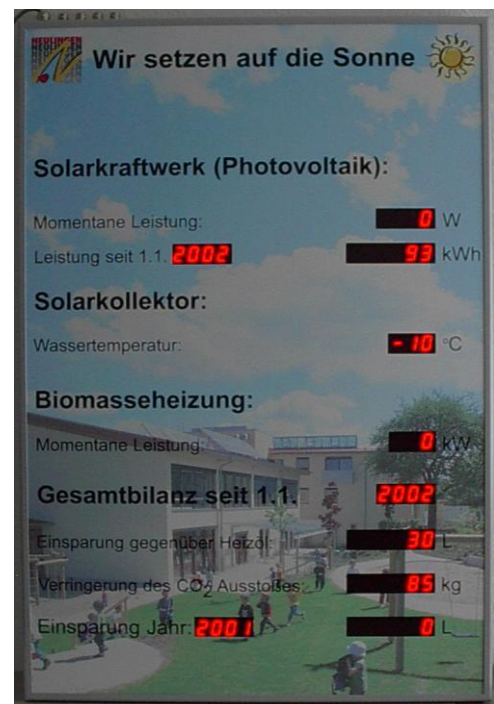
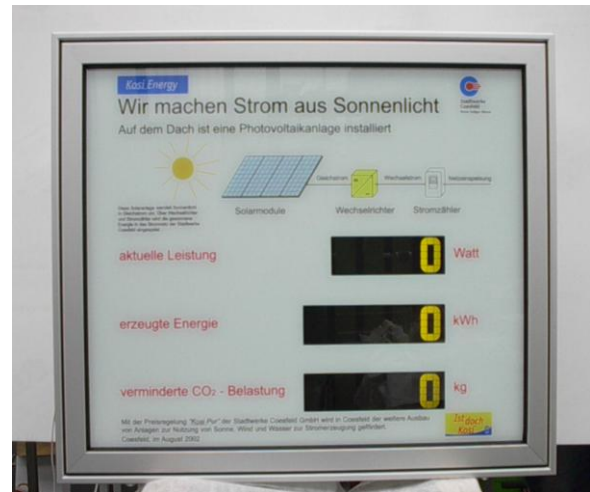


Photovoltaic Displays



- ⇒ LCD or LED technique
- ⇒ Different values can be displayed
- ⇒ Customized front design

GENERAL

The photovoltaic displays collect and display values from a photovoltaic system, thermic system, heat energy system and others.

The displays can be used for indoor as well as outdoor purposes. They are readable even in direct sunshine.

The control takes places via S0-impulse or all other standard interfaces.

You can design the front panel individually according to your wishes.

APPLICATION FIELD

Display of power and energy values of:

- Photovoltaic systems
- Thermic systems
- Wind power stations
- Environmental measuring systems
- Biomass systems

The following values can be displayed:

- Actual power in [W]
- Annual energy in [kWh]
- Total energy in [kWh]
- CO₂-saving in [kg]
- Power of solar radiation in [W/m²]
- Surface temperature of the modules in [°C]
- Outdoor temperature in [°C]
- Time
- More values on request

TECHNIQUE

You can get photovoltaic displays in LED and in LCD technique. Also you can choose any number of lines and characters per line.

Possibility of adjustment:

At all displays which are controlled via an S0-impulse you can preset the following values:

- Total energy in [kWh]
- Impulse number of the counter

All displays are equipped standardly with an overvoltage protection.

LED technique

Indoor usage

No direct sunshine into the display

7-segment displays



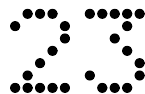
Standard character height: 25, 60, 100, 130 mm

Character colours: red, yellow, green

Outdoor usage

Readable in direct sunshine

5x7-matrix-displays



Standard character height: 30, 50 mm

Character colours: red, yellow, green, blue, white

Viewing angle: 110° horizontal, 55° vertical

10x14- or 10x16-matrix-displays



Standard character height : 60, 75, 100, 120, 200, 240, 310, 365 mm

Character colours: red, yellow, green, blue, white

Viewing angle: 110° horizontal, 55° vertical

Our displays can be used for indoor as well as outdoor purposes. They are readable even in direct sunshine and include an automatic brightness control.

Besides our standard character colours red, yellow and green the LEDs are also available in white and blue.

LCD technique

The LCD technique is usable for indoor as well as outdoor purposes. The LCD displays are readable in direct sunshine. Their viewing angle is nearly endless wide. The characters are available in the so-called 7-segment font or in the 38-segment font.

7-segment font

The 7-segment font is used for numerical purposes. All numbers, some letters and special characters can be displayed.



Standard character height:	60, 100, 150, 250 mm
Character colours:	yellow font on dark background white font on blue background
Module technique:	transflective (with backlighting of the LCD glasses) reflective (without backlighting, because of utilisation of the surrounding light)
Character set:	all numbers 0-9, some letters and special characters
Viewing angle:	140°

38-segment font

The 38-segment font is used for alphanumerical purposes. All numbers, all capital letters and some special characters are represented.



Standard character height:	60, 100, 160, 250 mm
Character colours:	yellow font on dark background white font on blue background
Module technique:	transflective (with backlighting of the LCD glasses) reflective (without backlighting, because of utilisation of the surrounding light)
Character set:	all numbers 0-9, all capital letters, some special characters
Viewing angle:	140°

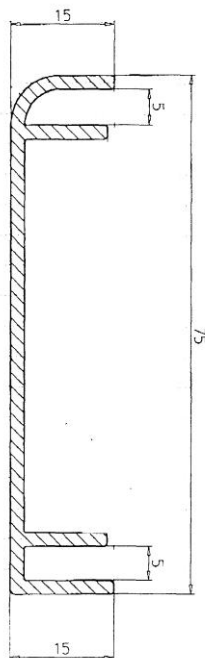
INTERFACES

- S0-impulse from the power meter with any number of impulses (this can be adjusted in the display)
- Also several S0-impulses can be read in and then added together internally to a total power.
- Can count heat quantity
- Analog: 0..10V or 0/4..20mA
- Serial: RS 232, RS 485 (from various converters)
- fieldbus: Profibus
- Ethernet: TCP/IP-Protocol

THE HOUSINGS

Housing of the Series AL075

construction:	1-or 2-sided
application field:	only indoor
depth:	75 mm
housing material:	aluminium profile
housing colour:	standard: powder-coated in RAL 5007; other RAL-colours also deliverable
open the housing:	at the left or right side



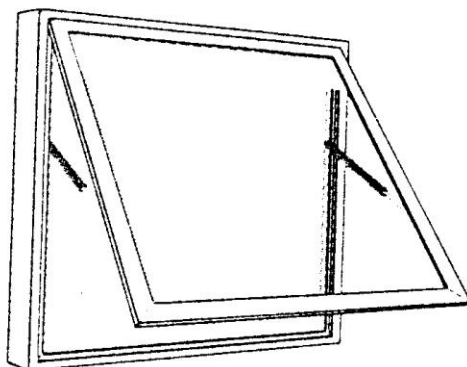
Housing of the Series AL042

construction:	1-sided
application field:	only indoor
depth:	42 mm
housing material:	aluminium profile
housing colour:	standard: silver anodized
open the housing:	rotor DIN left or right

Housing of the Series AL060

construction:	1-sided
application field:	indoor and outdoor weatherproof and especially suitable for outdoor purposes As the housing has a forced ventilation, under normal conditions there is no condensation inside the housing.
depth	60 mm
housing material:	double section aluminium profile
housing colour:	standard: silver anodized; other RAL-colours on request
open the housing:	from the front: Please unlock the front door and turn it up. The front door will be kept open by gas-pressurized springs.
usage:	for LED displays

Open the housing by gas-pressurized springs.



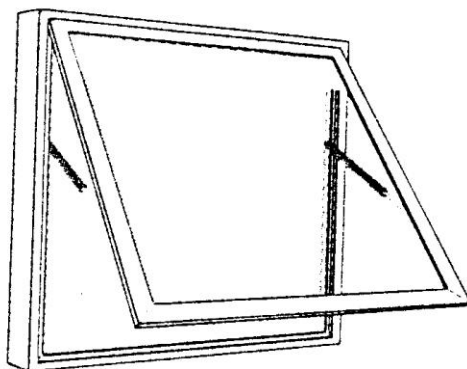
Standard sizes:

Designation	W	x	H	x	D
W7	790	x	790	x	60 mm
W8	970	x	820	x	60 mm
W9	1.350	x	1.060	x	60 mm
W11	1.600	x	1.060	x	60 mm

Housing of the Series AL120

construction:	1-sided
application field:	indoor and outdoor weatherproof and especially suitable for outdoor purposes As the housing has a forced ventilation, under normal conditions there is no condensation inside the housing.
depth	120 mm
housing material:	double section aluminium profile
housing colour:	standard: silver anodized; other RAL-colours on request
open the housing:	from the front: Please unlock the front door and turn it up. The front door will be kept open by gas-pressurized springs.
usage:	for LCD displays

Open the housing by gas-pressurized springs.



Standard sizes:

Designation	W	x	H	x	D
W7	790	x	790	x	120 mm
W8	970	x	820	x	120 mm
W9	1.350	x	1.060	x	120 mm
W11	1.600	x	1.060	x	120 mm

You can choose all outdoor housings for wall mounting as well as for pillar assembly. When dealing with pillar assembly, the corresponding base baskets can be delivered as well.

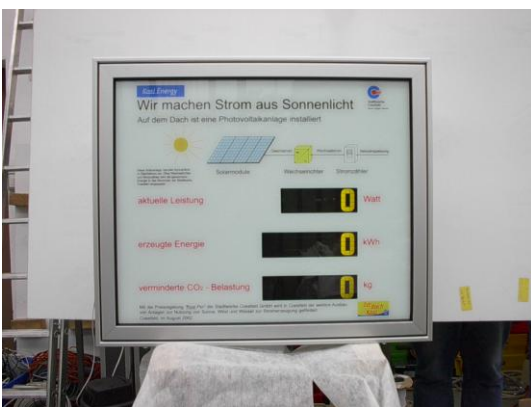
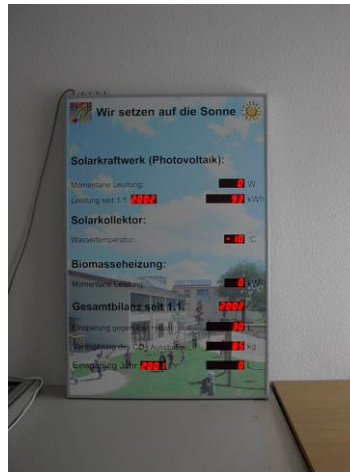
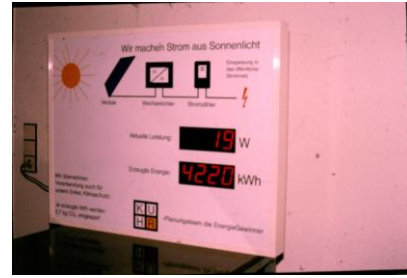
The front panel is made of ESG-glass. The digital print is fixed behind the panel, so that there is no danger of the digital print foil being damaged.

The digital print foil is especially suitable for outdoor purposes. It is resistant against UV-light, temperature and weather impacts. For example it is also used for motorcar lettering.

Design of the posts:

Rectangular to concrete in,	80 x 40 mm,	Length 2.400 mm
Rectangular to dowel on,	80 x 40 mm,	Length 2.150 mm
Round to concrete in,	Diameter 80 mm,	Length 2.400 mm
Round to dowel on,	Diameter 80 mm,	Length 2.150 mm

Photographic Gallery



Our standard displays of the LED series PV (1/2)

designation	colour LED	readable in sunshine	technique	character height[mm]	usage	no.of values	no. of digits	front panel	print	dimension (WxHxD) in[mm]
PV 0205-25-0-S-R	red	no	7-segment	25	indoor	2	5	Polycarbonat	labelling	600 x 250 x 75
PV 0305-25-0-S-R	red	no	7-segment	25	indoor	3	5	Polycarbonat	labelling	600 x 300 x 75
PV 0205-30-1-S-R	red	no	5x7-matrix	30	indoor	2	5	Polycarbonat	labelling	600 x 250 x 75
PV 0205-30-1-S-SR	red	yes	5x7-matrix	30	indoor	2	5	Polycarbonat	labelling	600 x 250 x 75
PV 0305-30-1-S-R	red	no	5x7-matrix	30	indoor	3	5	Polycarbonat	labelling	600 x 300 x 75
PV 0305-30-1-S-SR	red	yes	5x7-matrix	30	indoor	3	5	Polycarbonat	labelling	600 x 300 x 75
PV 0205-50-1-W7-SR	red	yes	5x7-matrix	50	outdoor	2	5	ESG-glass	digital print	790 x 790 x 60
PV 0205-50-1-W8-SR	red	yes	5x7-matrix	50	outdoor	2	5	ESG-glass	digital print	970 x 820 x 60
PV 0205-50-1-W9-SR	red	yes	5x7-matrix	50	outdoor	2	5	ESG-glass	digital print	1.350 x 1.060 x 60
PV 0305-50-0-W7-SR	red	yes	5x7-matrix	50	outdoor	3	5	ESG-glass	labelling	790 x 790 x 60
PV 0305-50-1-W8-SR	red	yes	5x7-matrix	50	outdoor	3	5	ESG-glass	digital print	970 x 820 x 60
PV 0305-50-1-W9-SR	red	yes	5x7-matrix	50	outdoor	3	5	ESG-glass	digital print	1.350 x 1.060 x 60
PV 0206-50-1-W7-SR	red	yes	5x7-matrix	50	outdoor	2	6	ESG-glass	digital print	790 x 790 x 60
PV 0206-50-1-W8-SR	red	yes	5x7-matrix	50	outdoor	2	6	ESG-glass	digital print	970 x 820 x 60
PV 0206-50-1-W9-SR	red	yes	5x7-matrix	50	outdoor	2	6	ESG-glass	digital print	1.350 x 1.060 x 60
PV 0306-50-1-W7-SR	red	yes	5x7-matrix	50	outdoor	3	6	ESG-glass	digital print	790 x 790 x 60
PV 0306-50-1-W8-SR	red	yes	5x7-matrix	50	outdoor	3	6	ESG-glass	digital print	970 x 820 x 60
PV 0306-50-1-W9-SR	red	yes	5x7-matrix	50	outdoor	3	6	ESG-glass	digital print	1.350 x 1.060 x 60

Our standard displays of the LED series PV (2/2)

designation	colour LED	readable in sunshine	technique	character height[mm]	usage	no.of values	no. of digits	front panel	print	dimension (WxHxD) in[mm]
PV 0205-60-0-W7-R	red	no	7-segment	60	indoor	2	5	ESG-glass	digital print	790 x 790 x 60
PV 0205-60-0-W9-R	red	no	7-segment	60	indoor	2	5	ESG-glass	digital print	1.350 x 1.060 x 60
PV 0205-60-0-F0-R	red	no	7-segment	60	indoor	2	5	ESG-glass	digital print	1.306 x 958 x 42
PV 0205-60-0-F1-R	red	no	7-segment	60	indoor	2	5	ESG-glass	digital print	958 x 712 x 42
PV 0305-60-0-W7-R	red	no	7-segment	60	indoor	3	5	ESG-glass	digital print	790 x 790 x 60
PV 0305-60-0-W9-R	red	no	7-segment	60	indoor	3	5	ESG-glass	digital print	1.350 x 1.060 x 60
PV 0305-60-0-F0-R	red	no	7-segment	60	indoor	3	5	ESG-glass	digital print	1.306 x 958 x 42
PV 0305-60-0-F1-R	red	no	7-segment	60	indoor	3	5	ESG-glass	digital print	958 x 712 x 42
PV 0206-60-0-W7-R	red	no	7-segment	60	indoor	2	6	ESG-glass	digital print	790 x 790 x 60
PV 0206-60-0-W9-R	red	no	7-segment	60	indoor	2	6	ESG-glass	digital print	1.350 x 1.060 x 60
PV 0206-60-0-F0-R	red	no	7-segment	60	indoor	2	6	ESG-glass	digital print	1.306 x 958 x 42
PV 0206-60-0-F1-R	red	no	7-segment	60	indoor	2	6	ESG-glass	digital print	958 x 712 x 42
PV 0306-60-0-W7-R	red	no	7-segment	60	indoor	3	6	ESG-glass	digital print	790 x 790 x 60
PV 0306-60-0-W9-R	red	no	7-segment	60	indoor	3	6	ESG-glass	digital print	1.350 x 1.060 x 60
PV 0306-60-0-F0-R	red	no	7-segment	60	indoor	3	6	ESG-glass	digital print	1.306 x 958 x 42
PV 0306-60-0-F1-R	red	no	7-segment	60	indoor	3	6	ESG-glass	digital print	958 x 712 x 42
PV 0205-75-2-W9-SR	red	yes	10x16-matrix	75	outdoor	2	5	ESG-glass	digital print	1.350 x 1.060 x 60
PV 0305-75-2-W9-SR	red	yes	10x16-matrix	75	outdoor	3	5	ESG-glass	digital print	1.350 x 1.060 x 60
PV 0206-75-2-W9-SR	red	yes	10x16-matrix	75	outdoor	2	6	ESG-glass	digital print	1.350 x 1.060 x 60
PV 0306-75-2-W9-SR	red	yes	10x16-matrix	75	outdoor	3	6	ESG-glass	digital print	1.350 x 1.060 x 60
PV 0205-120-2-W9-SR	red	yes	10x16-matrix	120	outdoor	2	5	ESG-glass	digital print	1.350 x 1.060 x 60
PV 0305-120-2-W9-SR	red	yes	10x16-matrix	120	outdoor	3	5	ESG-glass	digital print	1.350 x 1.060 x 60
PV 0206-120-2-W9-SR	red	yes	10x16-matrix	120	outdoor	2	6	ESG-glass	digital print	1.350 x 1.060 x 60
PV 0306-120-2-W9-SR	red	yes	10x16-matrix	120	outdoor	3	6	ESG-glass	digital print	1.350 x 1.060 x 60

Other sizes and configurations on request.

Our standard displays of the LCD series PV

designation	colour of font	back-ground	technique	character height [mm]	usage	no. of values	no. of digits	technique	print	dimension (BxHxT) in [mm]
PV 0205-60-0-W7-RL	dark	light grey	7-segment	60	outdoor	2	6	reflective	digital print	790 x 790 x 60
PV 0205-60-0-W9-RL	dark	light grey	7-segment	60	outdoor	2	6	reflective	digital print	1.350 x 1.060 x 60
PV 0305-60-0-W7-RL	dark	light grey	7-segment	60	outdoor	3	6	reflective	digital print	790 x 790 x 60
PV 0305-60-0-W9-RL	dark	light grey	7-segment	60	outdoor	3	6	reflective	digital print	1.350 x 1.060 x 60
PV 0205-60-0-W7-TL-Y	yellow	dark	7-segment	60	outdoor	2	6	transflectiv	digital print	790 x 790 x 120
PV 0205-60-0-W9-TL-Y	yellow	dark	7-segment	60	outdoor	2	6	transflectiv	digital print	1.350 x 1.060 x 120
PV 0305-60-0-W7-TL-Y	yellow	dark	7-segment	60	outdoor	3	6	transflective	digital print	790 x 790 x 120
PV 0305-60-0-W9-TL-Y	yellow	dark	7-segment	60	outdoor	3	6	transflective	digital print	1.350 x 1.060 x 120
PV 0206-100-0-W9-RL	dark	light grey	7-segment	100	outdoor	2	6	reflective	digital print	1.350 x 1.060 x 60
PV 0306-100-0-W9-RL	dark	light grey	7-segment	100	outdoor	3	6	reflective	digital print	1.350 x 1.060 x 60
PV 0206-100-0-W9-TL-Y	yellow	dark	7-segment	100	outdoor	2	6	transflective	digital print	1.350 x 1.060 x 120
PV 0306-100-0-W9-TL-Y	yellow	dark	7-segment	100	outdoor	3	6	transflective	digital print	1.350 x 1.060 x 120
PV 0205-60-38-W7-RL	dark	light grey	38-segment	60	outdoor	2	6	reflective	digital print	790 x 790 x 60
PV 0205-60-38-W9-RL	dark	light grey	38-segment	60	outdoor	2	6	reflective	digital print	1.350 x 1.060 x 60
PV 0305-60-38-W7-RL	dark	light grey	38-segment	60	outdoor	3	6	reflective	digital print	790 x 790 x 60
PV 0305-60-38-W9-RL	dark	light grey	38-segment	60	outdoor	3	6	reflective	digital print	1.350 x 1.060 x 60
PV 0205-60-38-W7-TL-Y	yellow	dark	38-segment	60	outdoor	2	6	transflective	digital print	790 x 790 x 120
PV 0205-60-38-W9-TL-Y	yellow	dark	38-segment	60	outdoor	2	6	transflective	digital print	1.350 x 1.060 x 120
PV 0305-60-38-W7-TL-Y	yellow	dark	38-segment	60	outdoor	3	6	transflective	digital print	790 x 790 x 120
PV 0305-60-38-W9-TL-Y	yellow	dark	38-segment	60	outdoor	3	6	transflective	digital print	1.350 x 1.060 x 120

You can also receive LCD-displays with white font on blue background without extra charge.

Other sizes and configurations on request.