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pv magazine webinars

The role of monitoring in managing power and maximizing returns: Indian C&I segment in focus

31 May 2023

12:00 pm – 1:00 pm | CEST, Berlin
2:00 pm – 3:00 pm | Dubai
3:30 pm – 4:30 pm | IST, Delhi

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iPlon India

Welcome!

pv magazine webinars

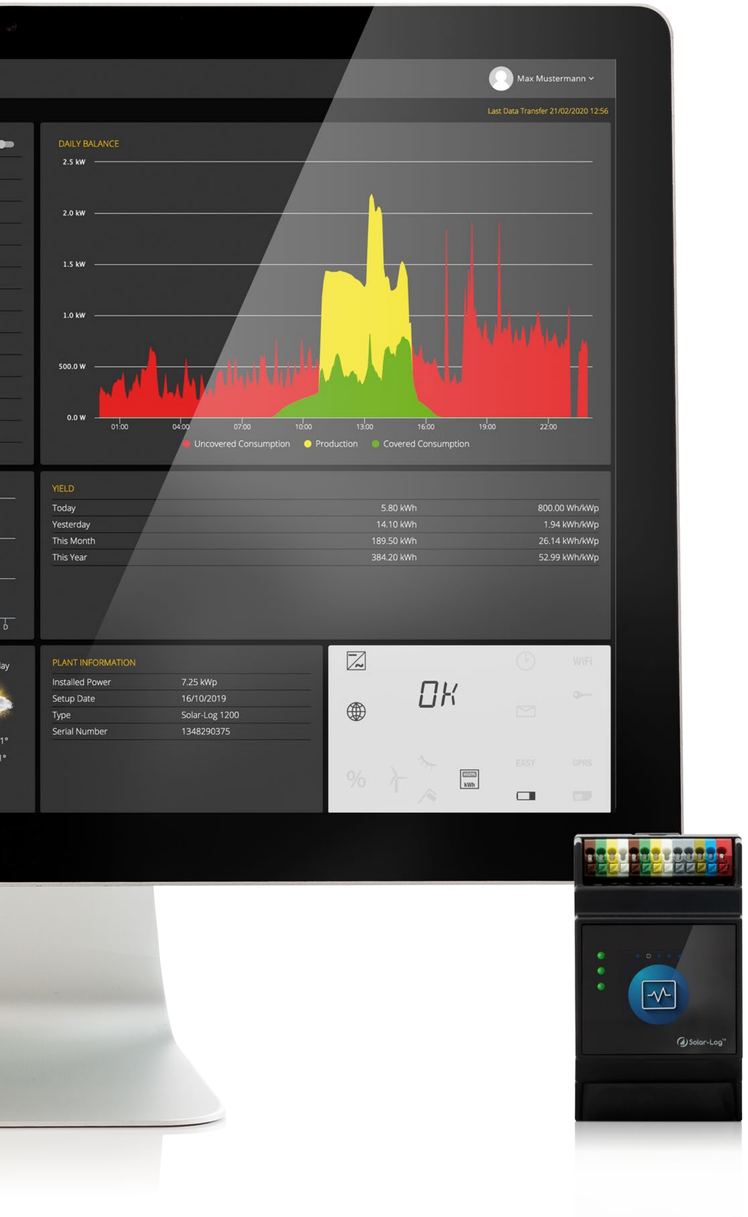
Do you have any questions? ? 

Send them in via the Q&A tab.  We aim to answer as many as we can today!

You can also let us know of any tech problems there.

We are recording this webinar today. 

We‘ll let you know by email where to find it and the slide deck, so you can re-watch it at your convenience.  



Solar-Log™ - We Create Connections.

pv magazine Webinar 31.05.2023

Who are we?

2004

Jörg Karwath develops initial idea for a monitoring solution for PV systems and the first Solar-Log™

2007

Together with Thomas Preuhs, Solare Datensysteme GmbH is founded under the umbrella of Thomas Preuhs Holding. Solar-Log™ begins to expand

2011

Solar-Log™ has already been sold and installed in over 20 countries

2015

Solar-Log™ becomes part of the BKW Group

BKW

2019

New hardware series launched

2021

Start Portal Solar-Log WEB Enerest™ 4

2022

New management team for Solar-Log GmbH
New development of the firmware

Solar-Log GmbH

Owner
BKW Group, www.bkw.ch

Headquarters
72351 Geislingen-Binsdorf, Germany

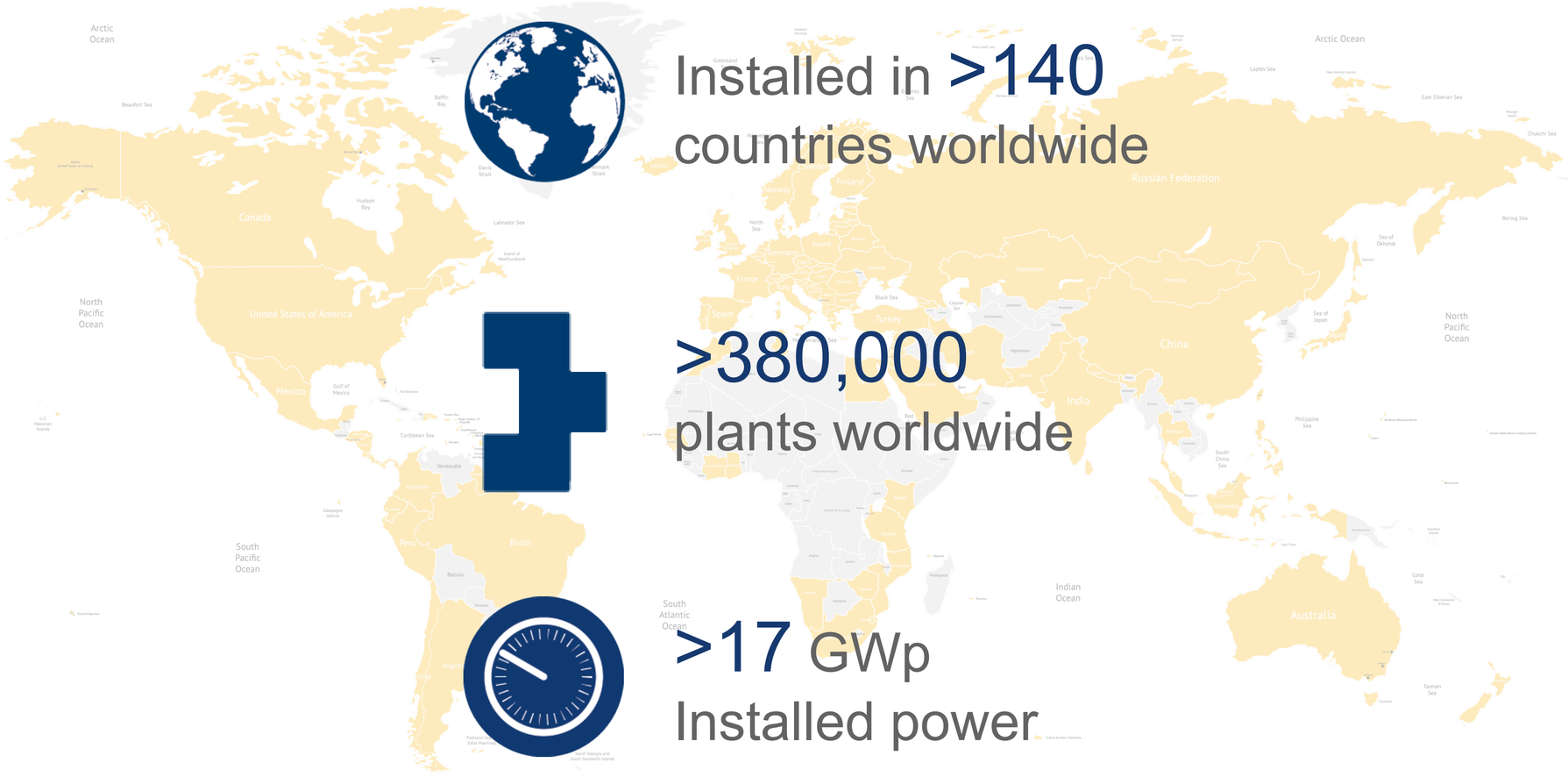
Product and market experience
> 15 years

BKW Energie AG

- Internationally active energy and infrastructure company
- Founded in 1909 in Bern, Switzerland
- > 10,000 employees worldwide
- Supplies approx. 1 million people with electricity

Our experience in PV monitoring

Global orientation – High scalability – Strong portfolio



Installed in >140 countries worldwide

>380,000 plants worldwide

>17 GWp Installed power

Solar-Log™ Worldwide

Headquarters
Solar-Log GmbH, Germany

Service Partner
Solar-Log® North America, (USA + Canada + Mexico)
Solar Data Systems, Inc.

Solar-Log™ France/North America
Sundays Data System

Solar-Log™ Benelux
Inverter Service BV

Solar-Log™ India
iPLON India Pvt Ltd

Solar-Log™ Spain & Portugal
Plug and Play Energy

Solar-Log™ Switzerland
novagrid ag

South Africa
Telenetix Technology Solutions

Solar-Log™ Malaysia & South East Asia
Pekat Engineering Sdn Bhd

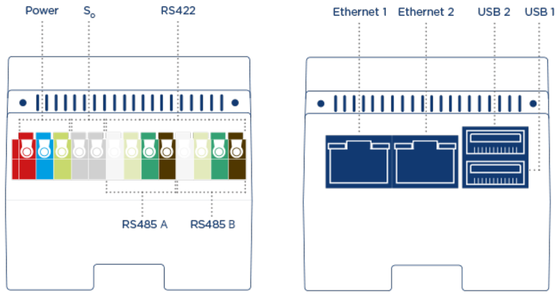
UK & Ireland
Sibert Solar Ltd

Czech Republic
Enershine s.r.o

Distributors
Chile
Denmark
Finland
Indonesia
Poland
Sweden

Hardware portfolio

The Solar-Log Base - Simple installation - Flexible and expandable



	Solar-Log Base 15	Solar-Log Base 100	Solar-Log Base 2000
Maximum plant size	15 kWp	100 kWp	2000 kWp
Extension licence*	up to max. 30 kWp	up to max. 250 kWp	-
Inverter connection options	2x Ethernet / 2x RS485 or 1x RS422		
Smart energy functions	●	●	●
Integrated bus analysis	●	●	●
Integrated direct marketing interface	●	●	●
Dynamic feed-in limitation** (self-consumption ex/inclusive)	●	●	●
RRCR***-controlled active/reactive power control** (self-consumption included)	-	●	●

*Fee-based extension licence

***RRCR = Radio Ripple Control Receiver

**Additional hardware modules are required to connect to an RRCR

Hardware portfolio

MOD 485 – Extension module for connection extensions and remote operation

	MOD 485
Function	Extends interface functions 4x RS485 or 2x RS422 or 2x RS485 + 1x RS422
Connection to Solar-Log Base	Via prepared internal device bus connector
Energy supply	Via device bus / Power supply unit optionally available for higher switching currents
Device bus connector	2 items included in delivery

Additional features are simply activated by firmware updates

Feature-led modular system

Only pay for what you need, when you need it!

Basic module – Solar-Log Base

Solar-Log Base 15

Solar-Log Base 100

Solar-Log Base 2000

+

Expansion modules for additional interfaces

Solar-Log MOD I/O

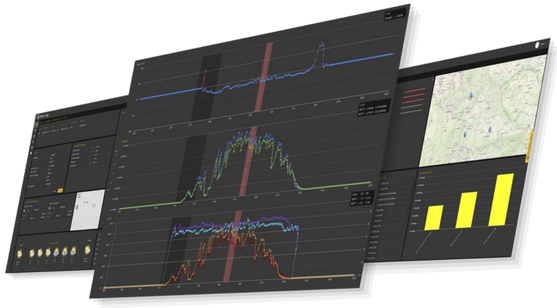
Solar-Log MOD 485

+

Accessories

+

Web/software solutions and licences

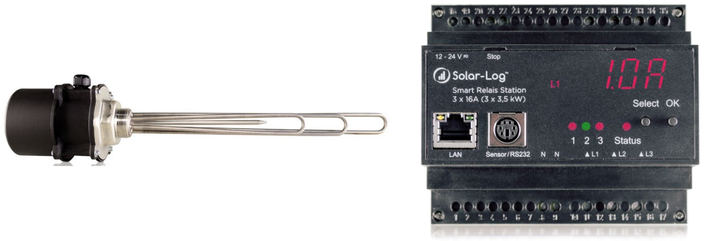


Hardware portfolio

Accessories – More data from the plant environment for a better overview and additional features

Environmental sensors

These can record additional environmental values such as the irradiation, wind speed or temperature on the module surface and thus optimise yield forecasts and error analyses.



Heating rod and relay modules

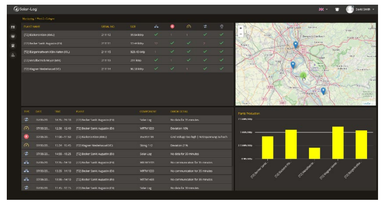
Extend the range of features provided by the Solar-Log™ monitoring solution with smart home applications.

Energy meter

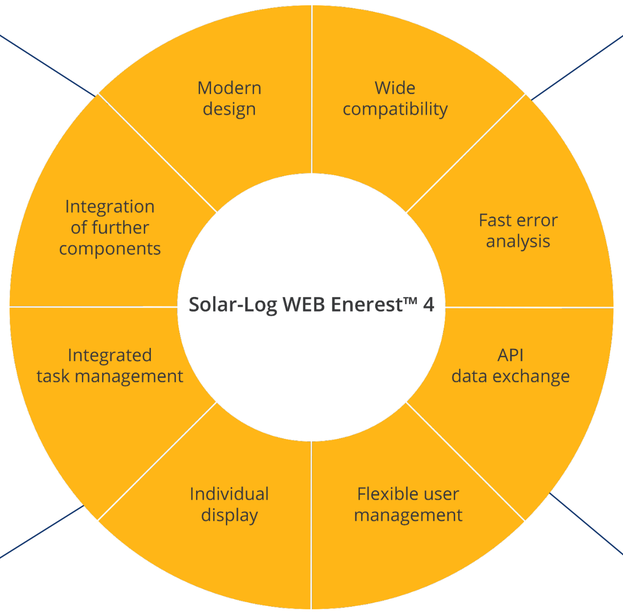
Record energy flows at the grid connection point or from special loads for display purposes.

Solar-Log™ – Powerful hardware meets flexible software

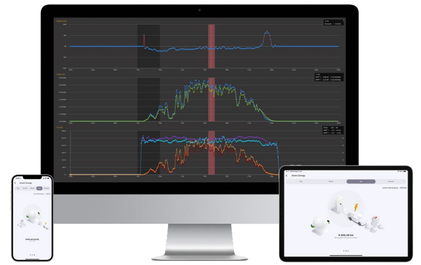
Open to diverse applications
Feed-in management
Monitoring
E-mobility
Smart energy
…



Customisable
Portfolio composition
Individual titles
Personalised views
Own service plans
…



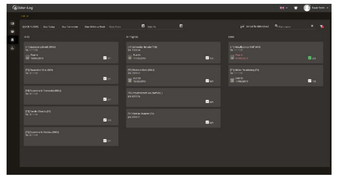
Open to diverse usage
Web
Mobile
Smart devices
…



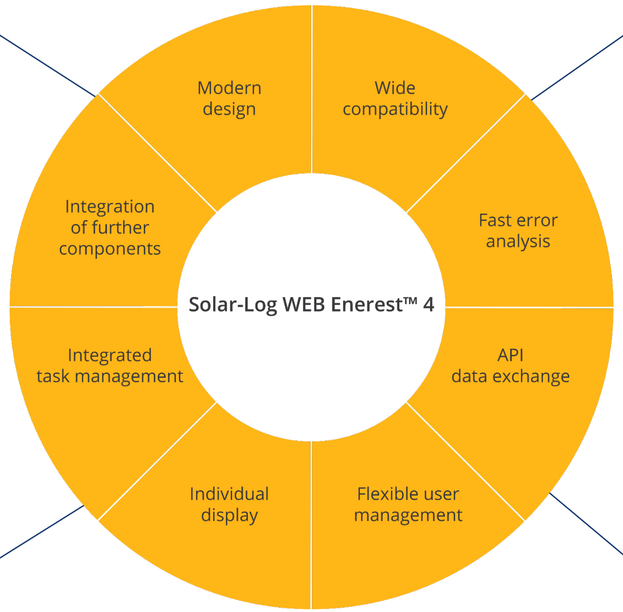
Easy*
Intuitive commissioning
Intuitive handling

Solar-Log™ – Powerful hardware meets flexible software

Error analysis
To the point
Self-learning
Self analysis, e.g. using **integrated** bus analysis
…



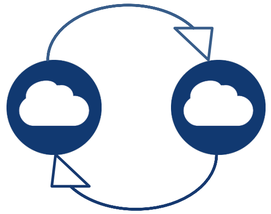
Error management
Kanban-based for a quick overview
Documentation in one place
…



Data security
Location of data is transparent and clear!
…

Germany and Norway

Flexible
API – Integration for mapping business processes and visualising data



iPlon India

About iPLON India

iP → TCP-iP (Communication Protocol)

LON → Works (Decentral Applications)

Introduction & Key Highlights

- 20 year old German founded firm with expertise in O&M based Monitoring and Control solutions for PV Plants
- DNA: **R&D Company** with Key Expertise for developing tailormade & Innovative Solutions for Power Control and IoT Edge & Cloud Computing
- Presence in Indian Market since 2013; R&D Base & Indian Operations - Chennai (“**Made in Mylapore**”)- 60+ Staff Members
- Following Sustainable Path: **ISO 27001 (ISMS);** Cyber Security Compliant **and Low CO2 Foot Prints**
- Focused on **DIGITALISATION & INDUSTRY4.0** Standards
- **2.5 GW+ Installations** in India for Utility Scale SCADA (iOT-Observability) Solutions
- **150+ Microgrid (iPV-DG Hybrid/ i_EMS),** 1000+ Combined Installations for Monitoring, Grid Feed-In Control together with Solar-Log in C&I and Rooftops
- Dedicated team of PV Nurses & PV Doctors near to major Solar Parks; managing **AMC for 2GW+ Utility SCADA Systems**
- Monitoring as a Service for **2000+ Rooftop Installations** majorly across Europe & Other Countries

Schwäbisch Hall

Heidelberg

Ulm

Emerging Trends for C&I Segment India & Motivation for Solar-Log/iPLON Synergy

ON-Grid PV+BESS

On Long term the combination of On-Grid PV+BESS will dominate the C&I Segment

- Presently viable for consumers requiring savings on peak TOD tariff, peak load balancing and DG replacement
- Future of Smart Energy The Future of Smart Energy: Creating More Sustainable Ecosystems with Smart Technology

PV Integrated EV Charging Station

Greater self-sufficiency for C&I consumers

- also address the issue of EVs being fuelled by electricity generated from greenhouse gas (GHG) emitting-fossil fuels.
- Solar carports are already becoming a popular choice among many C&I customers being a cost saving option, and as well as for the advancement of Organization's sustainability performance.

Integration of Captive RE with EV Charging Infrastructure

Captive charging is permitted in accordance with the Ministry of Power’s Charging Infrastructure for Electric Vehicles – Guidelines and Standards

- Many states such as Andhra Pradesh, Bihar, Delhi, Tamil Nadu, etc., through their state EV policies, promote the interlinking of a captive renewable energy system and EV charging infrastructure.

Emerging Demand for Grid Stability Solutions

With the increasing penetration of inverter-dominated solar energy, decrease in power grids inertia; hence reducing the power quality and creating more Grid fluctuations.

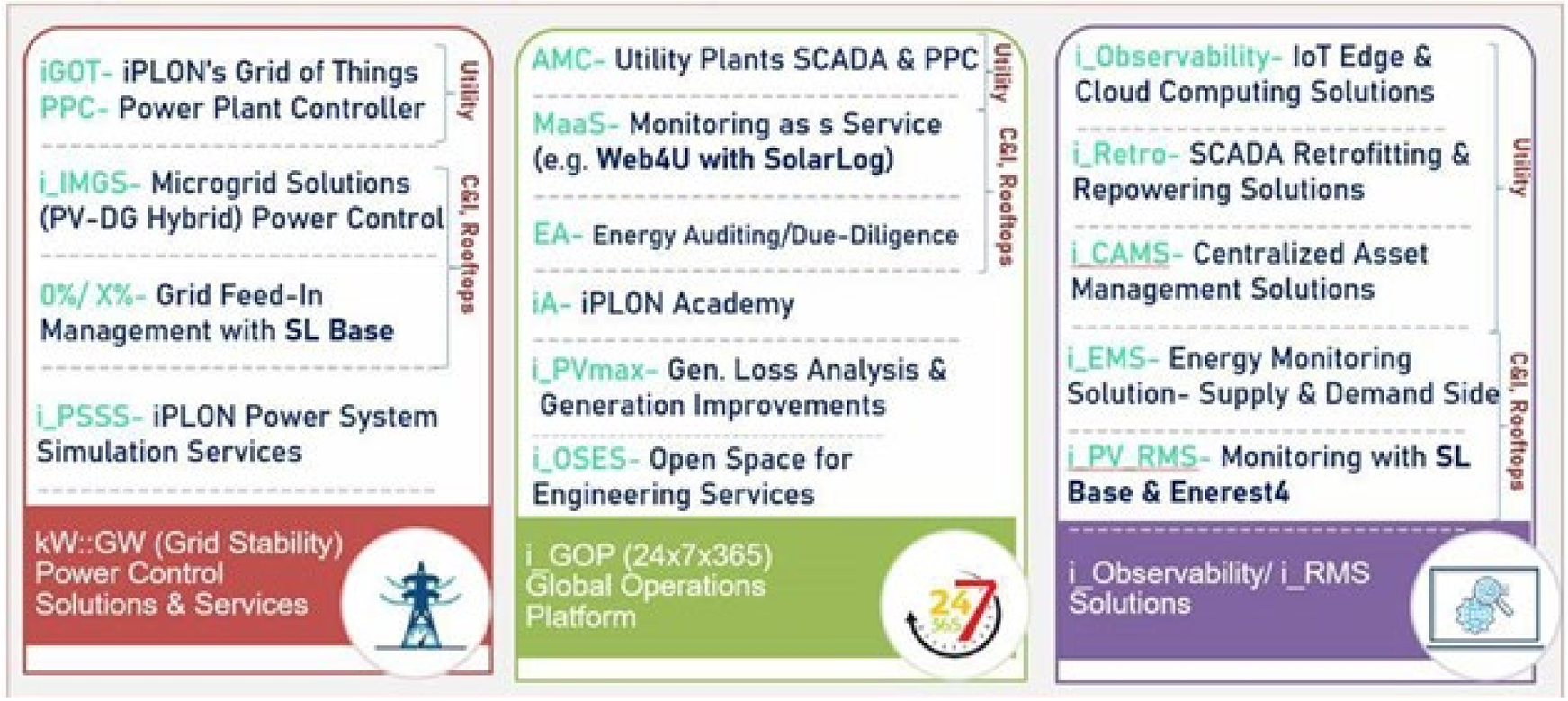
- Changes in Billing Mechanisms happening in many states already – kVAh (Apparent Energy) based billing
- Dynamics in State Wise Policies for Net Metering Capping or Grid Zero Export Management

C&I Shift Towards Rooftops & Open Access

Aim to fulfill green obligations to be eligible for exports & meet their ESR Goals

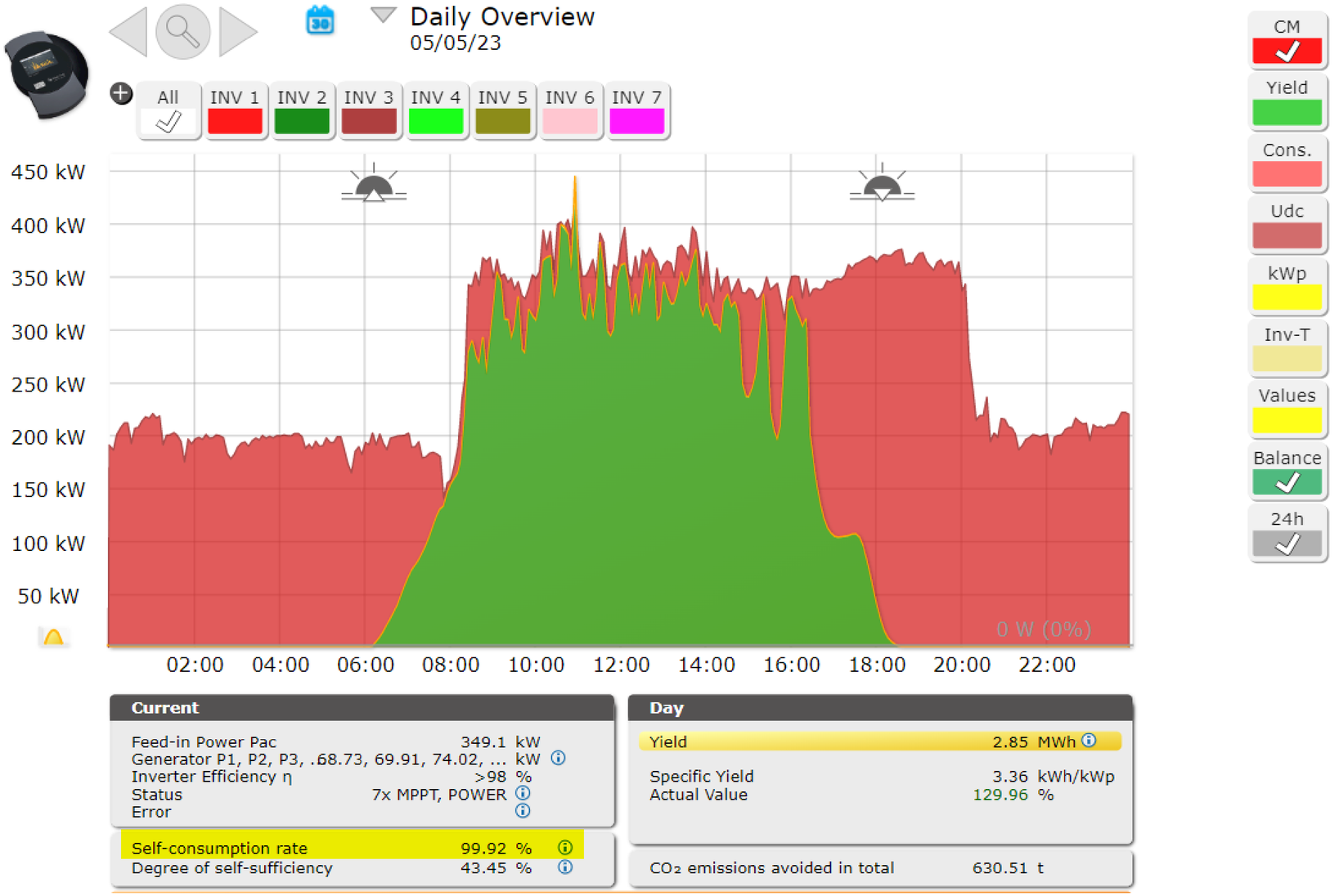
- Goal for Round the Clock Power from RE Gen. Sources

Insights to iPlon‘s (kW:GW) Solutions & Services



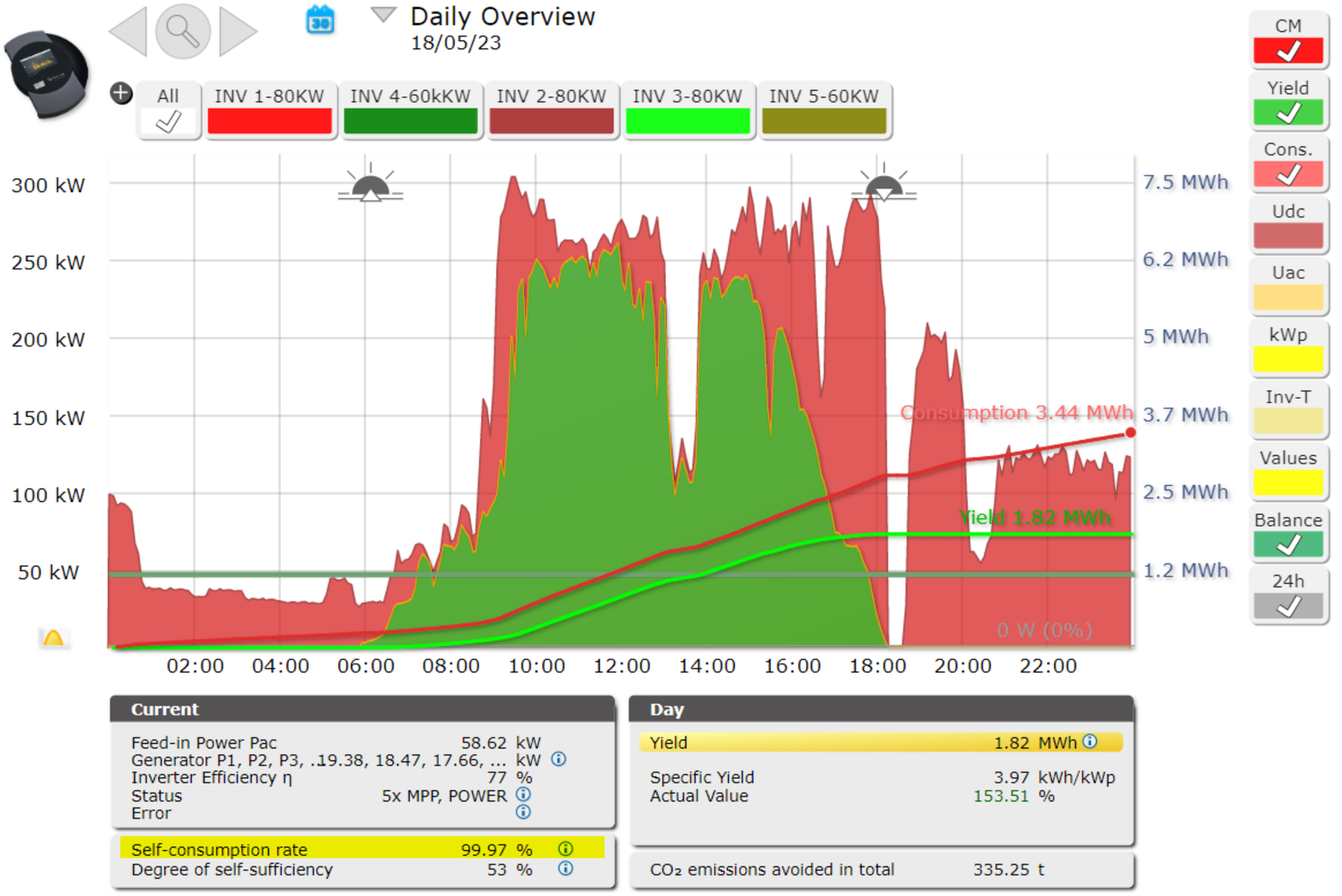
(Glimpse of Various C&I Sites in India) - Solar-Log on Role to Manage 0% Feed-In Control with Diverse Inverters

- Solar-Log 2000
- 848 kWp
- ZE Site with 7 x ABB PVS 120 Inverters
- 1 x Schneider EM6400NG Meter



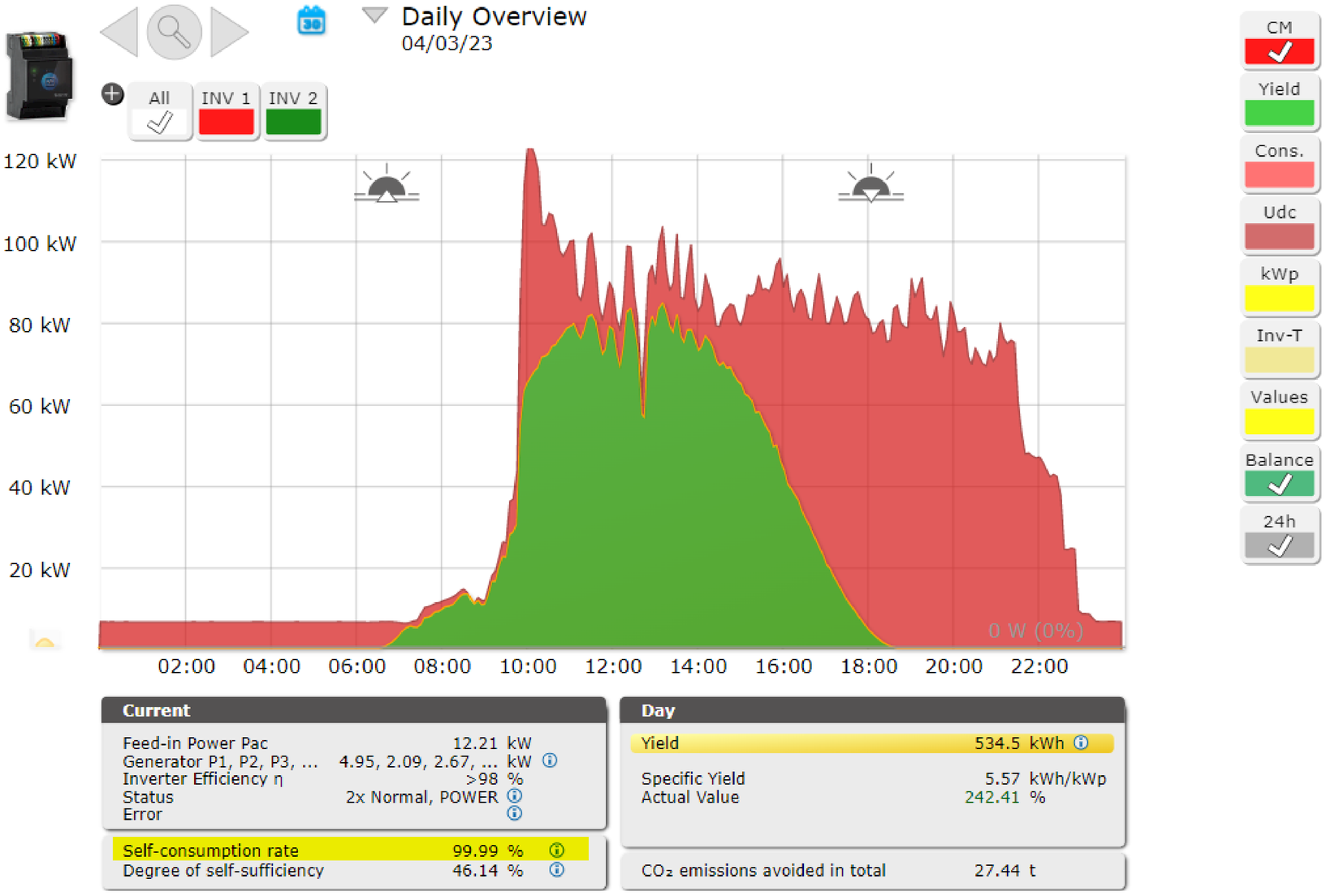
(Glimpse of Various C&I Sites in India) - Solar-Log on Role to Manage 0% Feed-In Control with Diverse Inverters

- Solar-Log 2000
- 460 kWp
- ZE Site with 5 x Goodwee Inverters
- 1 x Schneider EM6400NG Meter



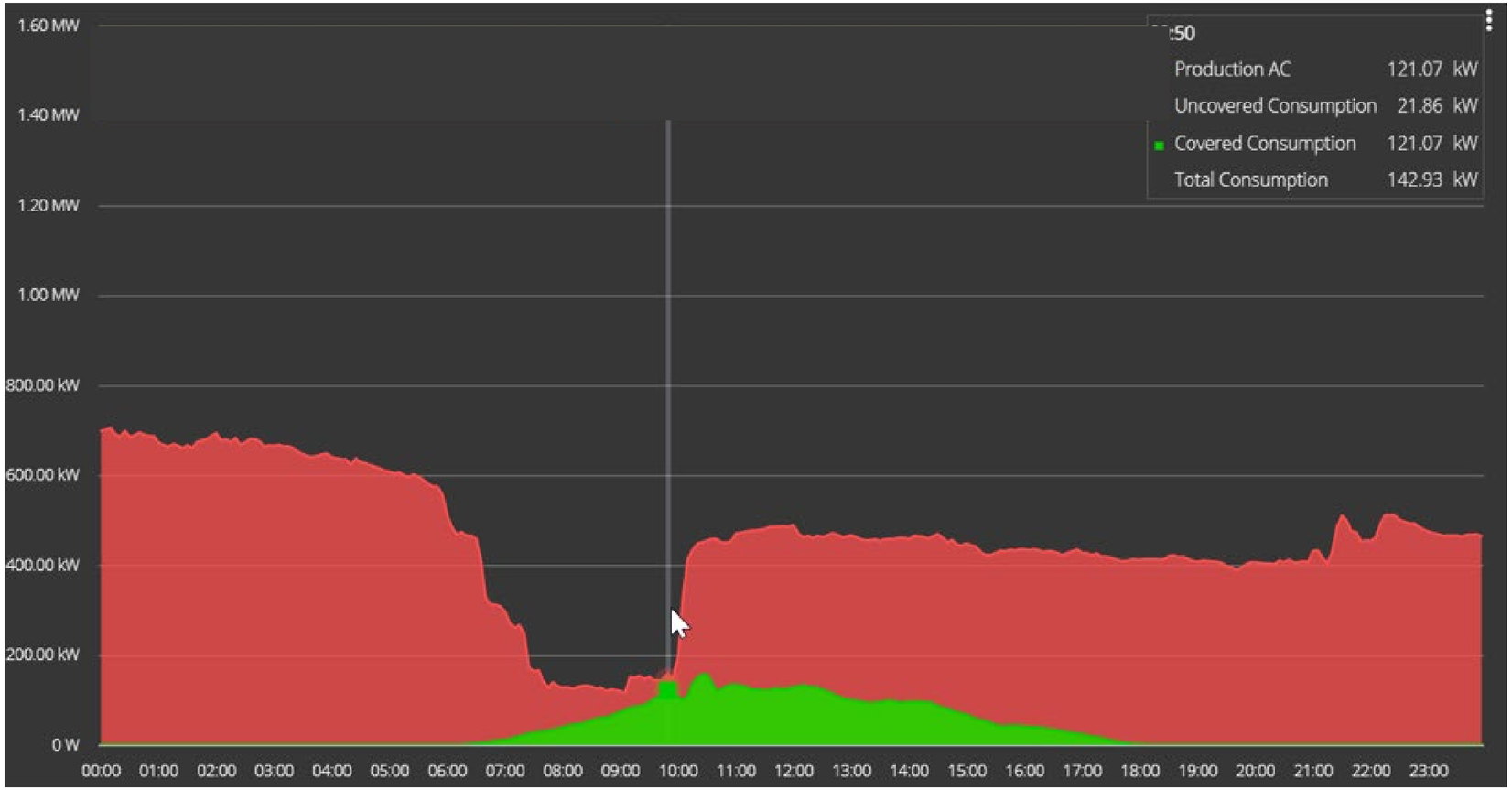
(Glimpse of Various C&I Sites in India) - Solar-Log on Role to Manage 0% Feed-In Control with Diverse Inverters

- Solar-Log 100
- 200 kWp
- ZE Site with 2 x Growatt Max Inverters
- 1 x Schneider EM6400NG Bi-Directional

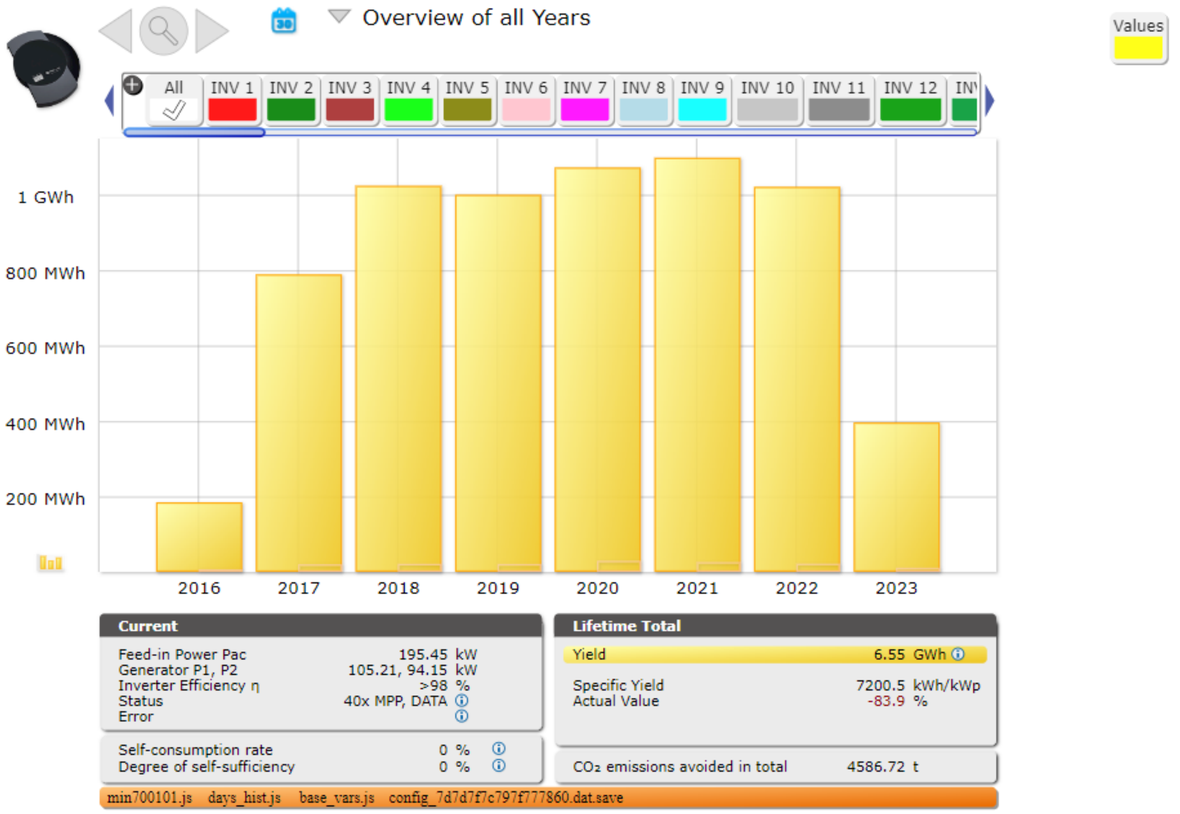


(Glimpse of Various C&I Sites in India) - Solar-Log on Role to Manage 0% Feed-In Control with Diverse Inverters

- Solar-Log 1900
- 200 kWp
- ZE Site with 4 x Sungrow 50 kW Inverters
- 1 x Secure 445 Bi-Directional Consumption Meter



972kWp Distributed PV (Rooftop+GroundMount+Carport); monitored by Solar-Log™ Old Gen. (40x Delta Inverters) since 2016



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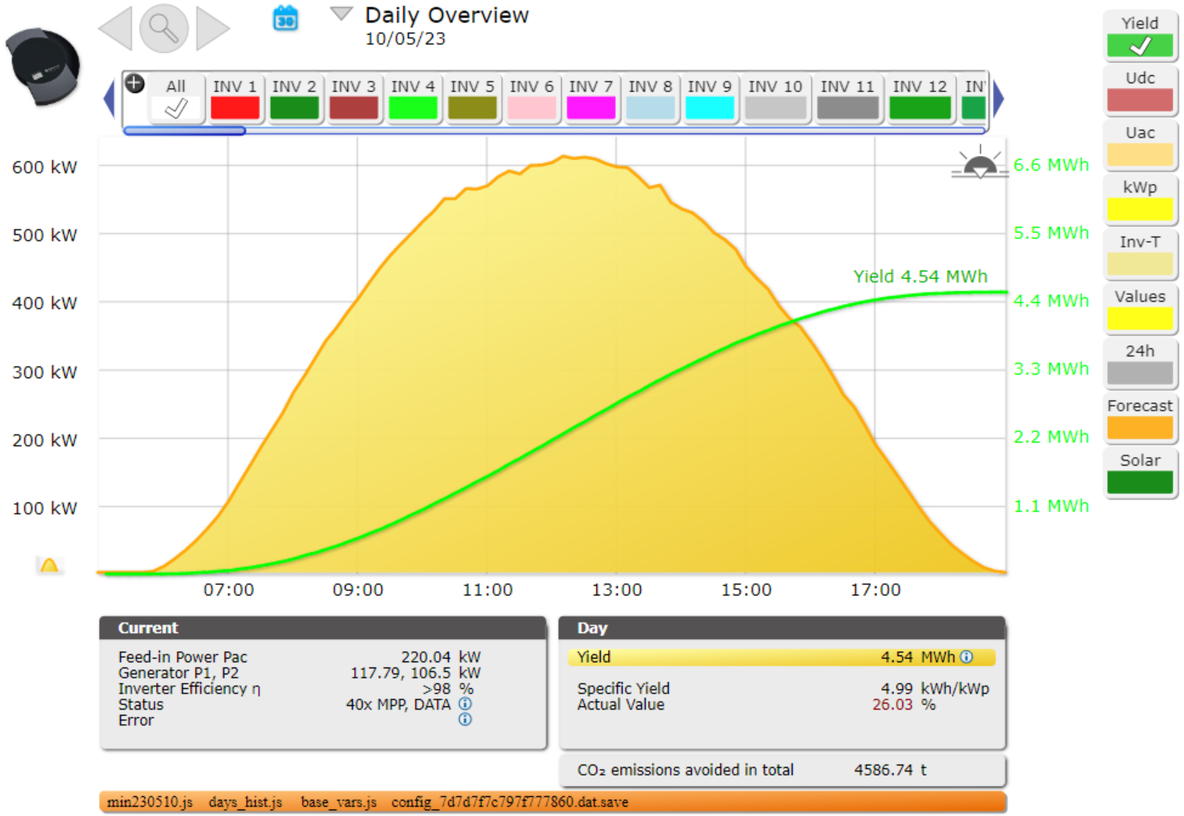
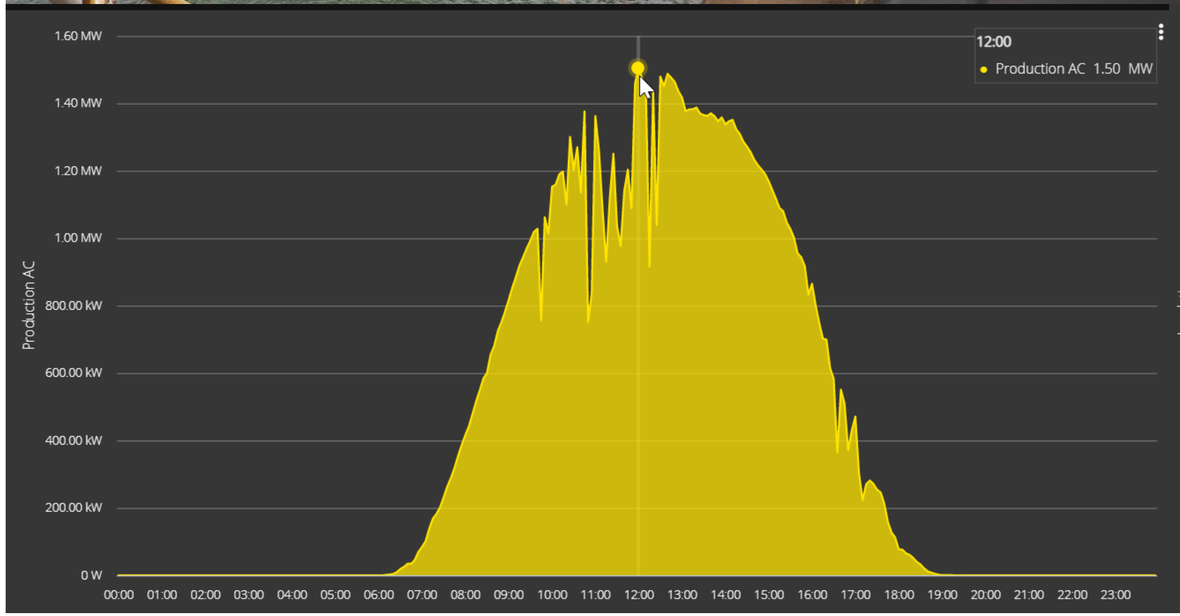


2MWp Floating Solar Power Plant; monitored by Solar-Log Base 2000 & Solar-Log WEB Enerest™ 4 - 29x Solis 80K 5G Inverters



Power Management

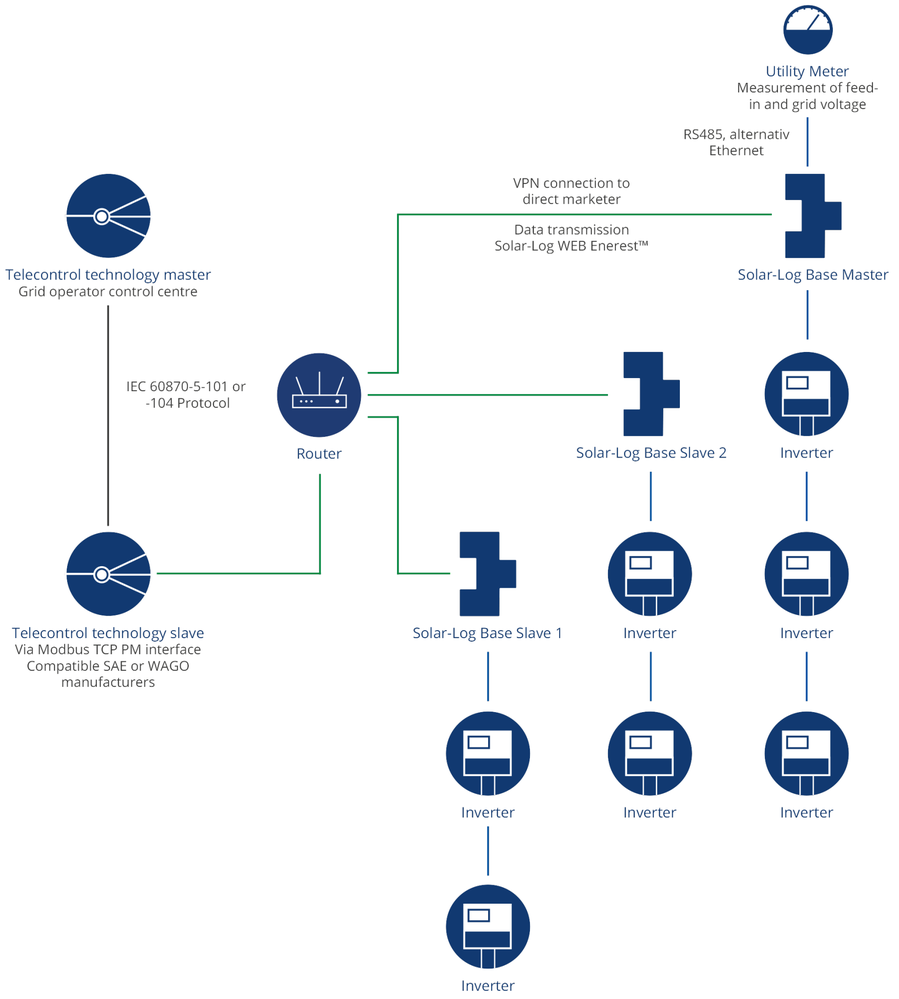
Power Management Examples:

Germany

- Power Management requirements since 2009
- Different with each Grid Operator
- Different regulations for MV/HV and LV
- Different certifications required VDE 4105 / 4110 /4120
- Licences and expansion modules available as per requirements

Power Management Examples:

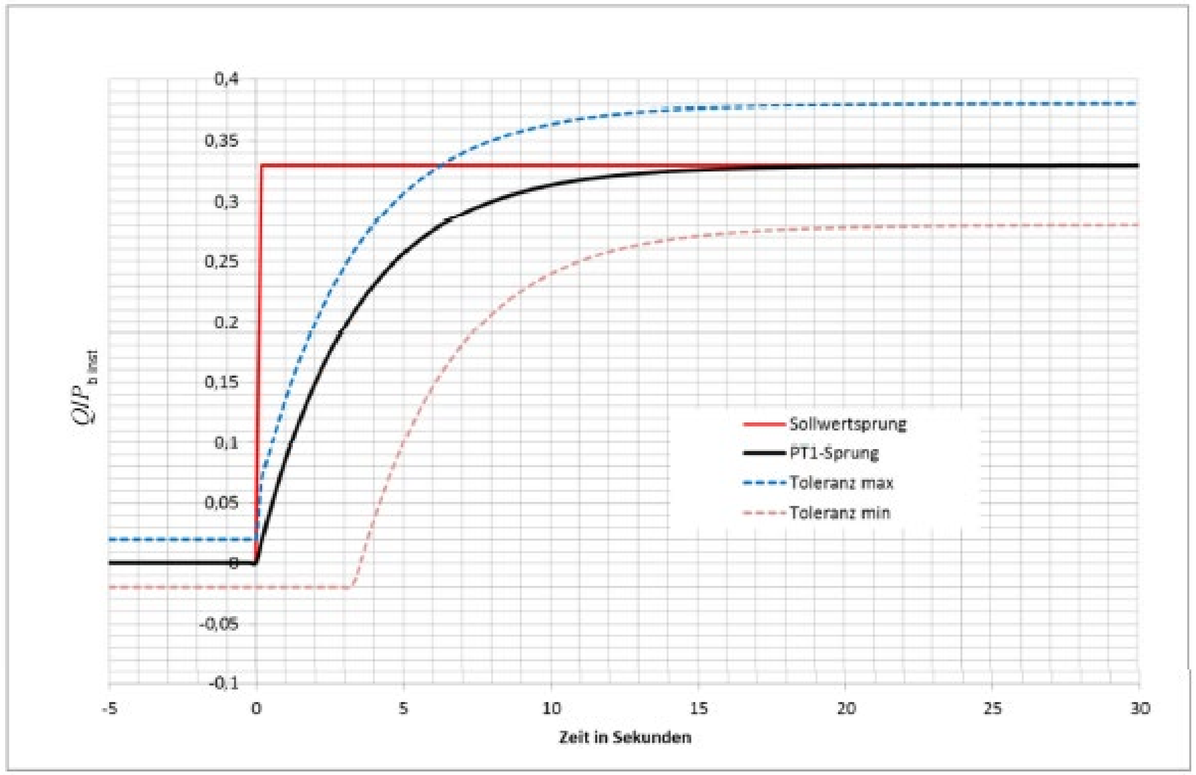
Germany



- Example VDE 4110:
- Master – Slave configuration with max. 10 Solar-Log Base
- Solarpark or industrial area with different Buildings

Power Management Examples:

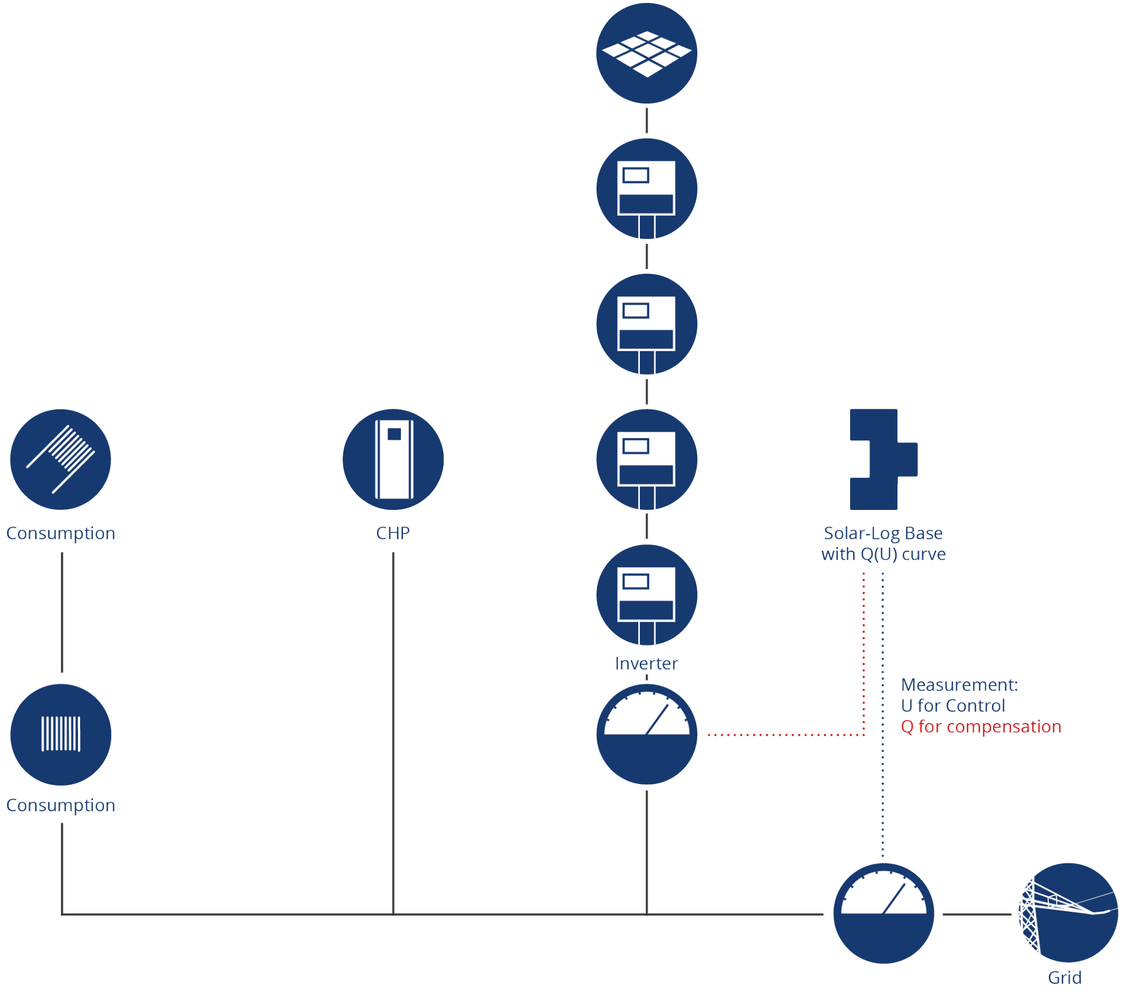
Germany



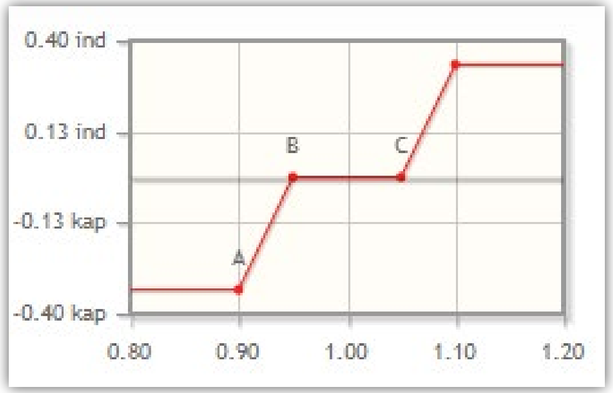
- Example VDE 4110:
- Rules how to reach active and reactive outpit linear or PT 1 function

Power Management Examples:

Germany

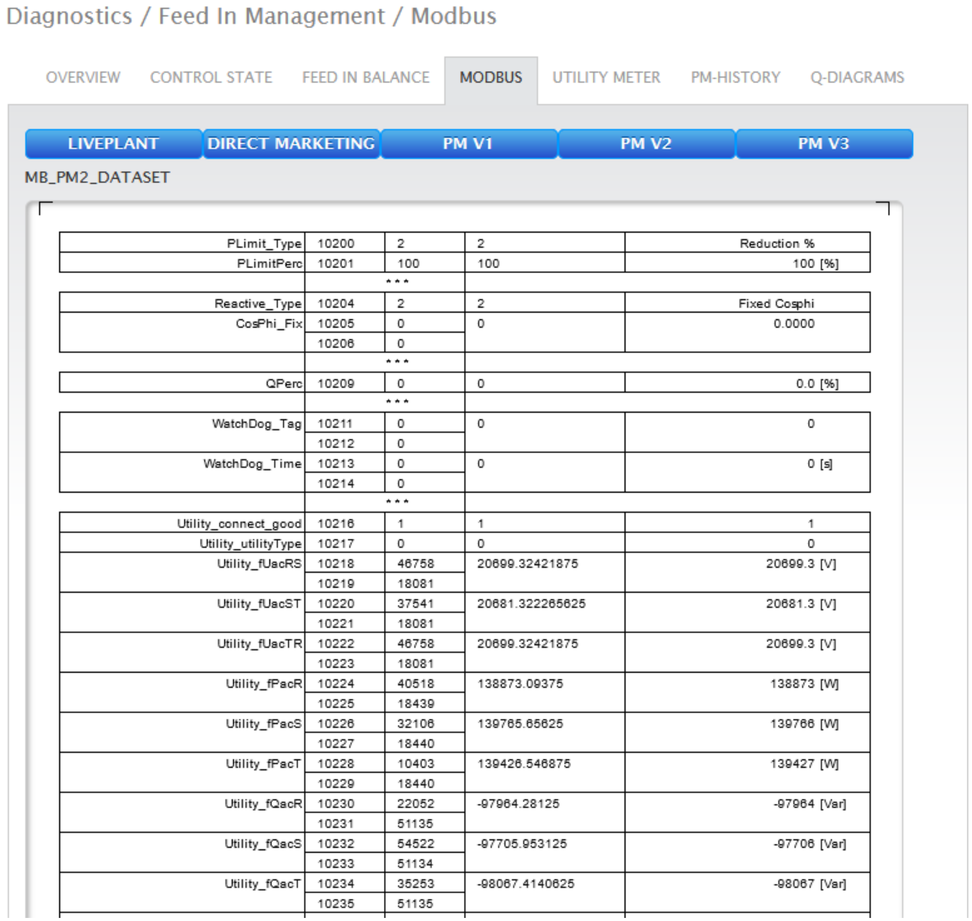


Not only comands, but measrurement and compensation for reactive power



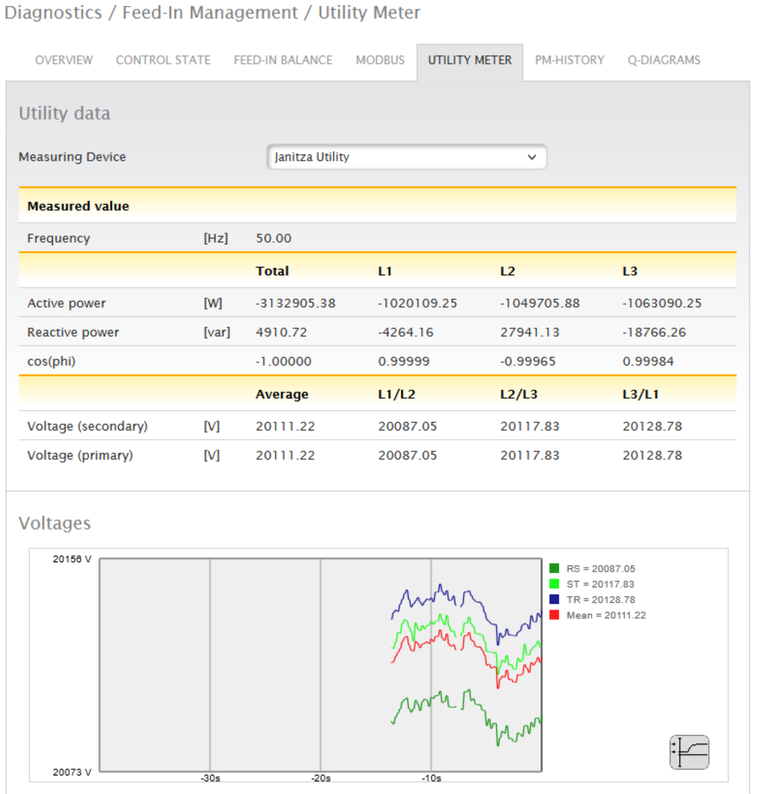
Power Management Examples:

Germany



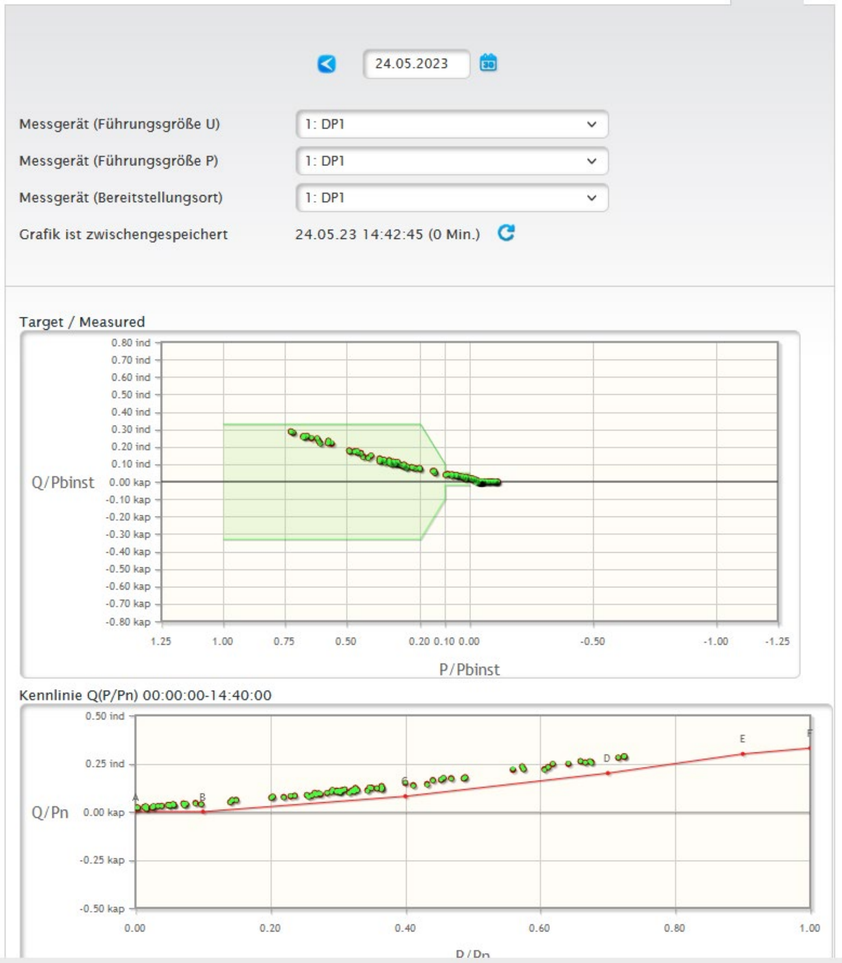
PLimit_Type	10200	2	2	Reduction %
PLimitPerc	10201	100	100	100 [%]
		* * *		
Reactive_Type	10204	2	2	Fixed Cosphi
CosPhi_Fix	10205	0	0	0.0000
	10206	0		
		* * *		
QPerc	10209	0	0	0.0 [%]
		* * *		
WatchDog_Tag	10211	0	0	0
	10212	0		
WatchDog_Time	10213	0	0	0 [s]
	10214	0		
		* * *		
Utility_connect_good	10216	1	1	1
Utility_utilityType	10217	0	0	0
Utility_fUacRS	10218	46758	20699.32421875	20699.3 [V]
	10219	18081		
Utility_fUacST	10220	37541	20681.322265625	20681.3 [V]
	10221	18081		
Utility_fUacTR	10222	46758	20699.32421875	20699.3 [V]
	10223	18081		
Utility_fPacR	10224	40518	138873.09375	138873 [W]
	10225	18439		
Utility_fPacS	10226	32106	139765.65625	139766 [W]
	10227	18440		
Utility_fPacT	10228	10403	139426.546875	139427 [W]
	10229	18440		
Utility_fQacR	10230	22052	-97964.28125	-97964 [Var]
	10231	51135		
Utility_fQacS	10232	54522	-97705.953125	-97706 [Var]
	10233	51134		
Utility_fQacT	10234	35253	-98067.4140625	-98067 [Var]
	10235	51135		

- Diagnostic functions for easy setup and test with Grid Operator

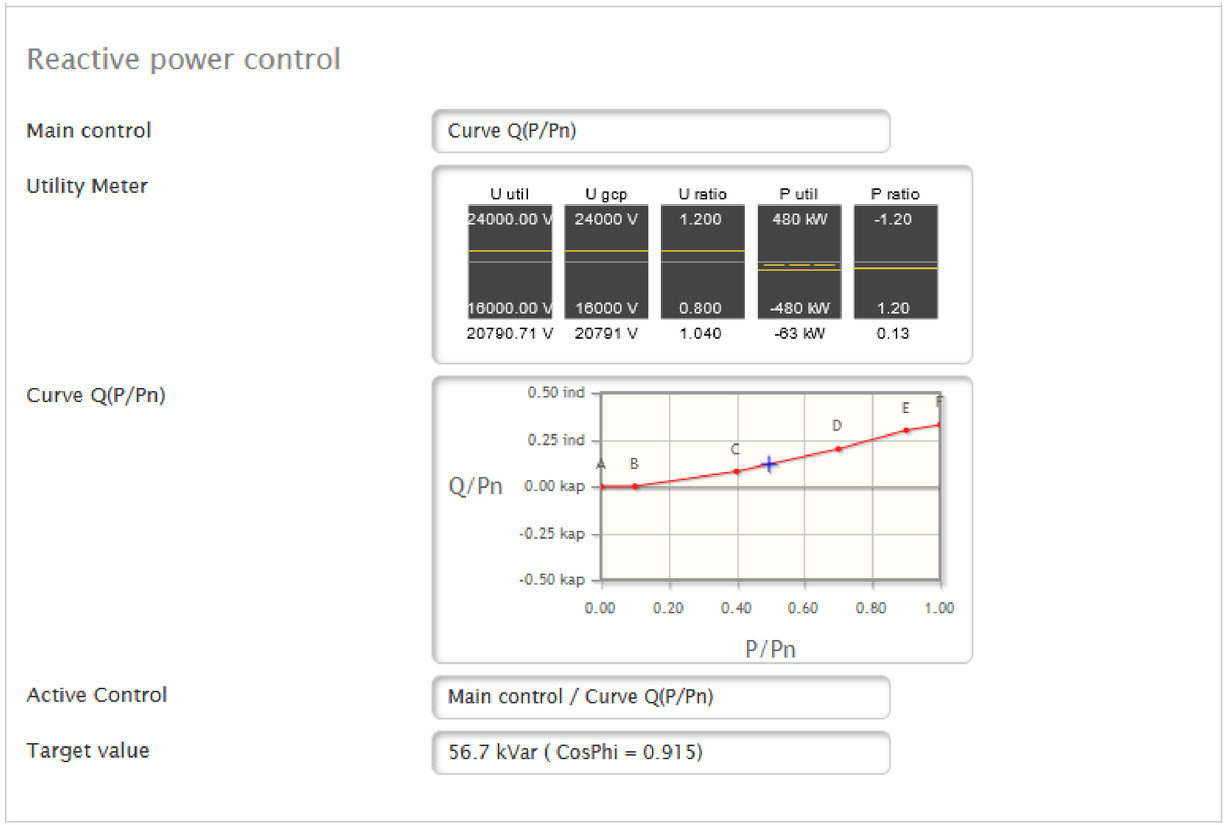


Power Management Examples:

Germany

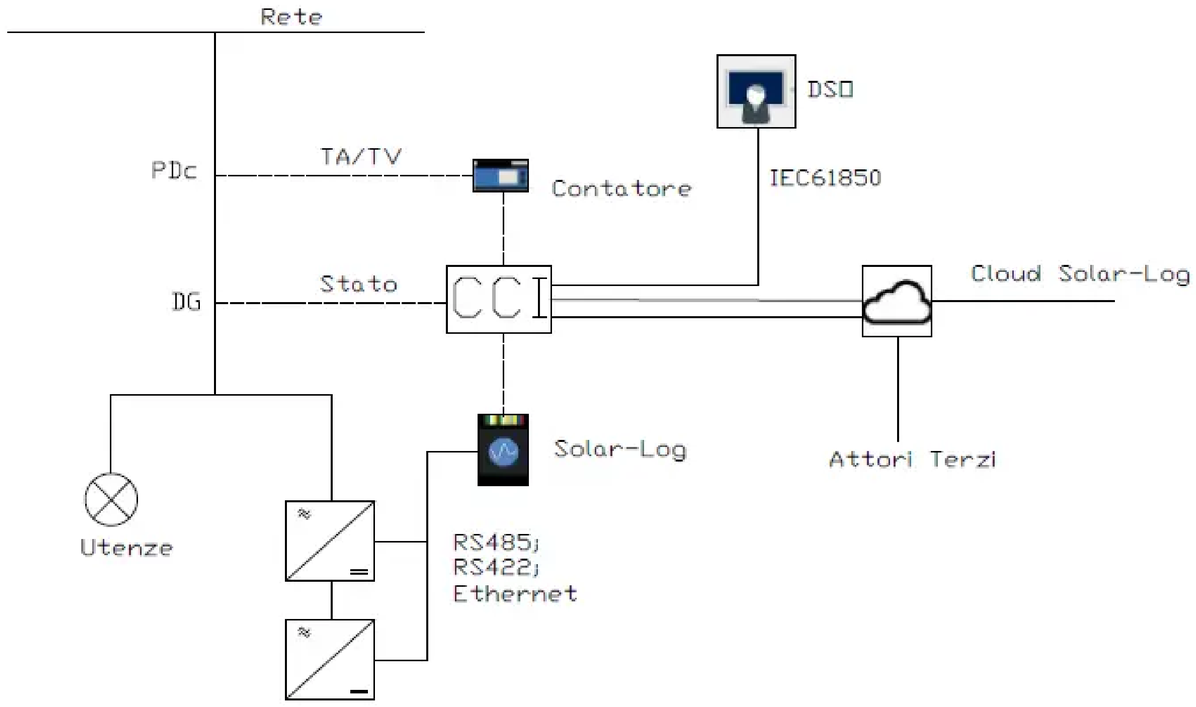


- Diagnostic functions for easy setup and test with Grid Operator



Power Management Examples:

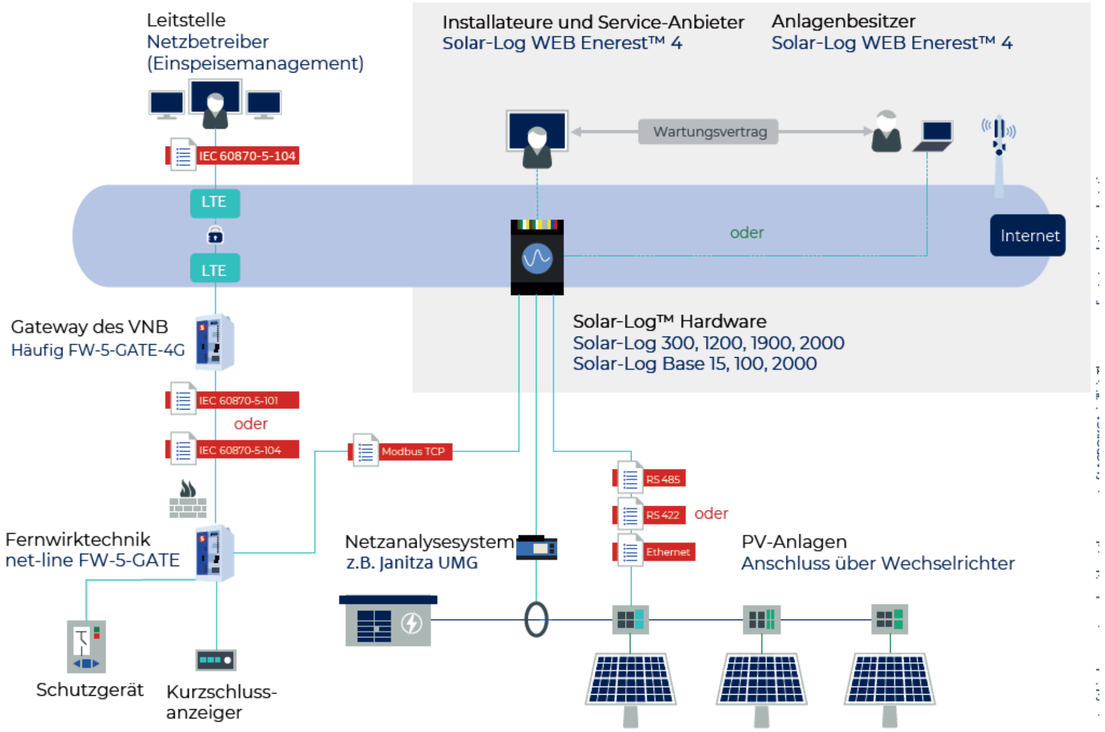
Italy



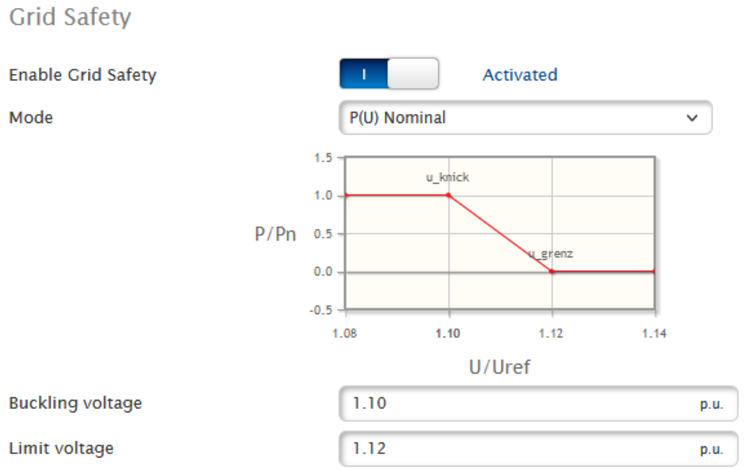
- Deliver measurement data to Grid operator via IEC 61850 protocoll using CCI device
- Power management functions will be added later

Power Management Examples:

Austria

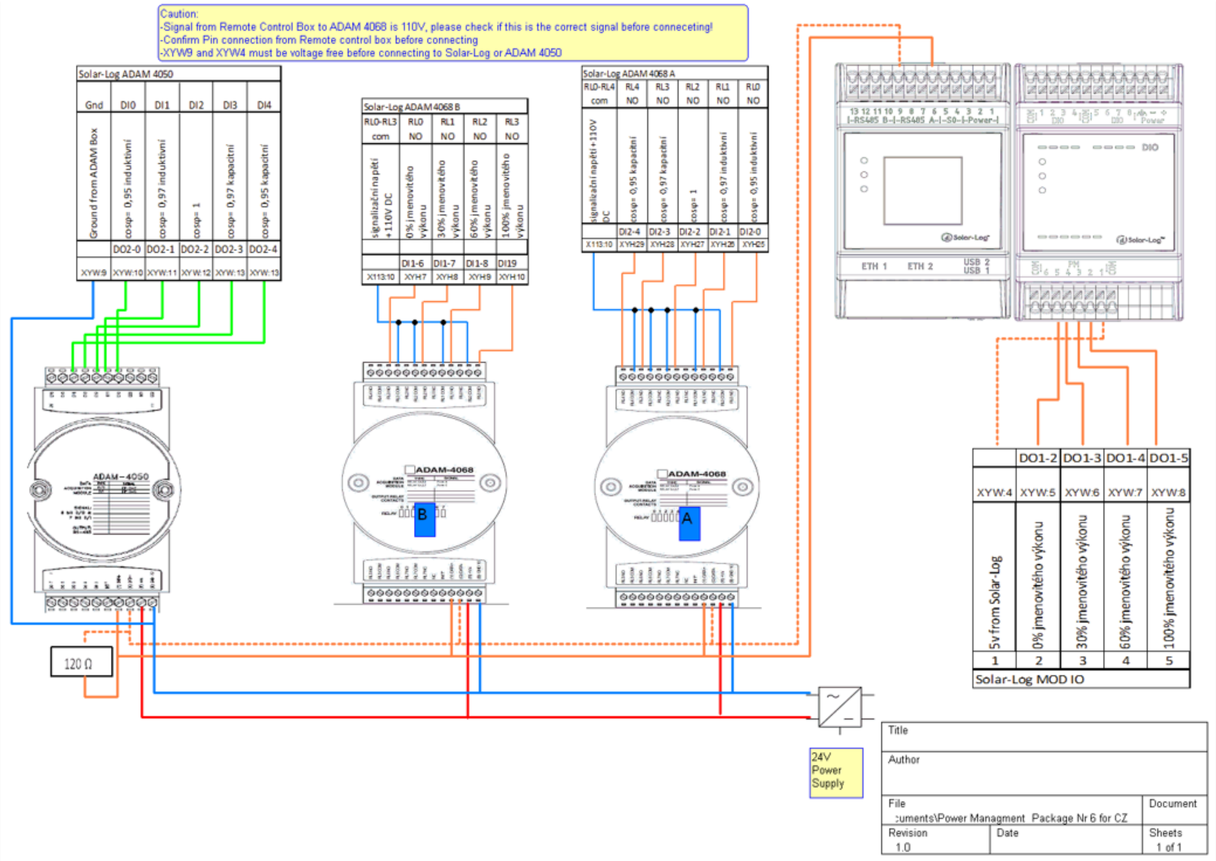


- different requirements from each grid operator
- Usually via IEC 60870 protocoll or Solar-Log Base Modbus TCP PM Interface directly
- P(U) Function added
- Partnership with SAE IT Systems



Power Management Examples:

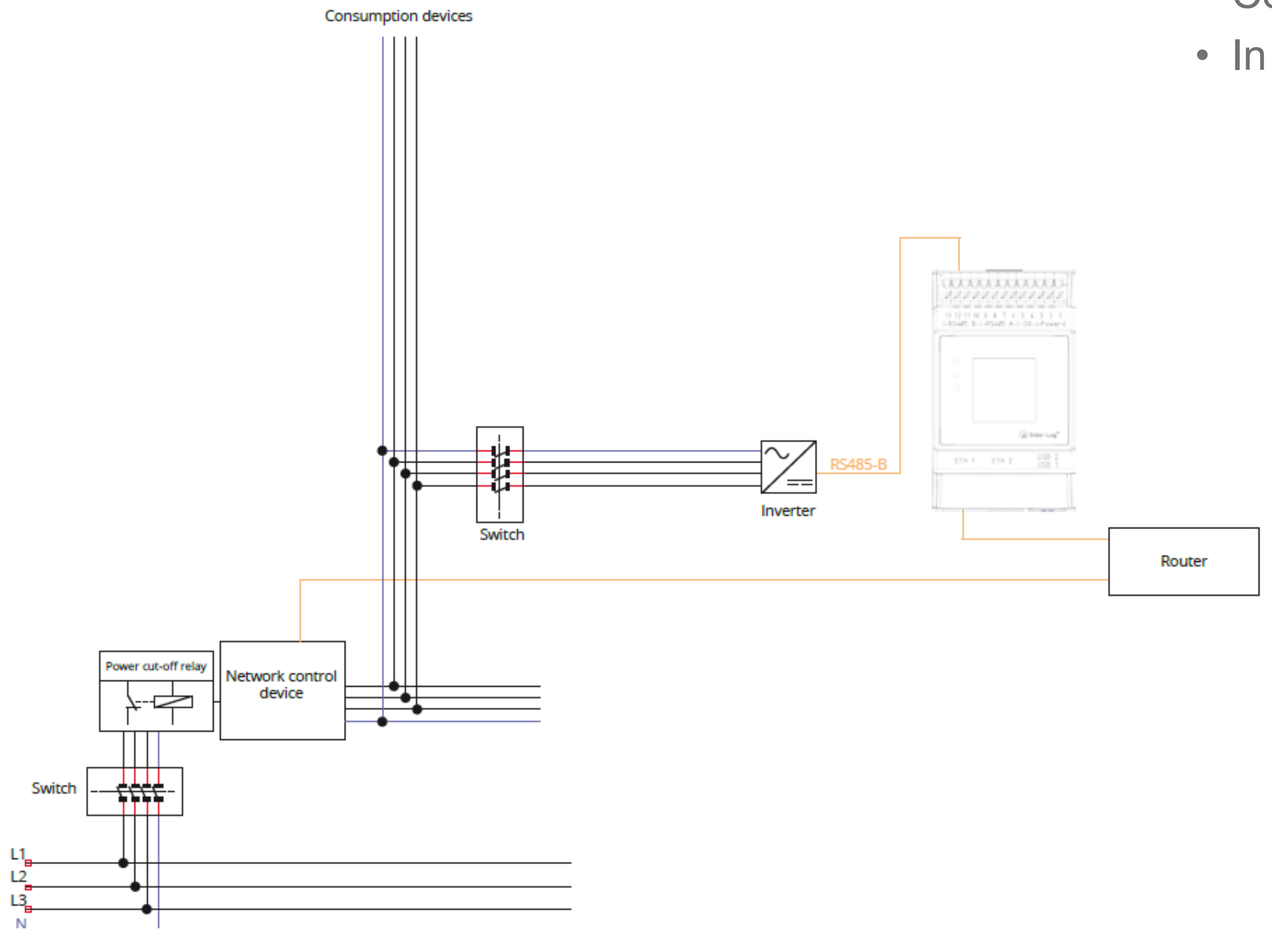
Czech Republic



- Power management for active and reactive power with dry contacts and confirmation
- Values for P and Q as 4-20mA signal

Power Management Examples:

Spain



- Certified zero Feed-in solution required
- In partnership with local company Real Energy Systems

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this webinar is powered by
Solar-Log

pv magazine webinars

The role of monitoring in managing power and maximizing returns: Indian C&I segment in focus

Q&A

31 May 2023

12:00 pm – 1:00 pm | CEST, Berlin
2:00 pm – 3:00 pm | Dubai
3:30 pm – 4:30 pm | IST, Delhi

Jonathan Gifford
Editor in chief
pv magazine global

Uma Gupta
Editor
pv magazine

Rob Van Gestel
Sales Director
Solar-Log

Roland Löhr
Product Management & Project Engineering
Solar-Log

Rahul Sharma
Sales Director-North India/ Delhi NCR Region
iPlon India

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pv magazine webinars

Coming up next...

Thursday, 1 June 2023
3:00 pm – 4:00 pm BST, London
4:00 pm – 5:00 pm CEST, Berlin

AI or not AI for fault prediction and climate risk assessment in solar plants: misconceptions and facts

Tuesday, 6 June 2023
2:00 pm – 3:00 pm EDT, New York City
8:00 pm - 9:00 pm CEST, Berlin

Approaching bankability for grid-scale energy storage

Many more to come!

In the next weeks, we will continuously add further webinars with innovative partners and the latest topics.

Check out our pv magazine Webinar program at:

www.pv-magazine.com/webinars

Registration, downloads & recordings are also be found there.

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pv magazine webinars

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Thank you for joining today!