"The display shows dashes "---" for weather parameter(s)" The display will show "---" when the wireless link is lost with the remote sensor for the following

Thermo-hygro Sensor – 15 minutes Anemometer (Wind Sensor) - 15 minutes Rain Sensor – 30 minutes

Check or replace the batteries for the corresponding sensor. Then press and hold the button [  $\mathbf{V}$  ] to enforce a search for all remote signals.

If the above does not solve the problem, check the wireless transmission path from the corresponding sensor to the main console unit and change their locations if necessary. Although wireless signals can pass through solid objects and walls, the sensor should ideally be within the line of sight of the console unit.

The following may be the cause of reception problems: - Distance between remote sensor and main console unit too long.

- Signal shielding materials such as metal surfaces, concrete walls or dense vegetation in the path

- Interferences from wireless devices (such as cordless phones, radio headsets, baby listening devices) and electronic appliances.

"The weather readings do not correlate with measurements from TV, radio or official weather reports." Weather data can vary considerably due to different environmental conditions and placement of weather sensors.

52

"The weather forecast is inaccurate." The weather forecast is a prediction of weather after 12-24 hours, and may not reflect current

Check the placement tips included in this manual to site your sensors in the best possible way.

weather conditions

Waste disposal

This product has been manufactured using high-grade materials and components which can be recycled and reused.

Never throw flat batteries and rechargeable batteries in household waste. As a consumer, you are legally required to take them to your retail store or to appropriate collection sites according to national or local regulations in order to protect the environment. The symbols for the heavy metals contained are: Cd=cadmium, Hg=mercury, Pb=lead

This instrument is labelled in accordance with the EU Waste Electrical and Electronic Equipment Directive (WEEE). Please do not dispose of this product with other household waste. The user is obligated to take end-of-life devices to a designated collection point for the disposal of electrical and electronic

equipment, in order to ensure environmentally-compatible disposal. No part of this manual may be reproduced without written consent of TFA Dostmann. The technical data are correct at the time of going to print and may change without prior notice.

The latest technical data and information about your product can be found by entering your product number on our homepage: www.tfa-dostmann.de EU declaration of conformity

 $\epsilon$ 

DST

Code

Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address: www.tfa-dostmann.de E-Mail: info@tfa-dostmann.de

Hereby, TFA Dostmann declares that the radio equipment type 35.1075 is in compliance with

TFA Dostmann GmbH & Co. KG, Zum Ottersberg 12, D-97877 Wertheim

Power : use 4 pcs "AA" 1.5V battery : AC/DC adaptor 7.5V 200mA (centre +) : use 2 pcs "AA" 1.5V battery : use 2 pcs "AA" 1.5V battery Main unit

: use 2 pcs "AA" 1.5V battery Remote Rain gauge unit Weight : 231g (without battery) Main unit

Remote Thermo.-Hygro unit

Remote Anemometer unit

: 65g (without battery) Remote Thermo.-Hygro unit 315g (without battery) Remote Anemometer unit Remote Rain gauge unit : 290g (without battery)

Dimension : 220(L) x 165(H) x 32(D) mm Main unit Remote Thermo.-Hygro unit : 55.5(L) x 101(H) x 24(D) mm

405(L) x 375(H) x 160(D) mm Remote Anemometer unit : 163(L) x 177(H) x 119(D) mm Remote Rain gauge unit

53

### **Appendix City Codes**

**US and Canadian Cities** DST City Code Atlanta, Ga Memphis, Tenn. ATL SU MEM SU SU Miami, Fla. Austin, Tex. AUS SU MIA Milwaukee, Wis Baltimore, Md. MKE Birmingham, Ala BHM SU Minneapolis, Minn MSP SU SU Boston, Mass. BOS Montreal, Que., Can YMX SU Nashville, Tenn. Calgary, Alba., Can Chicago, IL CGX SU SU New Orleans, La. MSY SU SU Cincinnati, Ohio NYC CVG New York, N.Y. SU SU Cleveland, Ohio Oklahoma City, Okla Columbus, Ohio CMH SU SU Omaha, Neb. OMA SU SU Ottawa, Ont., Can. YOW Dallas, Tex. DAL Denver, Colo. SU Philadelphia, Pa. SU Detroit, Mich. DTW SU SU Phoenix, Ariz. PHX NO SU ELP El Paso, Tex. PIT Pittsburgh, Pa. SU Houston, Tex. Portland, Ore. PDX SU Indianapolis, Ind IND NO San Antonio, Tex SAT SU JAX San Diego, Calif. SU SU SAN Jacksonville, Fla Las Vegas, Nev. San Francisco, Calif. Los Angeles, Calif LAX SU San Jose, Calif. SJC SU DST Seattle, Wash Vancouver, B.C., Can. YVR St. Louis, Mo. STL SU Washington, D.C Tampa, Fla. Vancouver, Canada VAC Toronto, Ont., Can. YTZ SU **World Cities** DST City Time Zone Addis Ababa, Ethiopia sg NO ADL 9.5 SA Calcutta, India (as Kolkata) CCU 5.5

DST NO Algiers, Algeria ALG Cape Town, South Africa CPT NO AMS SE SE NO SU Amsterdam, Neth Caracas, Venezuela Chihuahua Mexico Ankara, Turkey AKR CUU Asunción, Paraguay SE sp SE Copenhagen, Denmark СРН ASU Córdoba, Argentina NO NO Athens, Greece NO Bangkok, Thailand BKK Dakar, Senega DKR SE SE Barcelona, Spain Dublin, Ireland DUB NO SE SE Beijing, China Durban, South Africa SE Belgrade, Yugoslavia BEG Frankfurt, Germany FRA Berlin, Germany SE Glasgow, Scotland GLA BER SE NO NO SE SH Guatemala City, Guate Birmingham, England Bogotá, Colombia BOG Hamburg, Germany HAM Bordeaux, France SE BOD Havana, Cuba HAV SE NO SE Helsinki, Finland HEL Bremen, Germany Brisbane Australia BNE NO Hong Kong, China HKG SE Irkutsk, Russia SK Brussels, Belgium BRU IKT Bucharest, Romania SE Jakarta, Indonesia NO Budapest, Hungary BUD SE Johannesburg, South Africa JNB NO Kingston, Jamaica Buenos Aires, Argentina

OSL PTY Kinshasa, Congo FIH NO Oslo, Norway SE Panama City, Panama Kuala Lumpur, Malaysia NO NO KUL La Paz, Bolivia NO Paris, France PAR SE LPB Lima, Peru LIM NO Perth, Australia PER NO Lisbon, Portugal Prague, Czech Republic SE LIS SE PRG LPL SE RGN NO Liverpool, England Rangoon, Myanmai London, England LON SE Reykjavík, Iceland  $\mathsf{RKV}$ NO Lvon, France SE Rio de Janeiro, Brazil RIO LYO sb SE Madrid, Spain MAD SE Rome, Italy ROM Manila, Philippines MNL NO Salvador, Brazil SSA NO Marseille, France MRS SE Santiago, Chile SCL Melbourne, Australia MEL São Paulo, Brazil SPL Mexico City, Mexico MEX -6 SU Shanghai, China SHA NO SE Singapore, Singapore NO Milan, Italy MIL SIN SM Montevideo, Uruguay MVD Sofia, Bulgaria SOF -3 Moscow, Russia MOW SK SE Stockholm Arlanda, Sw ARN SE SA Munich, Germany MUC Sydney, Australia SYD NO Nairobi, Kenya NBO Tokyo, Japan TKO NO Nanjing (Nanking), China NKG NO Tripoli, Libya TRP NO SE Vienna, Austria Naples, Italy NAP VIE SE New Delhi, India NO Warsaw, Poland WAW DEL 5.5 Odessa, Ukraine ODS SE NO Zürich, Switzerland ZRH Osaka, Japan KIX **DST** definition SA = Australian DST

City

DST

Code

SC = Chile DST SE = Standard European DST. SG = Egypt DST SH = Havana, Cuba DST SI = Iraq and Syria DST SK = Irkutsk & Moscow DST SM = Montevideo, Uruguay DST SN = Namibia DST SP = Paraguay DST SQ = Iran DST maybe changed annually.

NO DST = no = Places that do not observe DST ON = Always add 1 hour with local standard time

ST = Tasmania DST

SZ = New Zealand DST

SU = Standard American DST.

54

433.92 MHz

55

**Technical Specifications Weather Station Receivers** Receiver (Supply=6.0V, Ta=23°C) **RF** Transmission Frequency

RF Reception Range Thermo-hygro Sensor Wind Sensor, Rain Sensor Maximum transmitting power Thermo-hygro Sensor, Rain sensor Wind sensor Barometric Pressure Range

(At sea level) Altitude Compensation Range Barometric Pressure resolution Barometric Pressure accuracy Outdoor Temperature Display Range Indoor Temperature Display Range Operating Temperature Storage Temperature Temperature accuracy Temperature resolution **Humidity Display Range** 

Humidity accuracy Humidity resolution Receiving Cycle

Remote Thermo./Hygro. Rain gauge Wind sensor Sunrise and Sunset Accuracy Wind Direction Range Wind Direction Accuracy

Wind Direction Resolution Wind Direction Starting Threshold Wind Speed Range Wind Speed Accuracy Wind Speed Starting Threshold

Wind/Gust Speed Display Update Interval 33 seconds Wind/Gust Sampling Interval 1h/24h/yesterday Rainfall Range

Last week/ last month Rainfall Range Temperature Sensing Cycle (indoor) Humidity Sensing Cycle (indoor)

 $Hardware\ Requirement\ for\ running\ PC\ software\ \textit{Weather View}$ Operating System: Windows 98 se or above Memory: Ram 32 M byte or more Hard disk: 20 M byte free space or more Optical Device: 2 x CD-Rom drive

100 meters Maximum (Line of Sight ) 100 meters Maximum (Line of Sight)

and Sensor unit (Supply=3.0V, Ta=23°C)

0,1 mW 0,15 mW 500 hpa to 1100hpa (14.75 inHg to 32.44 inHg), ( 374.5 mmHg to 823.8 mmHg )

-200 m to +5000 m ( -657 ft to 16404 ft )  $0.1\ hpa$  (  $0.003\ inHg,\,0.08\ mmHg$  ) +/- 3 hpa (0.009 inHg, 2.3 mmHg)  $-40^{\circ}$ C to  $80^{\circ}$ C ( $-40^{\circ}$ F to  $176^{\circ}$ F) -9.9°C to 60°C ( 14.2°F to 140°F) -5°C to 50°C (23°F to 122°F) -20°C to 70°C( -4°F to 158°F) +/- 1°C or +/- 2°F

0.1°C or 0.2°F 0% to 99% +/-5% (within 25% - 80%) 1% around 47s 183s 33s +/-1min ( latitude within  $+/-50^{\circ}$  )

16 positions +/-11.25°

22.5° 3mph 0 to 199.9mph (199.9 Km/h, 173.7 Knots, 89.3 m/s) +/- (2mph + 5%)3mph

11 seconds 0.0 to 1999.9 mm (78.73 inch) 0 to 19999 mm (787.3 inch) 10s 10s

56