

Wireless Powernet meter connector for input FPZ12S0-12V DC

Wireless Powernet meter connector with 3 SO inputs to input meter telegrams over the 230V power mains. Only 0.7 watt standby loss.

Modular device for DIN-EN 60715 TH35 rail mounting. 2 modules = 36mm wide, 58mm deep.

To input meter telegrams in the power mains, up to 10 FPZ12S0s and therefore 30 meters can be connected to form one group.

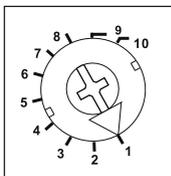
The 12V DC power supply is provided by a switching power supply unit SNT12-12V DC that is only 1 or 2 modules wide. With a power consumption of 12W or 24W, it can also power actuators as a rail mounted device.

The length of the 230V transmission line between input and output can be up to 300 meters. It is dependent on the contact resistance of the intermediate connections and the cable layout. If Powernet telegrams are not coupled into other external cables, this can be arranged using a phase coupler FPP12 so that output can be made to any line.

Up to 3 meters and their meter readings can be metered in the input FPZ12 via the display by pressing MODE and SET. At the same time, you can define from which output FPZ12 meter messages can be evaluated.

Meter telegrams can be output from the power mains either by one or several FPZ12USBs and their USB interfaces directly into an FVS-Safe or by FPZ12Fs into Eltako wireless networks.

Function rotary switch



Use the rotary switch to identify the FPZ group in order to limit it from another group which may be located in the same power network.

Up to 10 FPZ12S0 devices (= 30 meters) can be set as input in one group.

Initialisation: Initialisation starts after the power supply is applied, after the address is changed (menu) or after the group is changed (rotary switch). The green LED under the rotary switch lights up for 2s and the red LED lights up for 10s. During initialisation, SO impulses continue to be received and buffered. On completion of initialisation the data is sent.

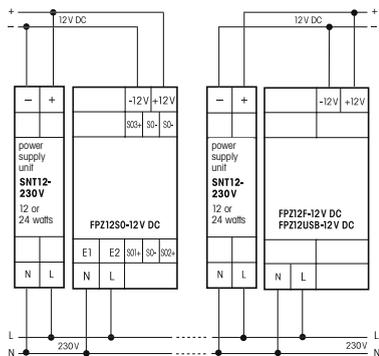
In case of extreme faults on the network, the FPZ automatically performs an initialisation.

The **red LED** accompanies the teach-in process and indicates incoming telegrams in operation by blinking briefly.

Technical data

Rated switching capacity	4 A/250V AC
Standby loss (active power)	0.7 W

Typical connection



Operational settings

Set the rotary switch to FPZ group 1..10 to which the FPZ belongs.

Display

■ Field 1:

The display changes the unit and/or the displayed meter every 4 seconds. The normal display is the unit of the meter status just displayed in Field 3.

For electricity: Megawatt hours MWh (display MW1, MW2, MW3)

Kilowatt hours kWh (here display KW1, KW2, KW3)

The display is supplemented by a + suffix for off-peak tariff

For gas: Cubic decametres dam³ (display DA1, DA2, DA3)

Cubic metres m³ (display m³1, m³2, m³3)

For water: Cubic decametres dam³ (display DA1, DA2, DA3)

Cubic metres m³ (display m³1, m³2, m³3)

For heat: Gigawatt hours GWh (display GW1, GW2, GW3)

Megawatt hours MWh (display MW1, MW2, MW3)

Kilowatt hours kWh

(display KW1, KW2, KW3)

■ Field 2:

Momentary value:

For electricity: Active power in watts (W) or kilowatts (kW)

The arrow on the left in Field 1 indicates the automatic switchover from 0-99 W to 0.1-99 kW.

For gas: Flow in centilitres/s (cl/s) or decalitres/s (dal/s) 1 dal[^] = 10 litres

The arrow on the left in Field 1 indicates the automatic switchover from 0-99 cl/s to 0.1-99 dal/s.

For water: Flow in centilitres/s (cl/s) - or decalitres/s (dal/s) 1 dal[^] = 10 litres

The arrow on the left in Field 1 indicates the automatic switchover from 0-99 cl/s to 0.1-99 dal/s.

For heat: Active power in watts (W) or kilowatts (kW)

The arrow on the left in Field 1 indicates the automatic switchover from 0-99 W to 0.1-99 kW.

■ Field 3:

Meter status: Switchover takes place alternately every 4 seconds.

Press the left **MODE** button to access the setting mode. Press the right **SET** button to page to the setting options, enter and/or change settings as required and then confirm by pressing **MODE**.

Enter code:

To access setting mode, enter a 4-digit code (0000 = as-delivered state) after applying the supply voltage and after locking the settings.

Press **MODE**, '**COD**' appears in the display and the first code digit flashes.

Press **SET** to enter the digit and press **MODE** to go to the next digit.

If the code is entered correctly, the display changes to setting mode (Z1 flashes), otherwise the device returns automatically to normal display.

Change code:

Press **MODE** then press **SET** at Z1 to search for the '**COD**' function. Select by pressing **MODE**. The first digit of the 4-digit code flashes.

Press **SET** to change the digit and press **MODE** to go to the next digit.

On completing your input, the device returns automatically to the normal display.

Caution: You can only change to the setting mode if you know the correct code. If you forget the code, a reset can be performed at Eltako if necessary.

To return to setting mode, press **MODE** again.

Enter device address:

Press **MODE** then press **SET** at Z1 to search for the '**DEV**' function. Select by pressing **MODE**.

Press **SET** to set the device address (1..10).

Caution: A separate address must be issued for every device within the same FPZ group.

After pressing **MODE** to confirm, the device returns automatically to normal display.

To return to setting mode, press **MODE** again.

Enter identification number:

Press **MODE** and then press **SET** at Z1 to search for '**ID**' function and press **MODE** to select.

The first digit of the 4-digit ID flashes. Press **SET** to change the digit and press **MODE** to go to the next digit.

Caution: The ID can be identical for all devices within the same FPZ group.

On completing your input, the device returns automatically to the normal display.

To return to setting mode, press **MODE** again.

Set meter 1:

Press **MODE** and then press **MODE** to select Z1. '**TYP**' flashes: Press **MODE** to confirm.

Press **SET** to enter the meter type:

- 1 = electricity
- 2 = gas
- 3 = water
- 4 = heat

Press **MODE** to confirm.

Depending on the meter type, the meter status unit flashes.

For electricity: Enter MWh, kWh, MWh+ und kWh+ (+ = off-peak tariff)

For gas: Enter DA³ and m³

For water: Enter DA³ and m³

For heat: Enter GWh, MWh and kWh

Press **SET** to change the meter status and press **MODE** to confirm.

Press briefly to increment by 1. Press long to increment the number rapidly. When you release and press long again, the direction changes.

MUL flashes on heat meters. Default setting is 1 and is usually retained.

Press **SET** to change to 10, if the value of the SO impulses should be set to 10 kWh (instead of 1 kWh). Press **MODE** to confirm.

'SO' flashes:

Press SET to set the number of SO impulses:
1, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100,
200, 300, 400, 500, 600, 700, 800, 900,
1000, 1100, 1200, 1300, 1400, 1500, 1600,
1700, 1800, 1900, 2000.

Press briefly to increment to the next number.
Press long to increment the number rapidly.
When you release and press long again, the
direction changes.

For electricity: Impulses per kWh of the meter

For gas: Impulses per m³ of the meter

For water: Impulses per m³ of the meter

For heat: Impulses per kWh of the meter

(at MUL = 10: Impulses per 10kWh)

Press MODE to confirm.

'TEL' flashes:

Press SET to select the 'on' setting to release
feeding the meter data from each meter to the
electricity grid.

Press SET to select the 'off' setting if the data
are not to be fed to the grid.

To return to setting mode, press MODE again.

Set meter 2:

Press MODE then press SET at Z1 to search
for the Z2 meter. Select by pressing MODE.

Enter other settings as described for the Z1
meter.

Set meter 3:

Press MODE then press SET at Z1 to search
for the Z3 meter. Select by pressing MODE.

Enter other settings as described for the Z1
meter.

Send teach-in telegram for meter 1:

Press MODE and then press MODE to select
Z1.

'TYP' flashes:

Press SET to search for the 'LRN' function and
press MODE to select.

Press SET to send a teach-in telegram to the
electricity grid and the device returns automa-
tically to the normal display.

Press MODE to return to the normal display
without sending a telegram.

To return to the setting mode, press MODE
again.

Send teach-in telegram for meter 2:

Press MODE then press SET at Z1 to search
for the Z2 meter. Select by pressing MODE.

Enter other settings as described for the Z1
meter.

Send teach-in telegram for meter 3:

Press MODE then press SET at Z1 to search
for the Z3 meter. Select by pressing MODE.

Enter other settings as described for the Z1
meter.

Lock settings:

Press MODE and SET together briefly. When
'LCK' flashes in Field 1, press SET to lock.

The arrow on the right in Field 1 indicates
locking.

If no button is pressed over a period of
30 minutes, locking takes place auto-
matically.

Unlock:

Press MODE to unlock. The code request
'COD' appears. Enter the code.

Automatic return to normal display:

If no button is pressed in setting mode for a
period of 20 seconds, the device returns auto-
matically to normal display.

Consumption telegrams are sent cyclically
approx. every 10 minutes under the following
conditions: approx. 20 seconds after the power
supply is switched on; when the tariff is
switched over (but not more frequently than
every 20 seconds); and when the meter status
is changed (but not more frequently than every
20 seconds).

Power telegrams are sent cyclically approx.
every 10 minutes under the following condi-
tions: approx. 20 seconds after the power
supply is switched on; when power changes
by 10% (but not more frequently than every
20 seconds); and when the tariff is switched
over (but not more frequently than every
20 seconds).

A time span of 8 seconds is maintained
between the transmission of individual
telegrams.

SO inputs:

Impulses of a length of >25 ms are detected
from up to 3 electricity, gas or heat meters
and are fed into the 230V mains supply
network in the form of meter telegrams.

FPZ12F and FPZ12USB devices can be used
to output meter telegrams.

Evaluation takes place on the PC (FVS soft-
ware) or using an FEA55.

Tariff switchover with electricity meters:

No voltage applied to the E1/E2 input:
HT (normal rate) is active. If a voltage of
230V AC is applied to the E1/E2 input, NT is
active and a + sign appears behind the
display kWh and MWh in Field 1. Tariff
switchover applies to all 3 electricity meters.

The power display in Field 2 depends on the number of SO impulses for every meter unit.

Minimum loads displayed for electricity
(detection time): max. 131s)

at 2000 impulses	approx. 14 Watt
at 1000 impulses	approx. 28 Watt
at 100 impulses	approx. 280 Watt
at 10 impulses	approx. 2800 Watt
at 1 impulse	approx. 28000 Watt

Minimum loads displayed for gas (detection time): max. 131s	
at 2000 impulses	approx. 0 cl/sec
at 1000 impulses	approx. 0 cl/sec
at 100 impulses	approx. 8 cl/sec
at 10 impulses	approx. 78 cl/sec
at 1 impulse	approx. 0,7 dal/sec

Minimum loads displayed for water (detection time): max. 131 s	
at 2000 impulses	approx. 0 cl/sec
at 1000 impulses	approx. 0 cl/sec
at 100 impulses	approx. 8 cl/sec
at 10 impulses	approx. 78 cl/sec
at 1 impulse	approx. 0,7 dal/sec

Minimum loads displayed for heat (detection time): max. 131s	
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Caution: Evaluation only useful under certain
conditions since it is typically 1 impulse per
kWh

at 2000 impulses	approx. 14 Watt
at MUL = 10	approx. 140 Watt
at 1000 impulses	approx. 28 Watt
at MUL = 10	approx. 280 Watt
at 100 impulses	approx. 280 Watt
at MUL = 10	approx. 2800 Watt
at 10 impulses	approx. 2800 Watt
at MUL = 10	approx. 28000 Watt
at 1 impulse	approx. 28000 Watt
at MUL = 10	approx. 280000 Watt



When an actuator is ready for
teach-in (the LED flashes at a
low rate), the very next incoming
signal is taught-in. Therefore, make
absolutely sure that you do not
activate any other sensors during
the teach-in phase.

Important note!

**Only skilled electricians may install this
electrical equipment otherwise there is
the risk of fire or electric shock.**