

Empowering the All Electric Society 

100 years of passion for
technology and innovation

Welcome

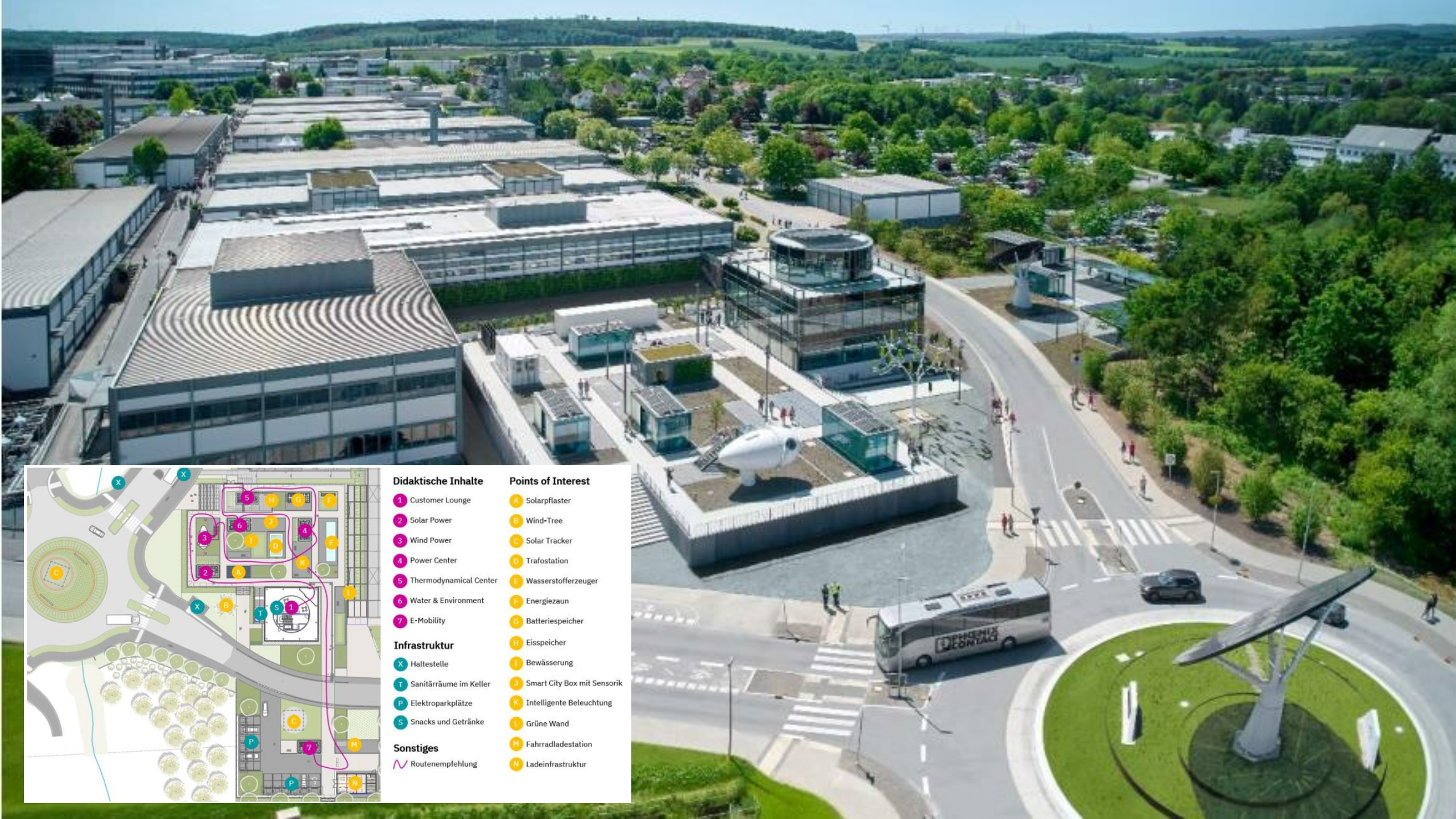
EZA-Regler – parametrieren statt programmieren

PV-Magazin Webinar 25.08.2023 „EZA-Regler parametrieren statt programmieren“

Agenda

- ein weiteres Highlight in OWL, der AES-Park
- Die Funktion eines EZA-Reglers
- Geplante Normative Veränderungen
- Die Architektur einer EZA-Regler-Lösung
- Die **Power Control Unit** von Phoenix Contact (PCU 4.0)

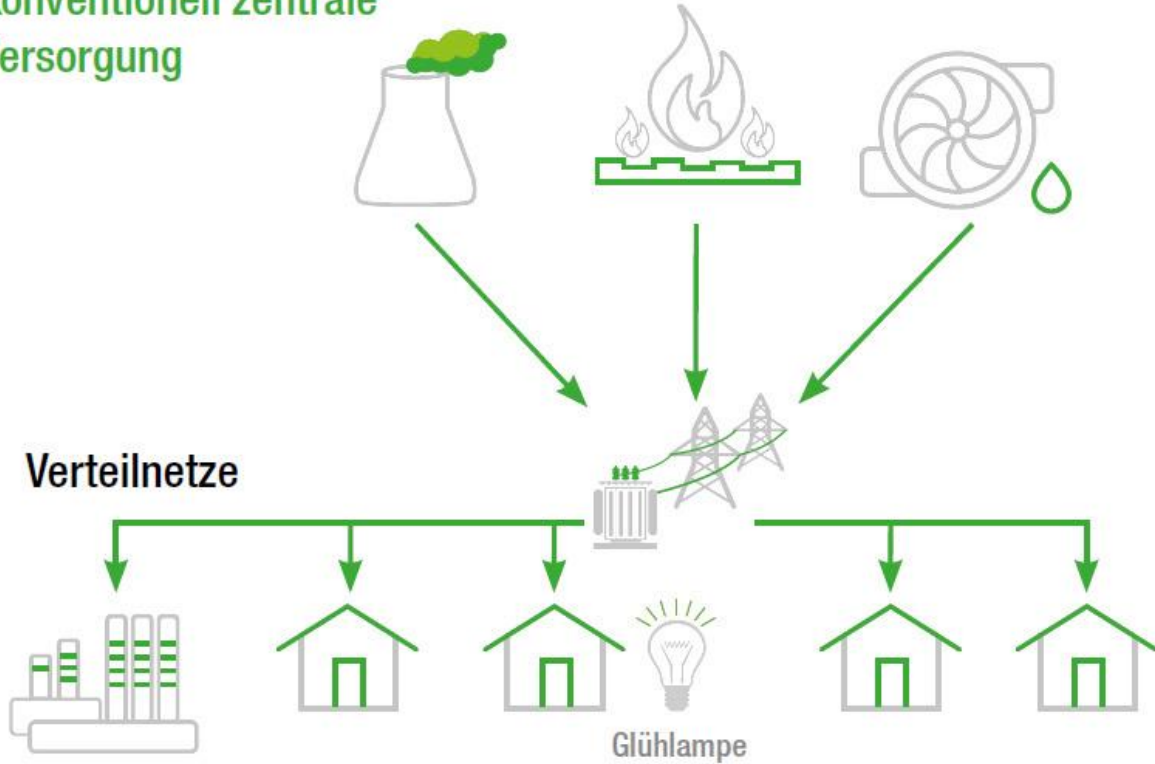




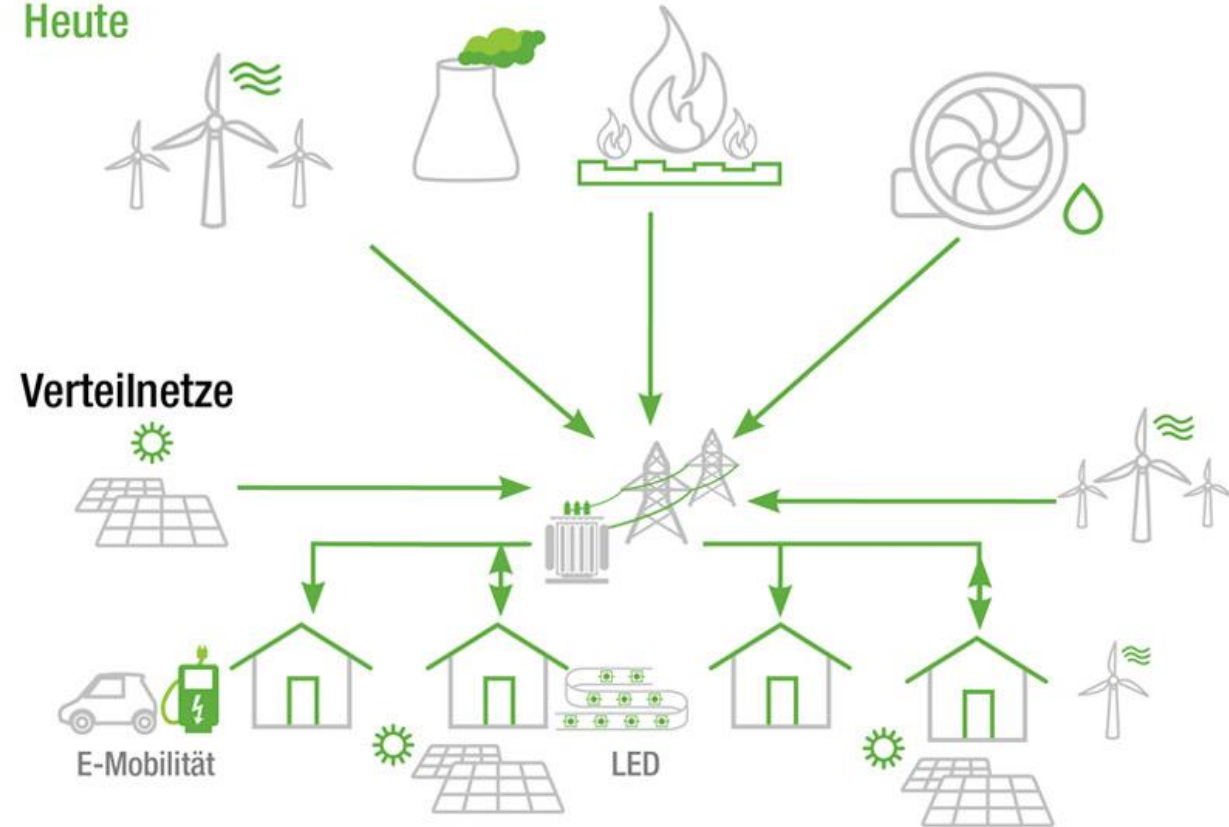
- | Didaktische Inhalte | Points of Interest |
|--------------------------|-------------------------------|
| 1 Customer Lounge | A Solarpflaster |
| 2 Solar Power | B Wind-Tree |
| 3 Wind Power | C Solar Tracker |
| 4 Power Center | D Trafostation |
| 5 Thermodynamical Center | E Wasserstoffherzeuger |
| 6 Water & Environment | F Energiezaun |
| 7 E-Mobility | G Batteriespeicher |
| Infrastruktur | H Eisspeicher |
| X Haltestelle | I Bewässerung |
| T Sanitärräume im Keller | J Smart City Box mit Sensorik |
| P Elektroparkplätze | K Intelligente Beleuchtung |
| S Snacks und Getränke | L Grüne Wand |
| Sonstiges | M Fahrradladestation |
| N Routenempfehlung | N Ladeinfrastruktur |

Mehr Volatilität, was bedeutet das für das Netz?

Konventionell zentrale
Versorgung



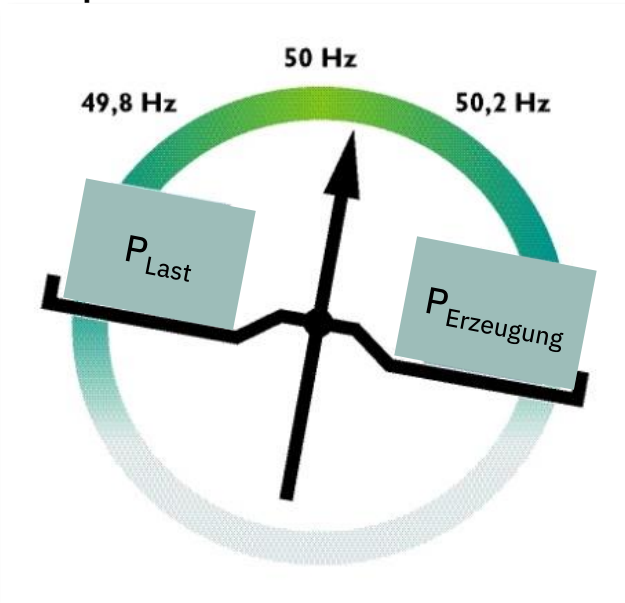
Heute



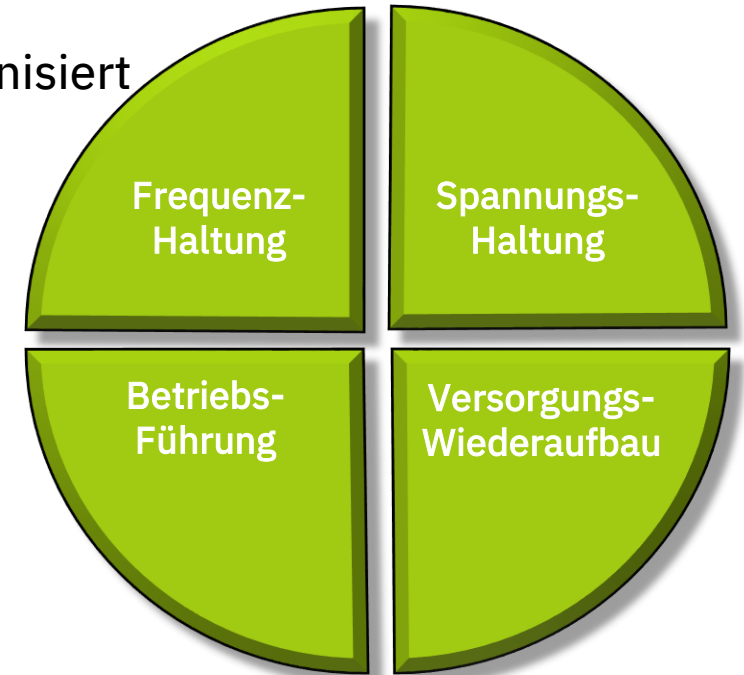
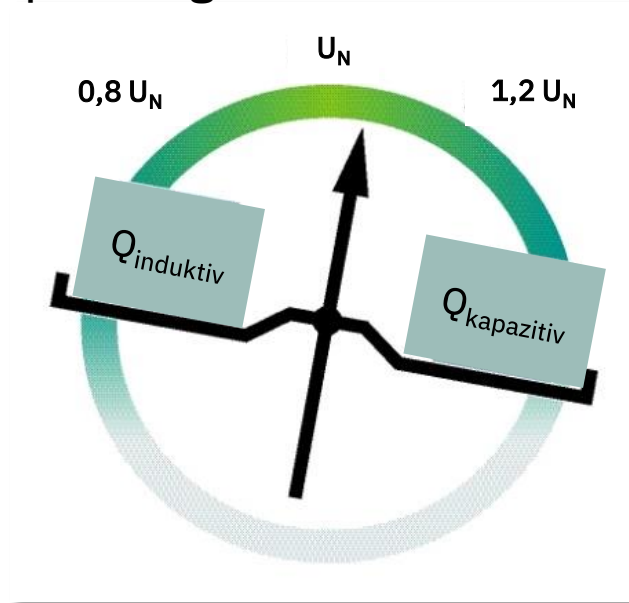
Systemdienstleistungen (SDL)

- Frequenz- und Spannungshaltung als zwei wesentliche Aufgaben der Systemdienstleistungen (SDL)
- Die Systemdienstleistungen werden vom Netzbetreiber erbracht/organisiert

Frequenz



Spannung



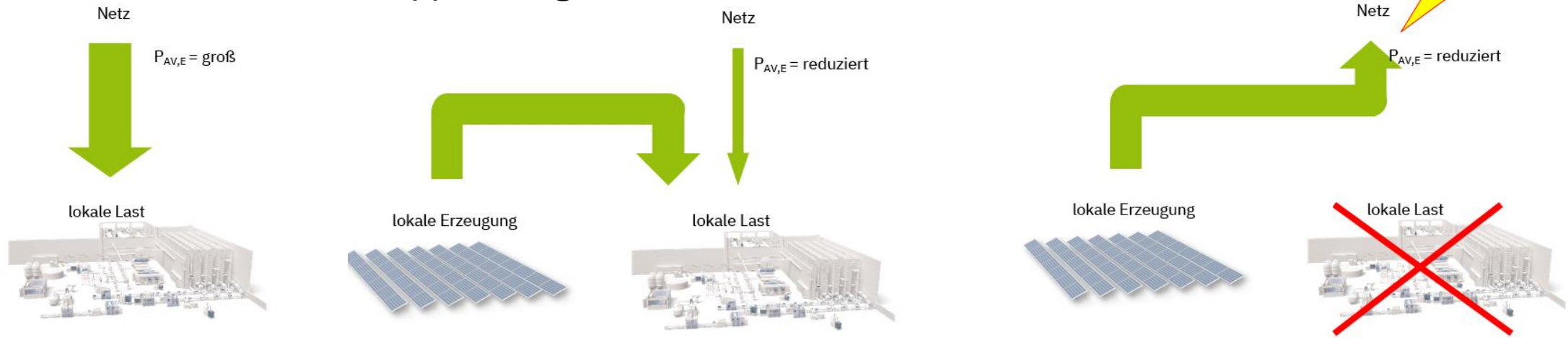
Die Normenlage ist in Bewegung



- Die barrierefreie Anbindung von Erzeugungsanlagen ist politisch gewollt, um möglichst viel Erneuerbare Energie in das Netz zu bekommen.
- Entwurf: Die VDE AR N 4110 greift zukünftig erst ab einer Erzeugungsleistung von 500 kW und/oder einer Einspeiseleistung ab 270 kW (NELEV Novelle, Herbst 2023)
[Erzeugungsanlagen bis 500 kW schneller ans Netz bringen \(vde.com\)](https://www.vde.com/erzeugungsanlagen-bis-500-kw-schneller-ans-netz-bringen)
- Netzbetreiber müssen die Netzstabilität gewährleisten und wollen daher die Energieanlagen in ihrem Verhalten beeinflussen können, dazu ist ein technischer Aufwand zu treiben.

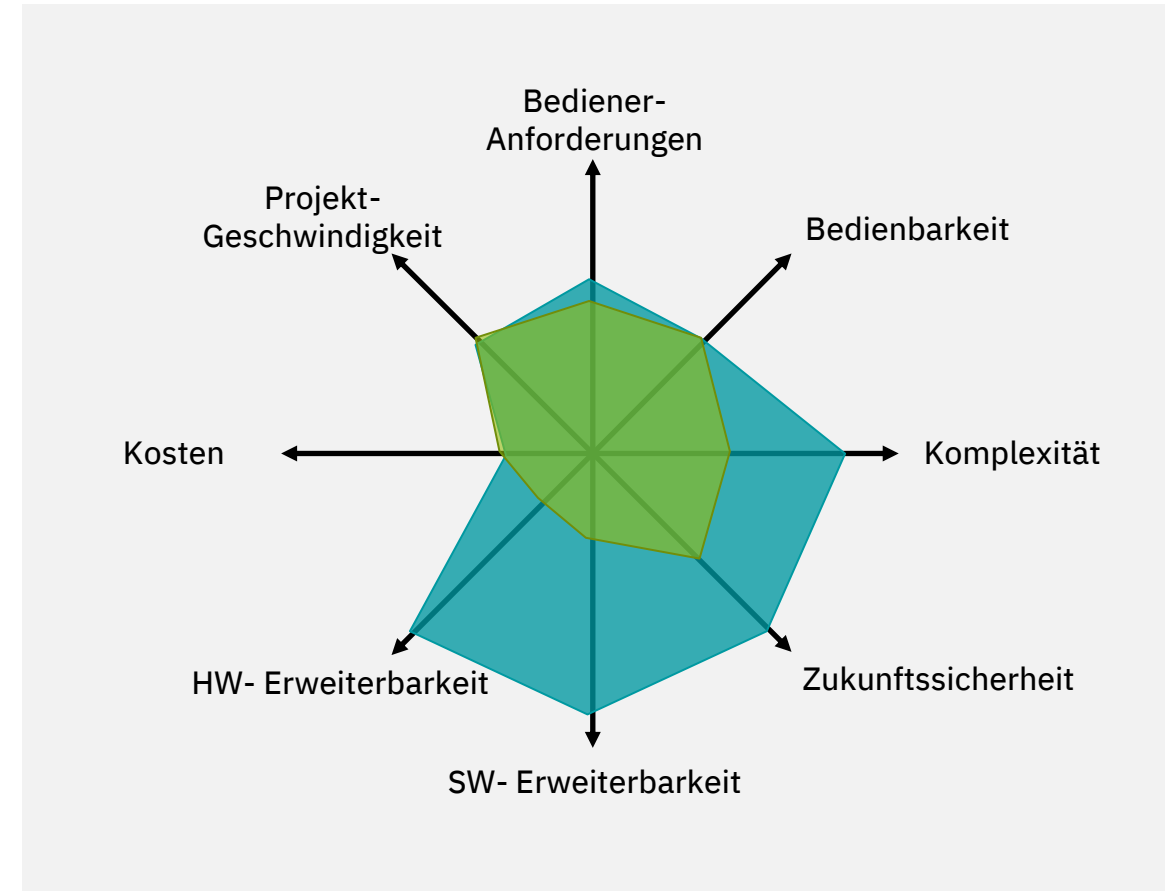
Was ist eigentlich $P_{AV,E}$?

- $P_{AV,E}$: Vereinbarte elektrische Anschlussleistung
- Bei Eigenerzeugung kann dieser Wert angepasst (reduziert) werden
- Eine Überlastung des Netzanschlusses muss vermieden werden (zweistufiges Konzept)
- Vorgaben dazu werden in der VDE AR N 4105 gemacht, diese sollen für die VDE AR N 4110 übernommen werden, dann wird es auch entsprechende Prüfkriterien zur Zertifizierung geben
- Aktuell kann dies bereits applikativ gelöst werden



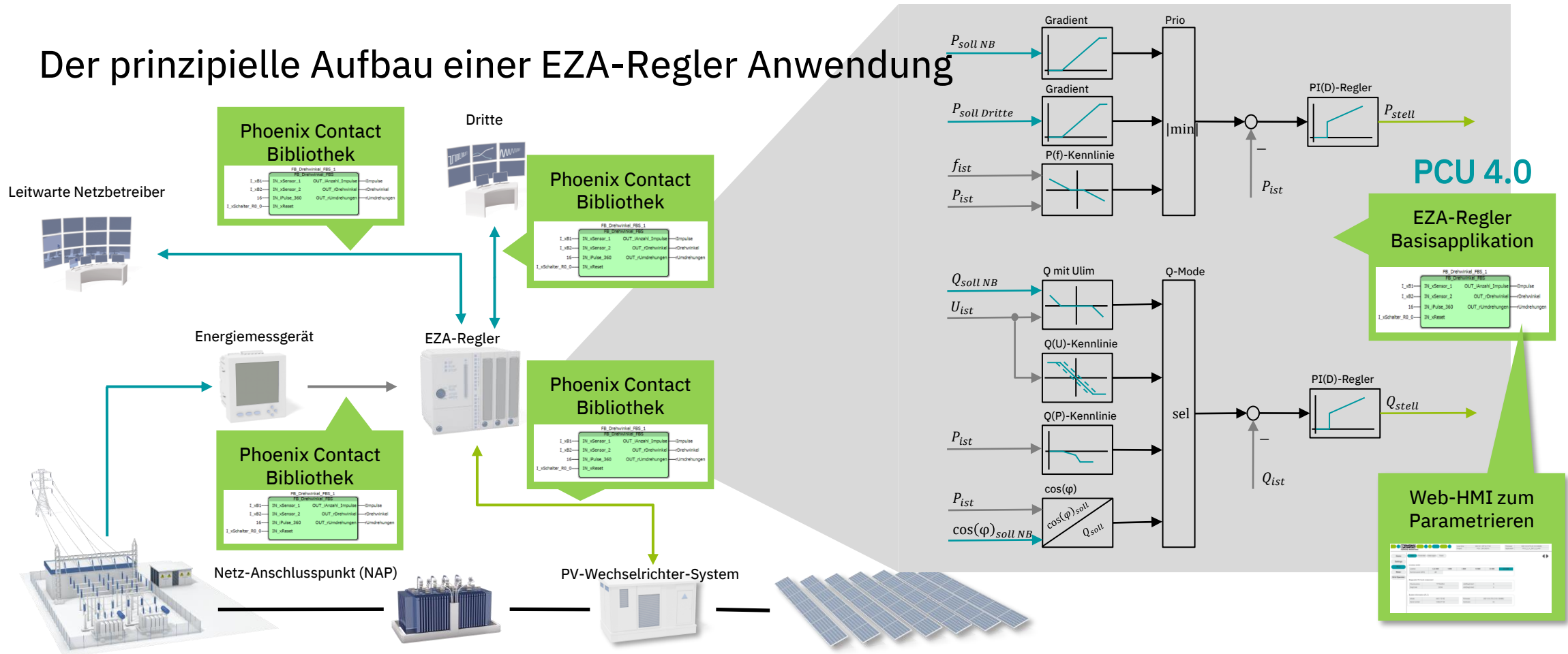
Die Architektur eines EZA-Reglers

- Monolithische Lösung
 - Gute Bedienbarkeit
 - Geeignet nur für standardisierte Anwendungen
 - Nicht erweiterbar in Funktionen und Schnittstellen
- Phoenix Contact PCU 4.0
 - Funktional und in Schnittstellen erweiterbar
 - Geeignet für Komplexe Anforderungen
 - Zukunftssicher durch Übertragbarkeit
 - (geringere) höhere Bediener-Anforderungen



Die Architektur eines EZA-Reglers

Der prinzipielle Aufbau einer EZA-Regler Anwendung



Gehaltvoll: Die SolarWorx Bibliothek

Solar Park Management - Feature List	
Table of content	
1. General Information.....	4
1.1 Description.....	4
1.2 Licensing.....	4
1.3 Hardware.....	5
2. Solarworx Inverter.....	6
2.1 ABB.....	6
2.2 AEG Power solutions.....	6
2.3 Bonfiglioli.....	7
2.4 Danfoss.....	7
2.5 Delta.....	8
2.6 Emerson.....	8
2.7 Fronius.....	9
2.8 GoodWe.....	9
2.9 GPTech.....	10
2.10 Growatt.....	10
2.11 Huawei.....	11
2.12 Kaco.....	11
2.13 Kostal.....	12
2.14 KSTAR.....	12
2.15 OMRON.....	13
2.16 Power Electronics.....	13
2.17 Power One.....	14
2.18 REFUsoL.....	14
2.19 Samil Power.....	15
2.20 Satcon.....	15
2.21 Schneider Electric.....	16
2.22 SMA.....	16
2.23 Sofar.....	17
2.24 SolarEdge.....	17
2.25 Solar Max.....	18
2.26 Soltronic.....	18
2.27 Sungrow.....	19
2.28 Sunways.....	19
3. Solarworx Meter.....	20
3.1 Camille Bauer Metrawatt.....	20
3.2 Cewe.....	20
3.3 Gantner.....	20
3.4 Horstmann.....	21
3.5 Janitza electronics.....	21
3.6 Kaco.....	22
3.7 KERNEL Sistemi.....	22
3.8 Kries - Energietechnik.....	22
3.9 Lumel.....	23
3.10 Optec.....	23
3.11 PQ Plus.....	23
3.12 Phoenix Contact.....	24
3.13 Power Electronics.....	24
3.14 Power One.....	25
3.15 Satec.....	25
3.16 Schneider Electric.....	26
3.17 Siemens.....	26
3.18 Socomec.....	26

Solar Park Management - Feature List	
3.19 Stucke.....	27
3.20 Sungrow Power Supply.....	27
3.21 Trinity Touch.....	27
3.22 Weidmüller.....	28
4. Solarworx Environment.....	29
4.1 Huawei.....	29
4.2 Hukseflux.....	29
4.3 Gill.....	29
4.4 Kipp & Zonen.....	30
4.5 LAMBRECHT meteo.....	30
4.6 Luft.....	31
4.7 SMA.....	31
4.8 Mencke & Teglmeyer.....	31
5. Solarworx Portal.....	32
5.1 be4energy.....	32
5.2 meteocontrol.....	33
5.3 Mind4Energy.....	34
5.4 QOS Energy.....	34
5.5 Smartblue.....	35
6 Solarworx SunSpec.....	36
7 Solarworx Tracker.....	37
7.1 Sun position calculation.....	37
8 Weather station.....	37
8.1 Hardware.....	37
8.2 Function.....	37
8.3 Data provision.....	37
9 Support.....	38

Install extraordinary possibilities
Enhance your automation project using ready-to-use software applications

Solarworx
Phoenix Contact GmbH & Co. KG
Contact Developer

Version: 3.6.0 (2022.0.4)

INSTALL DOWNLOAD Help

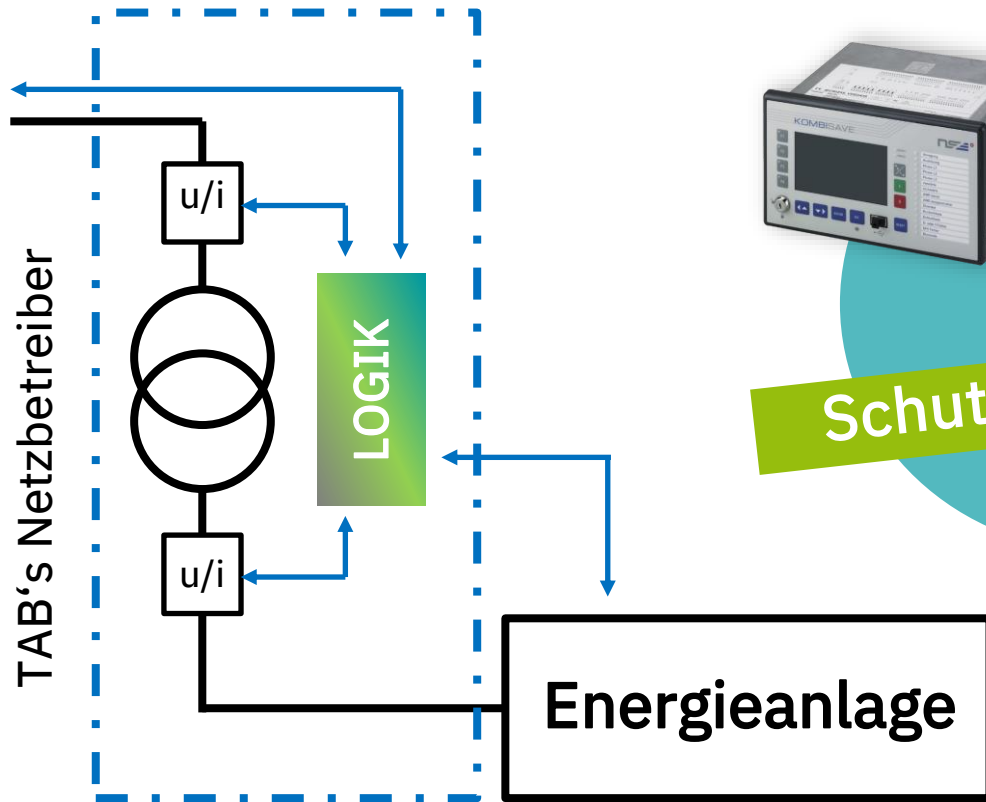
49.00 €
Price per license

10 DAYS FREE TRIAL

1 BUY

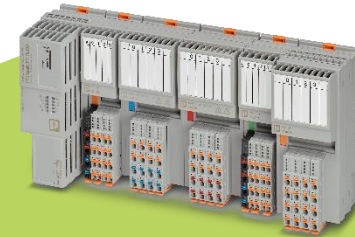
Alleine aus den in der Bibliothek vorhandenen Hersteller-Kommunikations-Bausteinen werden 25.000 unterschiedliche Kombinationen abgedeckt!

Die Lösungsspanne des PxC EZA Regler-Systems



Messen & Schützen

Schutzgerät



Kommunizieren
Steuern

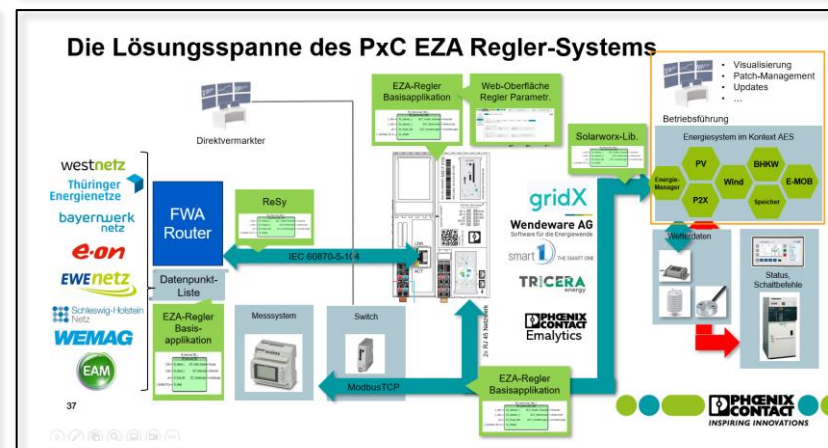
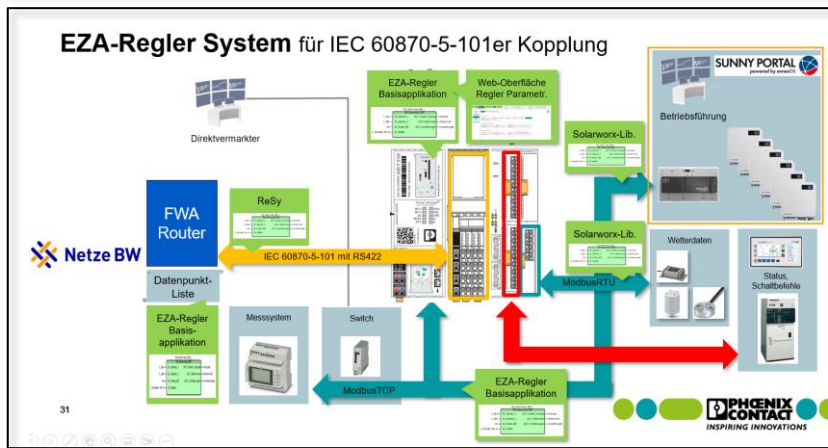
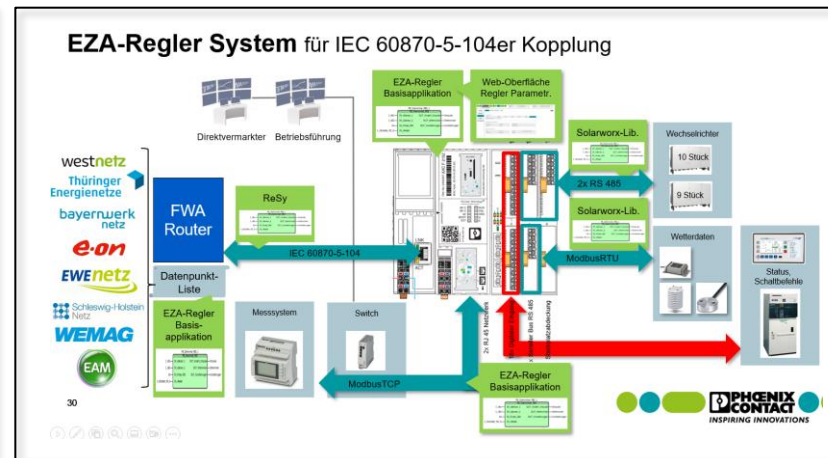
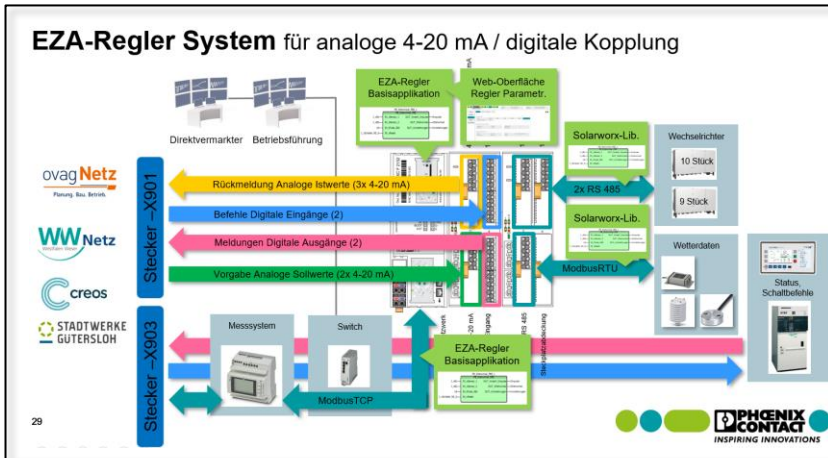
Fernwirkanlage

Kommunizieren,
Steuern, Messen
& Regeln

EZA-Regler



Die Lösungsspanne des PxC EZA Regler-Systems



- Die unterschiedlichen TAB's der mehr als 860 Netzbetreiber bedingen entsprechende HW-Kombinationen.
- Die Datenpunkte müssen physikalisch angeschlossen und im SW-Projekt verknüpft werden.
- Dies geht nun im PLCnext Engineer weitestgehend konfigurierbar!

Auf den Punkt gebracht...

- 70 % Zeitersparnis mit PCU 3.0 im Vergleich zu einem SPS-System ohne Basisapplikation
- Weitere 20-30% Zeitersparnis mit PCU 4.0 gegenüber PCU 3.0

0% Zeitersparnis



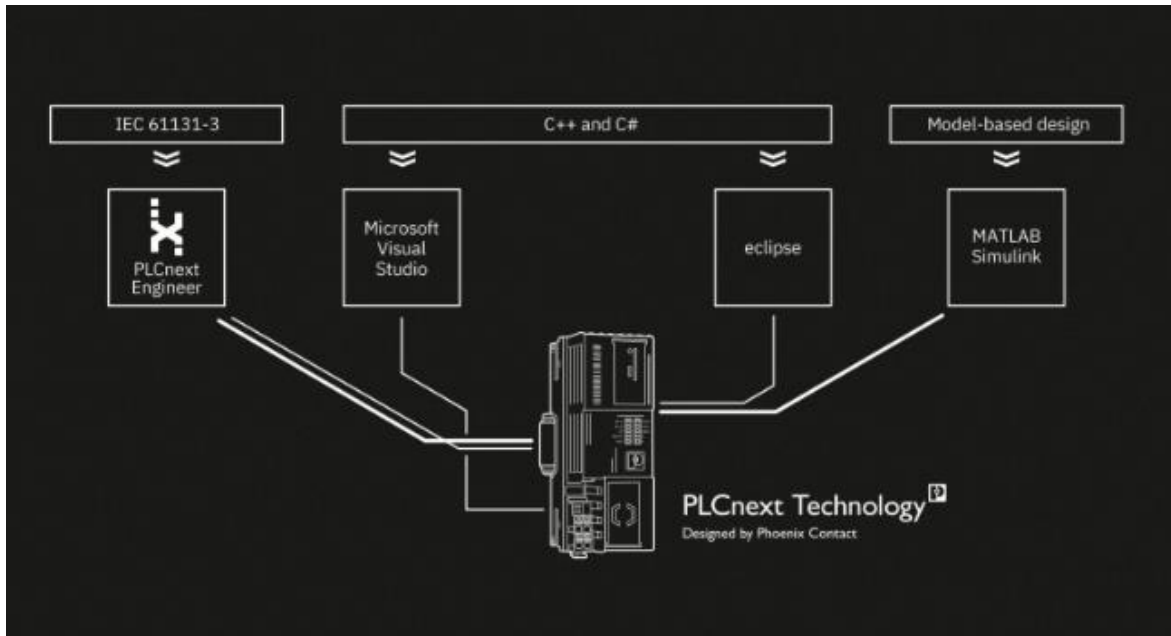
70% Zeitersparnis



+ 20-30% weitere Zeitersparnis



Ein Blick in die Software



- ✓ Programmierung
- ✓ Konfiguration
- ✓ Diagnose
- ✓ Visualisierung

In der Basisapplikation werden die Schnittstellen konfiguriert und dann auf dem Web-Interface parametriert

General

Home

Settings

Power Control Unit

Grid Operator

Third Parties

Meter

Control

Inverter

Data Transmission

Portal

Commissioning

Test Mode

PCU 1

Grid operator

Info

Diag

Default 104

External setpoint	Actual value	Fallback mode
P [kW]	10000.000	Last valid value
Q [kVAr]	0.000	Last valid value
cos(φ) [p.u.]	1.000	Last valid value

External parameter	Actual value	Fallback mode
Q Mode	Off	Q(Vlim)
Vref Q(V) [kV]	20.000	Last valid value

Third parties

Info

Diag

Energy & Meteo Systems

External setpoint	Actual value	Fallback mode
P [kW]	20000.000	Fixed value

Meter

Info

Diag

Phoenix Contact PCU Testsystem Meter

External measured value	Actual value	Fallback mode
P [kW]	10000.000	Off
Q [kVAr]	0.000	
cos(φ) [p.u.]	1.000	
f [Hz]	50.000	
VL12 [kV]	19.922	
VL23 [kV]	19.922	
VL31 [kV]	19.922	
VLL [kV]	19.922	

Control

Info

Diag

P Controller	Actual value
Setpoint [kW]	10000.000
Measured value [kW]	10000.000
Control value [kW]	10000.000
Bypass mode	false

Ena P Gradient Grid operator [%/s]	false	0.50
Ena P Gradient Third parties [%/s]	false	0.50

Ena P(f) Setpoint [kW]	false	0.000
Ena P(f) Gradient Grid operator [%/s]	false	0.10

Ena Primary Control ΔP [kW]	false	0.000
-------------------------------	-------	-------

Q Control	Actual value
Setpoint [kVAr]	0.000
Measured value [kVAr]	0.000
Control value [kVAr]	0.000
Bypass mode	false

Q Mode	Off
Vref Q(U) [kV]	20.000
Enable Q prioritization	false

Portal

Info

Diag

Portal

Power generation system

Info

Diag

Setpoints	Actual value
P [kW] for inverter group of PCU[n]	10000.000
Q [kVAr] for inverter group of PCU[n]	0.00

Inverter instance group

Inv Group 1	Phoenix Conatct PCU Testsystem Inverter
Inverter instance group is linked to	PCU 1

• Auswahl (Konfigurieren) im Event- und Taskmanager im PLCnext Engineer

General

- [Home](#)
- [Settings](#)

- Power Control Unit
- [Grid Operator](#)
 - [Third Parties](#)
 - [Meter](#)
 - [Control](#)
 - [Inverter](#)

- Data Transmission
- [Portal](#)

- Commissioning
- [Test Mode](#)

- Offline
- Warning
- Running
- Error

Default 104

- Info
- Com
- Objects10x
- Diag

Diag parameter file handling

Parameter file exists	
Recent error	●
Diag code	
Additional diag code	

Parameter file read	
Recent error	●
Diag code	
Additional diag code	

Parameter file write	
Recent error	●
Diag code	
Additional diag code	

Diag grid operator communication

- Client 1
- Client 2

License	
License state	●
Demo mode	<input type="radio"/>
License valid	

Connect manager 1	
Connect valid	● 2023-07-26T12:52:07
Transmission mode	● 2023-07-26T12:52:07
Standby mode	<input type="radio"/> 2023-07-26T12:54:16
Send test frame act	90
Rec. test frame con	90
Rec. start DT act	1
Cycle time	20
S160_Parameter	
Protocol:TCP-Server / Bind-IP: / Bind-Port:2404	
S15_SourceIP	192.168.178.111
UI_UsedPort	2404

Connect manager 2	
Connect valid	<input type="radio"/> 2023-07-26T12:52:07
Transmission mode	<input type="radio"/> 2023-07-26T12:52:07
Standby mode	<input type="radio"/>
Send test frame act	0
Receive test frame con	0
Receive start DT act	0
Cycle time	20
S160_Parameter	
Protocol:TCP-Server / Bind-IP: / Bind-Port:2404	
S15_SourceIP	
UI_UsedPort	0

Link manager	
ParameterError	<input type="radio"/>
DatatransferStop	<input type="radio"/> 2023-07-26T12:52:07
SendBufferIsFull	<input type="radio"/>

Fallback / Commissioning	
Fallback active	<input type="radio"/>
Commissioning control active	<input type="radio"/>
Commissioning monitoring active	<input type="radio"/>

Object manager: Error	
S_ErrorMessage	
CntAsduInvalid	0
CntAsduInvalidAdress	0
CntAsduInvalidIOA	0

Object manager	
CntDataFromObjects	7
CntDataToObjValid	2
CntDataToObjInvalid	0
ErrorMultiAddress	<input type="radio"/>

Object manager	control	monitor
CntObjects	6	0
CntObjWithMultiAddr	0	0
LastMultiAddress	0	0
LastMultiType	0	0

Reset grid operator config

Enable **Notice "ENABLE":**
Enable the RESET button.

RESET **Notice "RESET":**
Parameter will be set to default settings.

General

Home

Settings

Power Control Unit

Grid Operator

Third Parties

Meter

Control

Inverter

Data Transmission

Portal

Commissioning

Test Mode

Default 104

Info

Com

Objects10x

Diag

PCU 1

Grid operator

Default 104		
IEC 60870-5-104		
External setpoint	Actual value	Fallback mode
P [kW]	10000.000	Last valid value
Q [kVAR]	0.000	Last valid value
cos(φ) [p.u.]	1.000	Last valid value
External parameter	Actual value	Fallback mode
Q Mode	Off	Q(Vlim)
Vref Q(V) [kV]	20.000	Last valid value
Diagnostic		
Alarm	●	Commissioning control active <input type="checkbox"/>
Fallback active	<input type="checkbox"/>	Commissioning monitoring active <input type="checkbox"/>

RTU 1

Connect manager 1		Connect manager 2	
Connect valid	●	Connect valid	<input type="checkbox"/>
S15_SourceIP	192.168.178.111	S15_SourceIP	
UI_UsedPort	2404	UI_UsedPort	0

Offline ● Warning ●
 Running ● Error ●

General

Default 104

- Home
- Settings

- Info
- Com
- Objects10x
-
- Diag
- General
- Connect
- Link
- Object I
- Object II

- Power Control Unit
- Grid Operator
 - Third Parties
 - Meter
 - Control
 - Inverter

- Data Transmission
- Portal

- Commissioning
- Test Mode

- Offline
- Warning
- Running
- Error

Activate grid operator Undo Apply

Parameter	Description	Actual value	Edit value
xActive	Enable the GridOperator (true : enable false : disable)	true	On/Off

Grid operator type Undo Apply

Parameter	Description	Actual value	Edit value
iGdo	Select grid operator	Default 104	Default_104 ▲ Default_104 WestNetz MitNetz TEN EWE WEMAG

- In dieser Darstellung können die Fernwirkprotokolle der Netzbetreiber jeweils für IEC 60870-5-101 (seriell) oder IEC 60870-5-104 (Ethernet) ausgewählt werden.
- Falls der Netzbetreiber (noch) nicht vorhanden ist, kann man das Defaultprojekt über diese Oberfläche parametrieren

General

Default 104

- Home
- Settings

- Info
- Com
- Objects10x
- Diag
- General
- Control
- Mon. analog
- Mon. digital
- Test Control
- Test Monitor

Power Control Unit

- Grid Operator
- Third Parties
- Meter
- Control
- Inverter

Data Transmission

- Portal

Commissioning

- Test Mode

- Offline
- Warning
- Running
- Error

Control with feedback objects

- Info
- Undo
- Apply

Obj 1 ◀ ▶

Parameter	Description	Actual value	Edit value
Control object			
xDisablePouControl	Disable the pou (true : disabled false : enabled)	false	On/Off
sNameControl	Name for the object	PCU1 - Set P	PCU1 - Set P
usiOTControl	Object type (TK) valid 45...63	50	50
udiIOAControl	ASDU address unstructured valid 1...16.777.215 If > 0 structured address will not be used	0	0
usiOAHighControl	ASDU address structured high byte valid 0...255	0	0
usiOAMidControl	ASDU address structured midbyte valid 0...255	10	10
usiOALowControl	ASDU address structured low byte valid 0...255	100	100
Feedback monitor object			
xDisablePouMonitor	Disable the pou (true : disabled false : enabled)	false	On/Off
sNameMonitor	Name for the object	PCU1 - Set P	PCU1 - Set P
usiOTMonitor	Object type (TK) valid 1...36	13	13
udiIOAMonitor	ASDU address unstructured valid 1...16.777.215 If > 0 structured address will not be used	0	0
usiOAHighMonitor	ASDU address structured high byte valid 0...255	0	0
usiOAMidMonitor	ASDU address structured mid byte valid 0...255	10	10
usiOALowMonitor	ASDU address structured low byte valid 0...255	110	110
usiGroupMonitor	Group valid 0...16	0	0
iCycleTimeMonitor	Cycle time [ms] valid: 0...30000	0	0

General

Default 104

- [Home](#)
- [Settings](#)

- Info
- Com
- Objects10x
-
- Diag
- General
- Control
- Mon. analog
- Mon. digital
- Test Control
- Test Monitor

Power Control Unit

- Grid Operator
- Third Parties
- Meter
- Control
- Inverter

Data Transmission

- Portal

Commissioning

- Test Mode

- Offline
- Warning
- Running
- Error

Monitor Object

- Info
- Undo
- Apply

Obj 1 ◀ ▶

Parameter	Description	Actual value	Edit value
Debouncing			
xDebouncingActivate	Activate the debouncing function (true : enable false : disable)	false	On/Off
iDebouncing1	Debouncing 1 [ms] valid 0...30000	100	100
iDebouncing2	Debouncing 2 [ms] valid 0...30000	100	100
Flutter			
xFlutterActivate	Activate the flutter function (true : enable false : disable)	false	On/Off
usiFlutterMax	Max count of contacts while time definition valid 0...100	1	1
iFlutterTimeCount	Time for count of contacts [ms] valid 0...30000	2000	2000
diFlutterTimeLocked	Lock time if max Count in Time is reached [s] valid 0...120	60	60
Monitor Object			
xDisablePou	Disable the pou (true : disabled false : enabled)	true	On/Off
sName	Name for the object		
usiIOT	Object type (TK) valid 1...31	1	0
udiIOA	ASDU address unstructured valid 1...16.777.215 If > 0 structured address will not be used	0	0
usiIOAHigh	ASDU address structured high byte valid 0...255	0	0
usiIOAMid	ASDU address structured mid byte valid 0...255	0	0
usiIOALow	ASDU address structured low byte valid 0...255	0	0
usiGroup	Group valid 0...16	0	0
iCycleTime	Cycle time [ms] valid: 0...30000	0	0



- General
 - Home
 - Settings
- Power Control Unit
 - Grid Operator
 - Third Parties
 - Meter
 - Control
 - Inverter
- Data Transmission
 - Portal
- Commissioning
 - Test Mode

Default 104

- Info
- Com
- Objects10x
- Diag

Diag parameter file handling

Parameter file exists	
Recent error	●
Diag code	
Additional diag code	

Parameter file read	
Recent error	●
Diag code	
Additional diag code	

Diag grid operator communication

License	
License state	● Demo mode ●
License valid	

Connect manager 1	
Connect valid	● 2023-07-26T13:27:09
Transmission mode	● 2023-07-26T13:27:09
Standby mode	● 2023-07-26T13:27:18
Send test frame act	93
Rec. test frame con	93
Rec. start DT act	3
Cycle time	20
S160_Parameter	
Protocol:TCP-Server / Bind-IP: / Bind-Port:2404	
S15_SourceIP	192.168.178.111
UI_UsedPort	2404

Connect manager 2	
Connect valid	● 2023-07-26T12:52
Transmission mode	● 2023-07-26T12:52
Standby mode	●
Send test frame act	0
Receive test frame con	0
Receive start DT act	0
Cycle time	20
S160_Parameter	
Protocol:TCP-Server / Bind-IP: / Bind-Port:	
S15_SourceIP	
UI_UsedPort	0

Link manager	
ParameterError	●
DatatransferStop	● 2023-07-26T13:27:09

WinPP104 - SeTel.st4

Datei
Modus
Senden
Ansicht
Parametrieren
Filter
Hilfe

	Empfangen	Fehler	Gesendet	Fehler	Status	IP Partner	Ze-,US-Port	Funktion
Em/Se 1	3	1	2	0	Verbunden	192.168.178.10	57909,2404	Zentrale
Em/Se 2	0	0	0	0	-	192.168.178.10	-,2405	aus

online Telegramme, logisch, mit Zeit, mit Link

```

1      PM 13:24:46,557 Start Zentrale t1=15 t2=10 t3=0 k=12 w=8 E1: 0/0 S1: 0/0
2      PM 13:24:46,559 Network is unreachable Fehler: 10051
3      PM 13:24:47,811 Stop Zentrale t1=15 t2=10 t3=0 k=12 w=8 E1: 0/0 S1: 0/1
4      PM 13:24:49,375 Start Zentrale t1=15 t2=10 t3=0 k=12 w=8 E1: 0/0 S1: 0/1
5      PM 13:24:49,375 172.16.245.128 Bind Fehler, WSA Anzeige: $00002740
6      PM 13:24:49,383 Zentrale: 192.168.178.111:57909 verbunden mit: 192.168.178.10:2404
7      S1 13:24:50,062
IP:Port : 192.168.178.111:57909 > 192.168.178.10: 2404
Ctrl    : StartDT: act
8      E1 13:24:50,110 d=0,048s
IP:Port : 192.168.178.111:57909 < 192.168.178.10: 2404
Ctrl    : StartDT: con
9      S1 13:25:00,124 d=10,01s
IP:Port : 192.168.178.111:57909 > 192.168.178.10: 2404
Ctrl    : s:0 r:0
Typ     : Sollwertbefehl Gleitkomma=50
Ursache : Aktivierung=6 hk=0
Station : 0- 1
Objekt  : 0- 10-100 0,5 Ausführen Kennung=0
10     E1 13:25:00,242 d=0,118s
IP:Port : 192.168.178.111:57909 < 192.168.178.10: 2404
Ctrl    : s:0 r:1
Typ     : Sollwertbefehl Gleitkomma=50
Ursache : Bestätigung Aktivierung=7 hk=0
Station : 0- 1
Objekt  : 0- 10-100 0,5 Ausführen Kennung=0
11     E1 13:25:00,325 d=0,083s
IP:Port : 192.168.178.111:57909 < 192.168.178.10: 2404
Ctrl    : s:1 r:1
Typ     : Messwert Gleitkomma=13
Ursache : spontan=3 hk=0
Station : 0- 1
Objekt  : 0- 10-110 0,5
    
```

Online
online Telegramme
Log-Filter: AUS
Ausgabe-Filter: AUS
Log: Log.lg4
Text:

Object manager	control	monitor
CntObjects	6	0
CntObjWithMultiAddr	0	0
	0	0

• Inbetriebnahmehilfe und Kontrolle der Daten über die Fernwirkchnittstelle (60870-5-101/104)

- Offline
- Warning
- Running
- Error

General

Default 104

- Home
- Settings

- Info
- Com
- Objects10x
- Diag
- General
- Control
- Mon. analog
- Mon. digital
- Test Control
- Test Monitor

Power Control Unit

- Grid Operator
- Third Parties
- Meter
- Control
- Inverter

Data Transmission

- Portal

Commissioning

- Test Mode

- Offline
- Warning
- Running
- Error

PCU 1 ◀ ▶

Scaling setpoints

Undo Apply

Parameter	Description	Actual value	Edit value
usiModeActivePower	Set the unit of the setpoint specification	[%]	[%] ▼
usiModeReactivePower	Set the unit of the setpoint specification	[VAr]	[VAr] ▼
usiModeReferenceVoltage	Set the unit of the setpoint specification	[kV]	[kV] ▼

Fallback config

Undo Apply

Parameter	Description	Actual value	Edit value
diFallbackTime	Time until fallback is active [s] valid 0...3600	60	60
rFallbackActPwrFixedValue	Active power fallback fix value [kW] valid 0...250.000	0.000	0.000
rFallbackReactPwrFixedValue	Reactive power fix value [kVar] valid -250.000...250.000	0.000	0.000
rFallbackUrefFixedValue	Fallback fix value Uref [kV] valid 0.001...120	20.000	20.000
rFallbackCosPhiFixedValue	Fallback fix Cos Phi [pu] valid -1.0...1.0	1.000	1.000
usiFallbackModeActivePwr	Active power fallback mode	Fixed Value	Fixed Value ▼
usiFallbackModeReactivePwr	Reactive power fallback mode	Last valid value	Last valid value ▼
usiFallbackModeUref	Uref fallback mode	Last valid value	Last valid value ▼
usiFallbackModeCosPhi	Cos Phi fallback mode	Last valid value	Last valid value ▼
usiFallbackReactPwrQmod	Reactive power fallback mode	Q(Vlim)	Q(Vlim) ▼

Objects for setpoints

Undo Apply

Parameter	Description	Actual value	Edit value
usiObjActivePower	Set the incoming Object to the setpoint Active Power signal	Obj 1	Obj 1 ▼
usiObjReactivePower	Set the incoming Object to the setpoint Reactive Power signal	Obj 2	Obj 2 ▼
usiObjCosPhi	Set the incoming Object to the setpoint Cos Phi signal	Obj 3	Obj 3 ▼
usiObjURef	Set the incoming Object to the setpoint Voltage Reference signal	None	None ▼
usiObjReactivePowerMode	Set the incoming Object to the setpoint "Reactive Power Mode" signal	None	None ▼

General

Default 104

- [Home](#)
- [Settings](#)

- Info
- Com
- Objects10x
- Diag
- General
- Control
- Mon. analog
- Mon. digital
- Test Control
- Test Monitor

Power Control Unit

- Grid Operator
- Third Parties
- Meter
- Control
- Inverter

Data Transmission

- Portal

Commissioning

- Test Mode

- Offline
- Warning
- Running
- Error

Mesurement object

- Info
- Undo
- Apply

Obj 1 ◀ ▶

Parameter	Description	Actual value	Edit value
Threshold			
xActivate	Activate the threshold function (true : enable false : disable)	false	On/Off
rReferenceValue	Reference value valid 0...250000000	0.00	0.00
rAbsoluteThreshold	Absolute threshold valid 0...1000	0.00	0.00
rAdditiveThreshold	Additive threshold valid 0...1000	0.00	0.00
iCycle	Cycle [ms] valid 0...30000	0	0
iSamplingRate	Sampling rate [ms] valid 0...30000	0	0
xResetThreshold	Reset the threshold (true : enable false : disable)	false	On/Off
udiCounterAbsolute	Counter for condition absolue threshold	0	
udiCounterAdditive	Counter for condition additive threshold	0	
udiCounterCycle	Counter for condition cycle time	0	
Monitor object			
xDisablePou	Disable the pou (true : disabled false : enabled)	true	On/Off
sName	Name for the object		
usiOT	Object type (TK) valid 9...36	9	0
udiIOA	ASDU address unstructured valid 1...16.777.215 If > 0 structured address will not be used	0	0
usiIOAHigh	ASDU address structured high byte valid 0...255	0	0
usiIOAMid	ASDU address structured mid byte valid 0...255	0	0
usiIOALow	ASDU address structured low byte valid 0...255	0	0
usiGroup	Group valid 0...16	0	0
iCycleTime	Cycle time [ms] valid: 0...30000	0	0

General

Home

Settings

Power Control Unit

Grid Operator

Third Parties

Meter

Control

Inverter

Data Transmission

Portal

Commissioning

Test Mode

Default 104

Info

Com

Objects10x

Diag

General

Control

Mon. analog

Mon. digital

Test Control

Test Monitor

Monitor Object

Info

Undo

Apply

Obj 1

Parameter	Description	Actual value	Edit value
Debouncing			
xDebouncingActivate	Activate the debouncing function (true : enable false : disable)	false	On/Off
iDebouncing1	Debouncing 1 [ms] valid 0...30000	100	100
iDebouncing2	Debouncing 2 [ms] valid 0...30000	100	100
Flutter			
xFlutterActivate	Activate the flutter function (true : enable false : disable)	false	On/Off
usiFlutterMax	Max count of contacts while time definition valid 0...100	1	1
iFlutterTimeCount	Time for count of contacts [ms] valid 0...30000	2000	2000
diFlutterTimeLocked	Lock time if max Count in Time is reached [s] valid 0...120	60	60
Monitor Object			
xDisablePou	Disable the pou (true : disabled false : enabled)	true	On/Off
sName	Name for the object		
usiIOT	Object type (TK) valid 1...31	1	0
udiIOA	ASDU address unstructured valid 1...16.777.215 If > 0 structured address will not be used	0	0
usiIOAHigh	ASDU address structured high byte valid 0...255	0	0
usiIOAMid	ASDU address structured mid byte valid 0...255	0	0
usiIOALow	ASDU address structured low byte valid 0...255	0	0
usiGroup	Group valid 0...16	0	0
iCycleTime	Cycle time [ms] valid: 0...30000	0	0

Offline ● Warning
 Running ● Error ●

General

Home

Settings

Power Control Unit

Grid Operator

Third Parties

Meter

Control

Inverter

Data Transmission

Portal

Commissioning

Test Mode

Offline ● Warning ●
 Running ● Error ●

Default 104

Info

Com

Objects10x

Diag

General

Control

Mon. analog

Mon. digital

Test Control

Test Monitor

Enable commissioning mode

Undo

Apply

Parameter	Description	Actual value	Edit value
xCommissioningControlActive	Enable commissioning mode (true: enable false: disable)	true	On/Off

Commissioning control values

Control Monitor Object

	Obj	OT	OA High	OA Mid	OA Low	Name	Actual value	Edit value	Set
	1	50	0	10	100	PCU1 - Set P	0.60	0.60	
	2	50	0	10	101	PCU1 - Set Q	0.00	0.00	
	3	50	0	10	102	PCU1 - Set cosphi	0.00	0.00	
	4	50	0	10	200	PCU2 - Set P	0.00	0.00	
	5	50	0	10	201	PCU2 - Set Q	0.00	0.00	
	6	50	0	10	202	PCU2 - Set cos phi	0.00	0.00	
	7	45	0	0	0		false	ON	
	8	45	0	0	0		false	ON	
	9	45	0	0	0		false	ON	
	10	45	0	0	0		false	ON	
	11	45	0	0	0		false	ON	
	12	45	0	0	0		false	ON	
	13	45	0	0	0		false	ON	
	14	45	0	0	0		false	ON	
	15	45	0	0	0		false	ON	
	16	45	0	0	0		false	ON	
	17	45	0	0	0		false	ON	
	18	45	0	0	0		false	ON	
	19	45	0	0	0		false	ON	

General

Home

Settings

Power Control Unit

Grid Operator

Third Parties

Meter

Control

Inverter

Data Transmission

Portal

Commissioning

Test Mode

Offline ● Warning ● Error
 Running ●

Default 104

Info

Com

Objects10x

Diag

General

Control

Mon. analog

Mon. digital

Test Control

Test Monitor

Enable commissioning mode

Undo

Apply

Parameter	Description	Actual value	Edit value
xCommissioningMonitorActive	Enable commissioning mode (true: enable false: disable)	true	On/Off

Commissioning monitoring values

Control Monitor Object

	Obj	OT	OA High	OA Mid	OA Low	Name	Actual value	Edit value	Set
	1	13	0	10	110	PCU1 - Set P	0.60	0.00	
	2	13	0	10	111	PCU1 - Set Q	0.00	0.00	
	3	13	0	10	112	PCU1 - Set cosphi	0.00	0.00	
	4	13	0	10	210	PCU2 - Set P	0.00	0.00	
	5	13	0	10	211	PCU2 - Set Q	0.00	0.00	
	6	13	0	10	212	PCU2 - Set cos phi	0.00	0.00	

Measurement Object

	Obj	OT	OA High	OA Mid	OA Low	Name	Actual value	Edit value	Set
	1	9	0	0	0		0.00	0.00	
	2	9	0	0	0		0.00	0.00	
	3	9	0	0	0		0.00	0.00	
	4	9	0	0	0		0.00	0.00	
	5	9	0	0	0		0.00	0.00	
	6	9	0	0	0		0.00	0.00	

Singlepoint / Doublepoint Object

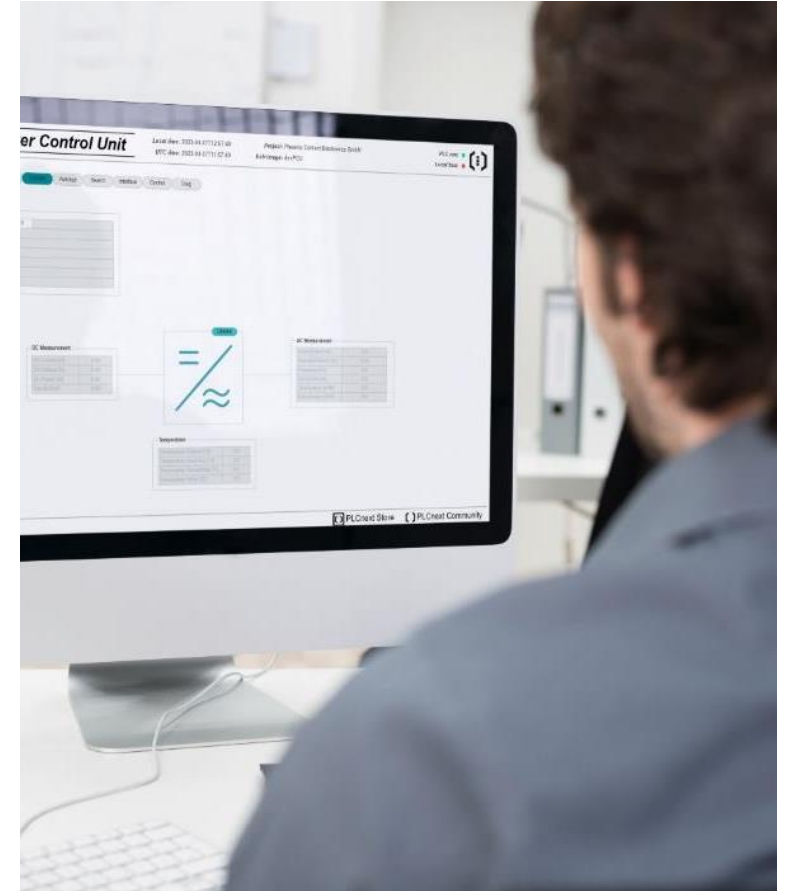
	Obj	OT	OA High	OA Mid	OA Low	Name	Actual value	Edit value	Set
	1	1	0	0	0		false	ON	
	2	1	0	0	0		false	ON	
	3	1	0	0	0		false	ON	
	4	1	0	0	0		false	ON	
	5	1	0	0	0		false	ON	
	6	1	0	0	0		false	ON	

PV-Magazin Webinar 25.08.2023 „EZA-Regler parametrieren statt programmieren“

Lust auf mehr?

Bei Interesse an einer Live-Vorführung, hinterlassen Sie bitte Ihre Kontaktdaten:

burkhard.dittmann@phoenixcontact.de



Ihr Kontakt bei Phoenix Contact

- Dieter Schrenk (System Sales VMM EEN Süd)
- +49 (0) 5235/3-12863
- dieter.schrenk@phoenixcontact.de

- Burkhard Dittmann (System Sales VMM EEN Nord)
- +49 (0) 5235/3-12834
- burkhard.dittmann@phoenixcontact.de



Empowering the All Electric Society



100 years of passion for
technology and innovation

Thank you