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# PS8A

## Evaluation Unit

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Item number 701



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**elsner**  
elektronik

**Installation and Operation**

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Installation, inspection, commissioning and troubleshooting of the device must only be carried out by a competent electrician.

This manual is amended periodically and will be brought into line with new software releases. The change status (software version and date) can be found in the contents footer. If you have a device with a later software version, please check **www.elsner-elektronik.de** in the menu area "Service" to find out whether a more up-to-date version of the manual is available.

## Clarification of signs used in this manual



Safety advice.



Safety advice for working on electrical connections, components, etc.

### **DANGER!**

... indicates an immediately hazardous situation which will lead to death or severe injuries if it is not avoided.

### **WARNING!**

... indicates a potentially hazardous situation which may lead to death or severe injuries if it is not avoided.

### **CAUTION!**

... indicates a potentially hazardous situation which may lead to trivial or minor injuries if it is not avoided.



**ATTENTION!** ... indicates a situation which may lead to damage to property if it is not avoided.

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# 1. Description

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## 1.1. Product description

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The system **PS8A** records meteorological data and forwards it to the evaluation unit. Here, it is analysed against the default settings. The user can program the eight output relays integrated with the evaluation unit individually. The output signals are used for control of higher level modules and to control the motors for the ventilation units, shading units or other equipment. Digital inputs from bus systems or PLC can also be switched.

**Functions:**

- Complete system, comprising evaluation unit, weather station and indoor sensor

*Evaluation unit:*

- 8 relay outputs
- Integrated keypad and display

*Weather station P03/3:*

- Brightness measurement with three separate sensors for east, south and west. Twilight detection with special filters
- Wind measurement: The wind strength is measured electronically and thus noiselessly and reliably, even during hail, snow and sub-zero temperatures. Even turbulent air and anabatic winds in the vicinity of the weather station are recorded
- Temperature measurement
- Heated precipitation sensor (1.2 watts): No error measurement with dew or mist, fast drying after the rain ends
- Integrated GPS receiver
- Combination mounting for wall or pole assembly; hinge arm mounting available as an option

*T-KTY82 indoor temperature sensor:*

- Universal temperature sensor

### 1.1.1. Scope of delivery

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- PS8A evaluation unit
- P03/3 weather station
- T-KTY82 indoor temperature sensor
- Manual

### 1.1.2. Technical data

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*Evaluation unit:*

Housing	Plastic
Colour	Grey

Assembly	Series installation on mounting rail
Protection class	IP 20
Dimensions	approx. 105 x 90 x 60 (W x H x D, mm), 6 width units
Weight	approx. 485 g
Ambient temperature	Operational -5...+50°C, storage -25...+90°C
Ambient humidity	max. 95% rh, avoid condensation
Operating voltage	230 V AC, 50 Hz
Power consumption	approx. 2 W
Outputs	8 x potential-free relays, each max 2A/250V

The product conforms with the provisions of EU directives.

#### **Weather station P03/3:**

Housing	Plastic
Colour	White / Translucent
Assembly	Surface mount
Protection class	IP 44
Dimensions	approx. 96 x 77 x 118 (W x H x D, mm)
Weight	approx. 148 g
Ambient temperature	Operational -30...+50°C, storage -30...+70°C
Operating voltage	24 V DC
Power	max. 105 mA, residual ripple 10%
Rain sensor heater	approx. 1.2 W
Temperature measurement range	40...+80°C
Resolution (temperature)	0.1°C
Accuracy (temperature)	+/- 1.5% at -25°C...+80°C
Brightness measurement range	1...99.000 Lux
Resolution (brightness)	1 Lux at 0...120 Lux 2 Lux at 121...1.046 Lux 63 Lux at 1.047...52.363 Lux 423 Lux at 52.364...99.000 Lux
Accuracy (brightness)	+/- 35%

The product conforms with the provisions of EU directives.

#### **T-KTY82 indoor temperature sensor:**

Housing	Metal
Assembly	Surface mounting in invisible area
Dimensions	Length of sensor sleeve approx. 45 mm, R. approx. 6 mm, Cable length approx. 187 mm
Total weight	approx. 10 g

Ambient temperature/ measurement range	-40...+60°C
Sensor resistance	2 kΩ, ±20Ω (at 25°C)

The product conforms with the provisions of EU directives.

## 1.2. Dataoutput via RS485 interface

The **Evaluation Unit PS8A** has an RS485 interface connector at the terminals A(TR) and B(TI). The currently recorded meteorological data, current relay status, together with date and time are sent automatically every second over these connections. This data flow can be received and analysed with a terminal device such as PLC, PC or converters.

The report that is used for this purpose is listed below.

All characters and numbers used are based on the ASCII standard, i.e. each measured value that is processed internally as an integer or floating value is always broken down and transferred in its individual symbols in ASCII format. This must then be re-assembled by the recipient in the reverse process. If individual bytes are not needed from time to time, a "P" is saved in these. If the **Evaluation Unit PS8A** detects a sensor error, i.e. if the weather station or internal sensor are defective, transmission is suspended. The receiver software must monitor whether a data packet is sent by the **Evaluation Unit PS8A** each second. If this is not the case, there is an error and the receiver software must respond accordingly. This also guarantees protection against a wire breaking.

The receiver should also carry out a plausibility check on the measured values transferred, i.e. it shall be checked whether they are realistic (in other words, that they are within the stated measurement range).

The following data is transferred:

W0 22.6 0 0 ON 0.0NO 14.0PPNJJNNJJ121 3 112 830 77 2578\x03

Received ASCII charac- ters	Meaning	Byte No.	Comment
W	Weather data start	1	Sending start
0	Weather station number	2	Weather station No. 0
_22.6	Outside temperature (°C)	3-7	Outside 22.6°C
_0	East sun in klux	8+9	East sun 0 klux
_0	South sun in klux	10+11	South sun 0 klux
_0	West sun in klux	12+13	West sun 0 klux
N	Twilight (Yes/No)	14	No twilight
_0.0	Wind speed in m/s	15-18	Wind 0.0 m/s

Received ASCII characters	Meaning	Byte No.	Comment
N	Rain (Yes/No)	19	No rain
0	Inside sensor number	20	Inside sensor No. 0
_14.0	Inside temperature °C	21-25	Inside 14.0°C
PP	Air humidity in %	26+27	PP because the PS8A does not have any air humidity meter
N	Status display relay 1	28	Relay 1 Off
J	Status display relay 2	29	Relay 2 On
N	Status display relay 3	30	Relay 3 Off
J	Status display relay 4	31	Relay 4 On
N	Status display relay 5	32	Relay 5 Off
N	Status display relay 6	33	Relay 6 Off
J	Status display relay 7	34	Relay 7 On
J	Status display relay 8	35	Relay 8 On
5	Weekday	36	5 = Friday
21	Date: DD	37+38	21.
_3	Date: MM	39+40	March
_1	Date: YY	41+42	2001
_8	Time: Hours	43+44	8 a.m.
_8	Time: Minutes	45+46	8 minutes
30	Time: Seconds	47+48	30 seconds
_77	Daylight lux	49-51	77 lux (starting from 999 lux sunlight)
_2578	Test sum	52-56	The test sum must be recompiled into an unsigned int value for the check (see below)
\x03	End detection (0x03)	57	x03 corresponds to the ETX (End of Text) character according to the ASCII standard

Underscores are not sent by the controller, but in this case each represents a space, because individual numbers sometimes do not occupy all the space reserved for them in the report.

To display the composition of the individual ASCII characters in a "normal" count, an example using the test sum as it can be produced in C++ follows at this point:

```

char pruefsumme_empfangenstr[6];
char empfangdaten[100];
int ezaehler = 0;
unsigned int pruefsumme_empfangen;

if (empfangdaten[57] == 0x03)// If the end detection is reached,
                           // the individual bytes are written into the
{
                           // test sum string and
                           // then converted with sscanf into an unsigned
                           // int value.
pruefsumme_empfangenstr[0] = empfangdaten[52];
pruefsumme_empfangenstr[1] = empfangdaten[53];
pruefsumme_empfangenstr[2] = empfangdaten[54];
pruefsumme_empfangenstr[3] = empfangdaten[55];
pruefsumme_empfangenstr[4] = empfangdaten[56];
pruefsumme_empfangenstr[5] = 0x00;// 0x00 must be attached,
                           // so that sscanf knows
                           // where the string belongs.

sscanf (pruefsumme_empfangenstr, "%6u", &pruefsumme_empfangen);
}

```

This is how all bytes can be converted into a *floating*, *int* or *unsigned int* value. However, the formatting instruction for a floating value is:

```

sscanf (pruefsumme_empfangenstr, "%5f", &pruefsumme_empfangen);
and for an int value:
sscanf (pruefsumme_empfangenstr, "%5d", &pruefsumme_empfangen);

```

#### **Technical specifications:**

Data transfer rate:	19200 bauds
Data bits:	8
Stop bit:	1
Parity:	none

#### **Troubleshooting:**

**Evaluation Unit PS8A** breaks the transmission off if one of the following errors is present:

1. No data from the weather station.
2. The inside temperature is outside the permitted measurement range or the inside temperature sensor is not installed.
3. After the mains voltage has failed for more than 30 minutes and the clock has still not been set.

When the errors have been corrected, the time set and the PS8A is in "normal" automatic mode again, the device resumes transmission.

## 1.2.1. Transmission protocol

Byte No.	Char	Identification
1	W	Weather data start
2	W_Number: 0-9	Weather station number (for more than one P01)
3	OT: Preliminary character	Outside temperature preliminary character ±
4	OT: 1st number	Outside temperature 1st number (tens)
5	OT: 2nd number	Outside temperature 2nd number (units)
6	OT: decimal point	Outside temperature decimal point
7	OT: 3rd number	Outside temperature 3rd number (tenths)
8	ES: 1st number	East sun 1st number (tens)
9	ES: 2nd number	East sun 2nd number (units)
10	SS: 1st number	South sun 1st number (tens)
11	SS: 2nd number	South sun 2nd number (units)
12	WS: 1st number	West sun 1st number (tens)
13	WS: 2nd number	West sun 2nd number (units)
14	Twilight	Twilight: Y = Yes; N = No
15	Wind: 1st number	Wind 1st number (tens)
16	Wind: 2nd number	Wind 2nd number (units)
17	Wind: decimal point	Wind decimal point
18	Wind: 3rd number	Wind 3rd number (tenths)
19	Rain	Rain: Y = Yes; N = No
20	IF_Number: 0-9	Inside sensor number (for more than one inside sensor)
21	IT: Vorzeichen	Inside temperature preliminary character ±
22	IT: 1st number	Inside temperature 1st number (tens)
23	IT: 2nd number	Inside temperature 2nd number (units)
24	IT: decimal point	Inside temperature decimal point
25	IT: 3rd number	Inside temperature 3rd number (tenths)
26	Humidity: 1st number	Air humidity 1st number (tens)
27	Humidity: 2nd number	Air humidity 2nd number (units)
28	Relay 1: Status	Relay 1 status indicator: Y = On; N = Off

Byte No.	Char	Identification
29	Relay 2: Status	Relay 2 status indicator: Y = On; N = Off
30	Relay 3: Status	Relay 3 status indicator: Y = On; N = Off
31	Relay 4: Status	Relay 4 status indicator: Y = On; N = Off
32	Relay 5: Status	Relay 5 status indicator: Y = On; N = Off
33	Relay 6: Status	Relay 6 status indicator: Y = On; N = Off
34	Relay 7: Status	Relay 7 status indicator: Y = On; N = Off
35	Relay 8: Status	Relay 8 status indicator: Y = On; N = Off
36	Weekday: 1-7	Weekday: 1 = Mon, 7 = Sun
37	Date: Day 1st number	Date: Day 1st number (tens)
38	Date: Day 2nd number	Date: Day 2nd number (units)
39	Date: Month 1st number	Date: Month 1st number (tens)
40	Date: Month 2nd number	Date: Month 2nd number (units)
41	Date: Year 1st number	Date: Year 1st number (tens)
42	Date: Year 2nd number	Date: Year 2nd number (units)
43	Time: Hours 1st number	Time: Hours 1st number (tens)
44	Time: Hours 2nd number	Time: Hours 2nd number (units)
45	Time: Minutes 1st number	Time: Minutes 1st number (tens)
46	Time: Minutes 2nd number	Time: Minutes 2nd number (units)
47	Time: Seconds 1st number	Time: Seconds 1st number (tens)
48	Time: Seconds 2nd number	Time: Seconds 2nd number (units)
49	Daylight 0-999 lux	Daylight (1st number (hundreds))
50	Daylight 0-999 lux	Daylight (2nd number (tens))
51	Daylight 0-999 lux	Daylight (3rd number (units))
52	Test sum: 1st number	Test sum 1st number (ten thousands)
53	Test sum: 2nd number	Test sum 2nd number (thousands)
54	Test sum: 3rd number	Test sum 3rd number (hundreds)
55	Test sum: 4th number	Test sum 4th number (tens)
56	Test sum: 5th number	Test sum 5th number (units)
57	End detection	End detection 0x03

---

## 2. Installation and start-up

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## 2.0.1. Installation notes



Installation, testing, operational start-up and troubleshooting should only be performed by an electrician.



### **DANGER!**

#### **Risk to life from live voltage (mains voltage)!**

There are unprotected live components within the device.

- VDE regulations and national regulations are to be followed.
- Ensure that all lines to be assembled are free of voltage and take precautions against accidental switching on.
- Do not use the device if it is damaged.
- Take the device or system out of service and secure it against unintentional use, if it can be assumed, that risk-free operation is no longer guaranteed.

The device is only to be used for its intended purpose. Any improper modification or failure to follow the operating instructions voids any and all warranty and guarantee claims.

After unpacking the device, check it immediately for possible mechanical damage. If it has been damaged in transport, inform the supplier immediately.

The device may only be used as a fixed-site installation; that means only when assembled and after conclusion of all installation and operational start-up tasks and only in the surroundings designated for it.

Elsner Elektronik is not liable for any changes in norms and standards which may occur after publication of these operating instructions.

## 2.1. Installation of the weather station

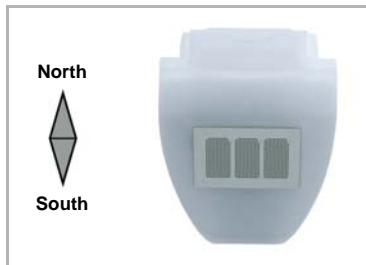
### **Installation location**

Select an installation position on the building where the sensors can measure wind, rain and sunshine without hindrance. No structural elements should be mounted above the weather station from which water could continue to drop on to the precipitation sensor even after rain or snow has stopped.

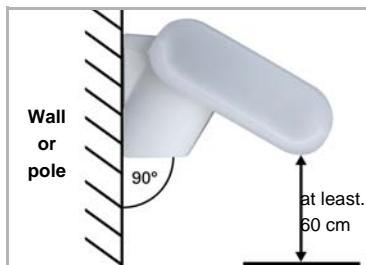
The weather station should not be shaded by structures or, for example, trees. At least 60 cm of free space must be left beneath the weather station to enable correct wind measurement and prevent snowing in when there is snow. Please ensure that the extended awning does not cast shade on the unit, and that this is not protected from the wind.

Temperature measurements can also be distorted by external influences such as by warming or cooling of the building structure on which the sensor is mounted (sunlight, heating or cold water pipes).

Magnetic fields, transmitters and interfering fields from electricity consumers (e.g. fluorescent lamps, neon signs, switched-mode power supplies etc.) can interfere with or even cut out reception of the GPS signal.



*Fig. 1  
Align the weather station facing south.*



*Fig. 2  
The weather station must be attached to a vertical wall (or a pole).*



*Fig. 3  
The weather station must be mounted in the horizontal transverse direction.*

## **Attaching the mount**

The weather station comes with a combination wall/pole mount. The mount comes adhered by adhesive strips to the rear side of the housing.

Fasten the holder vertically to the wall or pole.

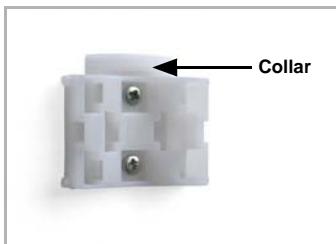


Fig. 4

For wall mounting: Flat side to the wall, crescent moon-shaped crosspiece facing up.

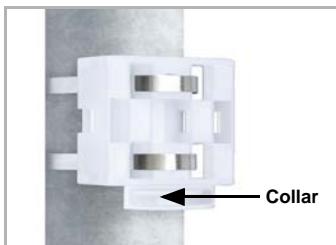


Fig. 5

For pole mounting: curved side to the pole, crosspiece facing down.



Fig. 6

Different mounting arms are available from Elsner Elektronik as additional, optional accessories for flexible installation of the weather station on a wall, pole or beam.

Example of the use of a mounting arm: Due to flexible ball joints, the sensor can be brought into ideal position.



Fig. 7

Example use of the hinge arm mounting: With the hinge arm mounting, the weather station projects from beneath the roof overhang. Sun, wind and precipitation can act upon the sensors without hindrance.

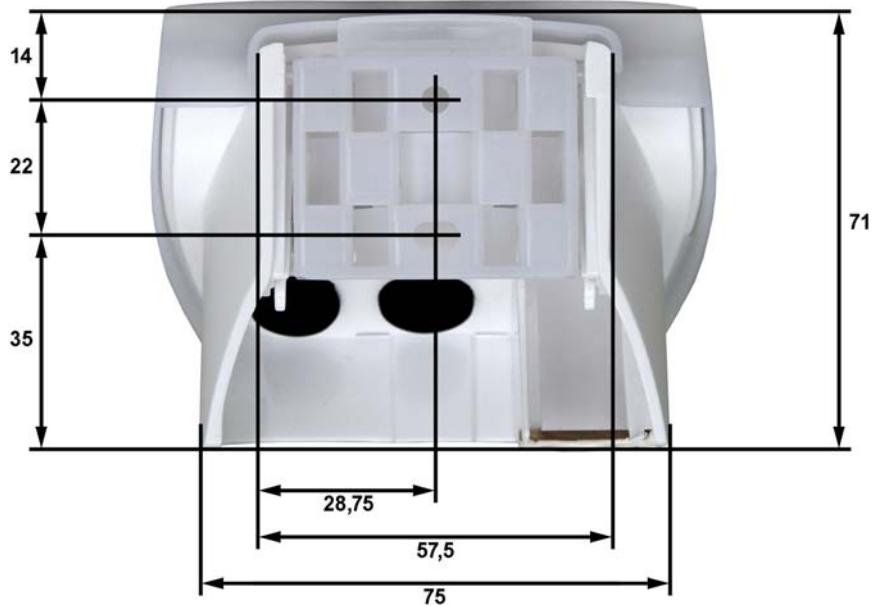
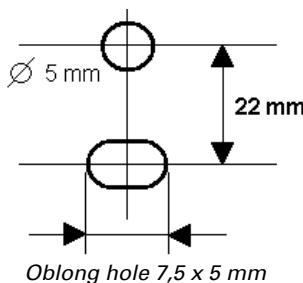


**Fig. 8**  
Example use of the hinge arm mounting:  
Fitting to a pole with worm drive hose clips

### Rear view and drill sketch

**Fig. 9 a+b**  
Drill sketch.

Dimensions of the rear side of the housing with holder, dimensions in mm. Divergences are possible for technical reasons.



## Preparing the weather station



The weather station lid with the rain sensor latches into place on the lower edge to the right and left. Remove the lid from the weather station. Proceed carefully to avoid tearing off the cable connection between the circuit board in the lower section and the rain sensor in the lid (cable with plug).

Guide the connecting lead through the rubber seal on the underside of the weather station and connect voltage and bus to the terminals provided for this purpose.

The feed to the weather station must be a maximum of 30 m long. The connection is made with off-the-shelf UV-resistant telephone cable (J-Y(ST)Y 2x2x0.8).

## Layout of the circuit board

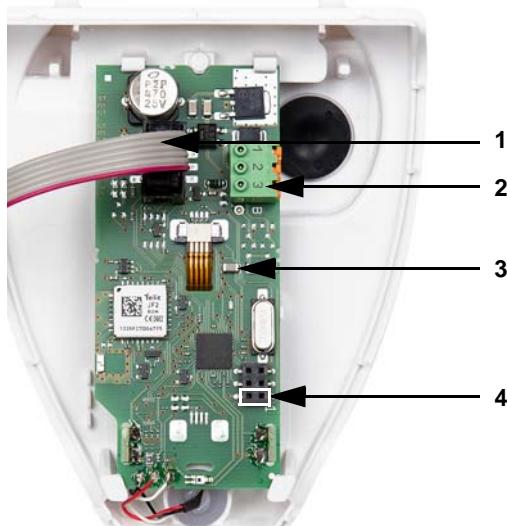


Fig. 11: Overview board

- 1 Slot for cable connection to the precipitation sensor in the housing lid
- 2 Slot for connecting the PS8A, 1: +24V DC | 2: GND | 3: Data (massive conductors up to 0.8 mm<sup>2</sup>)
- 3 Control LED GPS reception
- 4 Set jumper here!

## Mounting the weather station

Close the housing by placing the lid on the lower section. The lid must lock into place on the right and left with a distinct click.

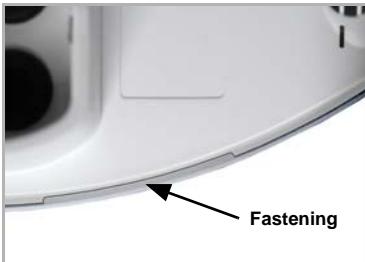


Fig. 12

*Check that the lid and lower section have properly latched into place! The diagram shows the closed weather station from below.*



Fig. 13

*Push the housing from above into the fitted holder. In doing this, the studs in the holder must click in to the tracks on the housing.*

For removal purposes, the weather station can be pulled upwards against the resistance of the notches.

### 2.1.1. Installation notes for the weather station

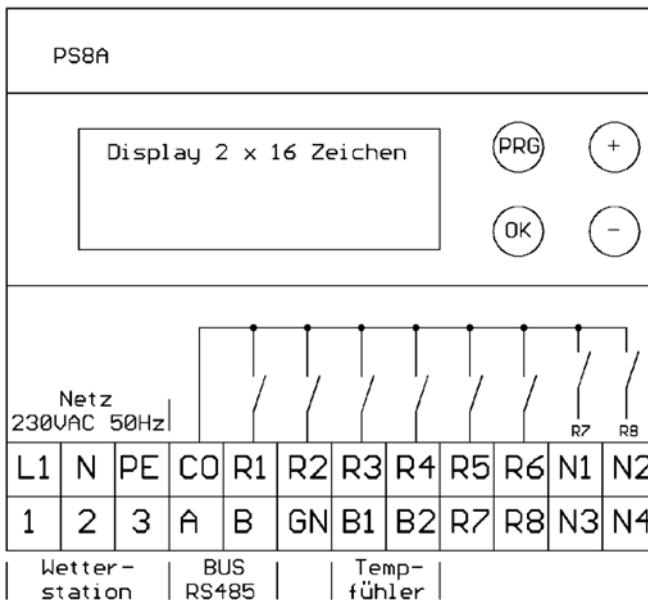
Do not open the weather station when water (rain) can enter into it: Even a few drops may damage the electronics.

During installation care must be taken that the temperature sensor (small plate on the underside of the housing) is not damaged. The cable connection between the plate and the rain sensor should also not be torn off or bent when being connected.

After installation, remove all transport protection stickers present.

The wind measurement can first be output about 30 seconds after applying the supply voltage.

## 2.2. Connecting the evaluation unit



Achtung: A=TR B=TI

L1 Phase 230 V, 50 Hz

1 Weather station +24 V

N Neutral wire

2 Weather station GND

PE Earth lead

3 Weather station Data

CO Common connection for the output relays

A RS485 bus

R1 Output relay 1

B RS485 bus

...

GN Minus

R8 Output relay 8

B1 Inside temperature sensor T-KTY82

B2 Inside temperature sensor T-KTY82

Caution: A = TR, B = TI

## 2.3. Maintenance and care

### Weather station

The weather station should be regularly checked twice a year for soiling and cleaned if required. If heavily soiled, the wind sensor may be unserviceable, regularly showing a rain warning or no longer recognising sunshine.

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## Evaluation unit

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To clean the evaluation unit, please use only a cloth moistened with water or a micro-fibre cloth.

The **Evaluation Unit PS8A** is fitted with a condenser which ensures that if there is a power failure, the clock in the unit continues to run for 30 minutes. If the power failure lasts for more than 30 minutes, a notification to re-set the clock appears in the display after the evaluation unit is switched on again.



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### **3. Setting functions**

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The notes below assume the factory settings of the unit. If a code number was set for access rights, such code must be entered first and only then can the unit be operated.

## 3.1. Selecting measured value display

Press the **PRG** key, if needed several times, until any measured value is displayed. Now press the **+** key to reach the next display:

Outs. T° xx.x°C  
Ins. T° xx.x°C

Temperature

Wind 0.0 m/s  
No rain|Day

Wind / rain / twilight

Sun E/S/W  
> 1K1 5K1 50K1

By day: Sun from east, south and west

Brightness  
355 lux

By night/twilight: Brightness

Tue 18-09-12  
16:24:48

Date and time

Output |1|2|3|4|  
Status |0|0|1|0|

Status of output relays 1-4

Output |5|6|7|8|  
Status |0|0|0|1|

Status of output relays 5-8

## 3.2. Set rated values for automatic mode

For the 8 relay outputs, in each case values can be set for sun (east, south and west), twilight, time switchings (5 times, one for each weekday), inside and outside temperature. The conditions for one relay can also be interlinked with another.

Press the **PRG** key, if needed several times, until the display shows:

Config. output R1?  
Push: PRG + OK –

Choose the relays you want to set with the + or – keys.  
Confirm with **OK**.

The display shows:

Rx closed when  
Eastern sun > xxKL

Set the sun value for east sun that must be exceeded  
to trip relay x.  
Confirm with **OK**.

Rx closed when  
South sun > xxKL

Set the sun value for south sun that must be exceeded  
to trip relay x.  
Confirm with **OK**.

Rx closed when  
Western sun > xxKL

Set the sun value for west sun that must be exceeded  
to trip relay x.  
Confirm with **OK**.

Rx closed when  
Brightness<xxx Lx

Set the light value that must be exceeded to trip relay.

Switching delay = 0 min., trip delay = 5 min.

If this function is to be used as a twilight switch, we recommend that you set approx.  
5 lux.

Confirm with **OK**.

Set up weekly  
time switch? No

Change with + or – to show **Yes**, in order to set the  
week's times.  
Confirm with **OK**.

Programming  
Mon ? Yes

Confirm with **Yes** to set the times for Monday.  
Change with + or – to show **No** to skip the time set-  
ting for Monday.  
Confirm with **OK**.

Rel. 1|Mon|Prog 1  
0: 0 to 0: 0

Set the time slot with the + or – keys. Each point must  
be confirmed with the **OK** key to reach the next entry  
point.

Now set the times 1 to 5 in which the relay x is to switch on on Monday. While pro-  
gramming from 0:00 to 0:00 the relay remains switched off.

Confirm with **OK**.

After setting the times 1 to 5, the display prompts you to program Tuesday.

Programming  
Tue ? Yes

Confirm with **Yes** to set the times for Tuesday.  
Change with + or – to show **No** to skip the time set-  
ting for Tuesday.  
Confirm with **OK**.

Copy programm  
Mon to Tue ? No

Change with + or - to show **Yes** to copy to Tuesday all the times that you have programmed for Monday. Alternatively, confirm with **No** to enter new times for Tuesday.

Confirm with **OK**.

Proceed accordingly with the remaining days of the week.

Rx closed when  
Ins. T° > xx°C

Set the inside temperature that must be exceeded to trip relay x.

Confirm with **OK**.

Rx closed when  
Ins. T° < xx°C

Set the level below which the inside temperature must fall to trip relay x.

Confirm with **OK**.

Rx closed when  
Outs. T° > xx°C

Set the outside temperature that must be exceeded to trip relay x.

Confirm with **OK**.

Rx closed when  
Outs. T° < xx°C

Set the level below which the outside temperature must fall to trip relay x.

Confirm with **OK**.

Rx closed when  
Wind > xx m/S

Set the wind speed that must be exceeded to trip relay x.

Confirm with **OK**.

Rx closed when  
Rain ? No

Select whether relay x is to trip in the event of rain or not. Change with + or - accordingly to show **Yes** or **No**.

Confirm with **OK**.

Rx closed when  
Alarm ? No

Select whether relay x is to trip in the event of an alarm or not. Change with + or - accordingly to show **Yes** or **No**.

There is an alarm incident if no data or if incorrect data is transferred by the weather station or by the inside temperature sensor.

Confirm with **OK**.

Parameters Rx  
Function – OR –

Choose whether the set parameters are to be linked. Change with + or - accordingly to show **OR** or **AND**.

Confirm with **OK** to finalize the setting for the relay. Press the **PRG** key to revert to automatic mode and to the measured value display.

### ***OR coupling***

If one of the conditions you have chosen is *TRUE*, the relevant relay trips. All parameters must be *FALSE* to switch the relevant relay off.

Example: If the windows are to close for rain or wind at > 7 m/s, then the relevant parameters must be selected and the coupling type set to *OR*.

### ***AND coupling***

If all of the conditions you have chosen are *TRUE*, the relevant relay trips. One parameter must be *FALSE* to switch the relevant relay off.

Example: If awnings for south sun of > 20 kL and inside temperature of > 20°C (heat gain) and outside temperature of > 5°C (frost protection) are to be lowered, then the relevant parameters must be selected and the coupling type set to *AND*.

Rain and wind parameters are delayed by 5 minutes. This means that, for example, after falling below the selected light value, the relevant relay remains switched on for further 5 minutes. A switching hysteresis of 1°C is set for temperature-dependent parameters.

## **3.3. Setting date and time**

Press the **PRG** key, if needed several times, until the display shows:

Config. output R1?  
Push: PRG + OK –

Continue to scroll on this menu level with the + or – key until the display shows:

Set Date/Clock?  
Push: PRG + OK –

Confirm with **OK**.

Dat. Mo 01-01-00  
Push: PRG + OK –

Set the date with the + or – keys. Each point must be confirmed with the **OK** key to reach the next entry point.

Clock 00: 00: 00  
Push: PRG + OK –

Set the time with the + or – keys. Each point must be confirmed with the **OK** key to reach the next entry point.

Press the **PRG** key after setting the time to revert to automatic mode and to the measured value display.

If the mains voltage fails for more than 30 minutes, the time must be reset. A corresponding message appears as a reminder on the display. While the time is not set, all time-dependent switching functions are out of action. If wireless reception is possible, the time is synchronized independently by the controller.

## 3.4. Setting the delay for awnings

Press the **PRG** key, if needed several times, until the display shows:

Config. output R1?  
Push: PRG + OK -

Continue to scroll on this menu level with the + or - key until the display shows:

Sun time delay?  
Push: PRG + OK -

Confirm with **OK**.

Delay ON 1 min  
Push: PRG + OK -

Set the delay for closing the relay with the + or - keys.

The set sun value must be exceeded constantly so that the relevant relay closes.

Confirm with **OK**.

Delay OFF 12 min  
Push: PRG + OK -

Set the delay for tripping the relay with the + or - keys.

The set sun value must be constantly below the value set for this time so that the relevant relay closes.

Confirm with **OK**.

Press the **PRG** key to revert to automatic mode and to the measured value display.

## 3.5. Delay for rain and wind alarm

Rain and wind alarm are switched without any switching delay for as long as the set threshold is exceeded.

After falling below the threshold, both the rain and wind alarms are deleted again after a delay of 5 minutes.

The delay times for the rain and wind alarms are default settings in the software programming and cannot be changed!

## 3.6. Switching relays manually

Press the **PRG** key, if needed several times, until the display shows:

Config. output R1?  
Push: PRG + OK -

Continue to scroll on this menu level with the + or - key until the display shows:

Output override?  
Push: PRG + OK -

Confirm with **OK**.

Output Rx manu. ?  
Push: PRG + OK -

Select the relay that you would like to operate manually with the + or - keys.  
Confirm with **OK**.

Rx is opened  
Push: PRG + OK -

Switch the relay **open** with the + key and **close** it with the - key.

Press the **PRG** key to revert to automatic mode and to the measured value display.

## 3.7. Setting the code number

When the unit is delivered, the code number which bars parameter setting for unauthorized persons is set to 0000 and thus switched off. The unit is not protected and can be operated without entering a code number. If a code number is to be allocated, proceed as follows:

Hold the **OK** key down and press the - key simultaneously. The display shows:

Modify code ?  
Push: PRG + OK -

Confirm with **OK**.

New code: \*\*\*\*\*  
Push: + OK -

Now use the + or - keys to set a 4-digit code number. Each point must be confirmed with the **OK** key to reach the next entry point.

Press the **PRG** key to revert to automatic mode and to the measured value display.

The set code number must be entered before each time the unit is used. This is how you protect the unit against use by unauthorized persons. Note that the code number **0000** has the same meaning as switching protection **off**.

## 3.8. Adjusting the temperature sensors

Temperature sensor faults attributable to tolerances or incorrect assembly can be compensated by the software (inside and outside temperatures).

Hold the **OK** key down and press the - key simultaneously. The display shows:

Modify code ?  
Push: PRG + OK -

Continue to scroll on this menu level with the + or – key until the display shows:

Adjust T° ?  
Push: PRG + OK –

Confirm with **OK**.

Outs. T° xx. x°C  
Push: PRG + OK –

Set the correct outside temperature value with the + or – keys.  
Confirm with **OK**.

Ins. T° xx. x°C  
Push: PRG + OK –

Set the correct inside temperature value with the + or – keys.  
Confirm with **OK**.

Press the **PRG** key to revert to automatic mode and to the measured value display.

## 3.9. Setting display contrast

Hold the **OK** key down and press the – key simultaneously. The display shows:

Modify code ?  
Push: PRG + OK –

Continue to scroll on this menu level with the + or – key until the display shows:

LCD Contrast ?  
Push: PRG + OK –

Confirm with **OK**.

Contrast 200  
Push: PRG + OK –

Adjust the display contrast with the + or – keys.  
Confirm with **OK**.

Press the **PRG** key to revert to automatic mode and to the measured value display.

## 3.10. Setting the language

You can have the display texts shown in German, French or English.

Hold the **OK** key down and press the – key simultaneously. The display shows:

Modify code ?  
Push: PRG + OK –

Continue to scroll on this menu level with the + or – key until the display shows:

GER/FRA/UK: ?  
Push: PRG + OK –

Confirm with **OK**.

GER/FRA/UK: GER  
Push: PRG + OK -

Change to desired language by using the + or - keys.

GER = German

FRA = French

UK = English

Confirm with **OK**.

Press the **PRG** key to revert to automatic mode and to the measured value display.





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