

AEG

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Protect 8 31 S10 & Protect 8 33 S10



RECTIFIER UNIT			
Nominal DC voltage	108 V	216 V	384 V
Nominal AC voltage	3 x 400 V (3 x 380 V, 3 x 415 V)*		
Input frequency range	50 / 60 Hz $\pm 10\%$ *		
Operation range (min./max.)	340 V – 460 V		
Input current in A at nominal load	17 – 102 A	18 – 200 A	270 A
Rectifier type			
– Standard	6 pulse		
– Option	Filter / 12 pulse		
INVERTER UNIT			
DC Input	108 V $\pm 20\%$	216 V $\pm 20\%$	384 V $\pm 20\%$
@3 phase output voltage configuration			
– Nominal AC voltage in V	3 x 400 V (3 x 380 V, 3 x 415 V)*		
– Nominal output current in A	14 – 87 A	14 – 173 A	–
– Nominal power in kVA	10 – 60 kVA	10 – 120 kVA	–
@1 phase output voltage configuration			
– Nominal AC voltage in V	230 V (220 V, 240 V)*		
– Nominal output current in A	22 – 261 A	43 – 522 A	696 A
– Nominal power in kVA	5 – 60 kVA	10 – 120 kVA	160 kVA
Output voltage static response	< $\pm 1\%$		
Output voltage dynamic response	< $\pm 2\%$		
Recovery time	2 ms		
Frequency	50/60 Hz		
Frequency static tolerance	$\pm 0.1\%$		
Frequency synchronization range	$\pm 1\%$ ($\pm 2\%$, $\pm 3\%$)		
Power factor at nominal load	Cos φ 0.8		
Voltage wave form	Sinusoidal		
Crest factor	≤ 3		
Overload response 1 min.	150 %		
Overload response 10 min.	125 %		
Short circuit response	≤ 3 Inominal		

Protect 8 31 S14 & Protect 8 33 S14



RECTIFIER UNIT	
Nominal DC voltage	384 V
Nominal AC voltage	3 x 400 V (3 x 380 V, 3 x 415 V)
Input frequency range	50 Hz/60 Hz $\pm 10\%$
Operation range (min./max.)	340 V – 460 V
Input current at nominal load	17 – 195 A
Rectifier type	
– Standard	6 pulse
– Option	Filter/12 pulse
INVERTER UNIT	
DC Input	384 V $\pm 20\%$
@3 phase output voltage configuration	
– Nominal AC voltage	3 x 400 V (3 x 380 V, 3 x 415 V)
– Nominal output current	14 – 173 A
– Nominal power	10 – 120 kVA
@1 phase output voltage configuration	
– Nominal AC voltage	230 V (220 V, 240 V)
– Nominal output current	43 – 261 A
– Nominal power	10 – 60 kVA
Output voltage static stability	$< \pm 1\%$
Output voltage dynamic response	$< \pm 2\%$
Recovery time	2 ms
Frequency	50/60 Hz
Frequency static stability (on internal clock)	$\pm 0.1\%$
Frequency synchronization range	$\pm 1\%$ ($\pm 2\%$, $\pm 3\%$)
Power factor at nominal load	Capacitive to inductive over entire cos - range
Voltage wave form	Sinusoidal
Crest factor	≤ 3
Overload capacity 1 min.	150 %
Overload capacity 10 min.	125 %
Short circuit response	$\leq 2.7 I$ nominal

Protect 4 33



RECTIFIER UNIT

Nominal DC voltage	384 V
Nominal AC voltage	3 x 400 V (3 x 380 V, 3 x 415 V)
Input frequency range	50 Hz / 60 Hz $\pm 10\%$
Operation range (min. / max.)	340 V – 460 V
Input current at nominal load	259 – 1230 A
Charge characteristic acc. IEC478-10	IU
Max. charging voltage	480 V
Rectifier type	12 pulse

INVERTER UNIT

DC Input	384 V $\pm 20\%$
Nominal AC voltage	3 x 400 V (3 x 380 V, 3 x 415 V)
Nominal output current	231 – 867 A
Nominal power	160 – 600 kVA
Output voltage static response	$< \pm 1\%$
Output voltage dynamic response 0% – 100% – 0%	$< \pm 5\%$
Recovery time	2 ms
Frequency	50 / 60 Hz
Frequency static tolerance	$\pm 0.1\%$
Frequency synchronization range	$\pm 1\%$
Power factor at nominal load	0.0 lag to 0.0 lead
Voltage wave form	Sinusoidal
Crest factor	≤ 3
Overload response 1 min.	150%
Overload response 10 min.	125%
Short circuit response	≤ 3 Inominal

STATIC BYPASS SWITCH

Nominal AC voltage	3 x 400 V (3 x 380 V, 3 x 415 V)
Nominal frequency	50/60Hz
Overload	500% for 10 ms

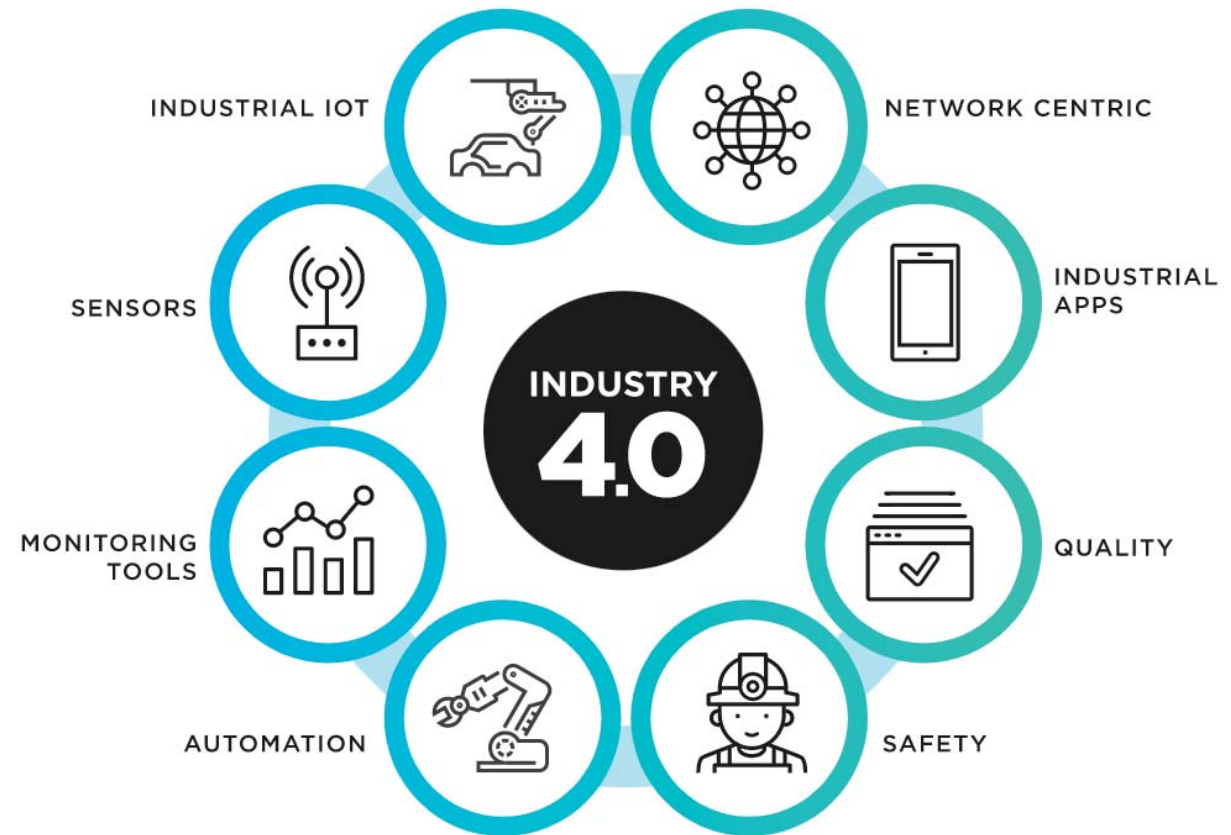
Protect Flex



CABINET	20	30	40
Maximum power capacity (kVA/kW)	20/20	30/30	40/40
Maximum number of power modules connected	2 x 10kVA	2 x 15kVA	4 x 10kVA
Dimensions with IP20, W x D x H (mm)	600 x 800 x 1800		
Weight of standard cabinet IP20 without transformer (kg)	205	205	215
Phase configuration	3/3; 3/1; 1/1	3/3	3/3; 3/1; 1/1
Color of the frame	RAL 7035		
Ventilation	Dual ventilation system: In each power module with inbuilt fan fault detection and inside the cabinet (forced ventilation from front to top)		
POWER MODULE 10 KVA/KW			
Dimensions W x D x H (mm)	438 x 590 x 85 (2U)		
Weight (kg)	15.3		
POWER MODULE 15 KVA/KW			
Dimensions W x D x H (mm)	438 x 590 x 85 (2U)		
Weight (kg)	15.5		
INPUT			
Rectifier type	IGBT based, Vienna bridge		
Nominal voltage	(3 phase+N+G) 380/400/415 Only with 10kVA/kW Power Module: (1 phase+N+G) 220/230/240		
Voltage range (V)	304 to 478 V (at full load) 228 to 304 V (with load decreasing linearly)		
Frequency (Hz)	50/60 (input frequency range: 40/70 Hz)		
Input power factor	> 0.99		
Input THDi	< 4% (with full linear load)		
OUTPUT			
Inverter type	3-level IGBT based		
Voltage (V)	(3 phase) 380/400/415 Only with 10kVA/kW Power Module: (1 phase+N+G) 220/230/240		
Output THDv (according to IEC EN 62040-3)	< 1% (with linear load) < 5.5% (with non linear load)		
Output PF	Up to 1		
Crest factor	3:1		
Frequency (Hz)	50/60		
Overload capacity (through inverter line)	110% for 60 min 125% for 10 min 150% for 1 min > 151% for 200 ms		
AC/AC efficiency in double conversion (VFI) of 10/15 kVA Power Module	96,6% (at 25% of load) 94,9% (at 50% of load) 95,1% (at 75% of load) 94,8% (at 100% of load)		
AC/AC efficiency in ECO Mode (VFD)	> 98% (at nominal load)		

Internet of Things (IoT)

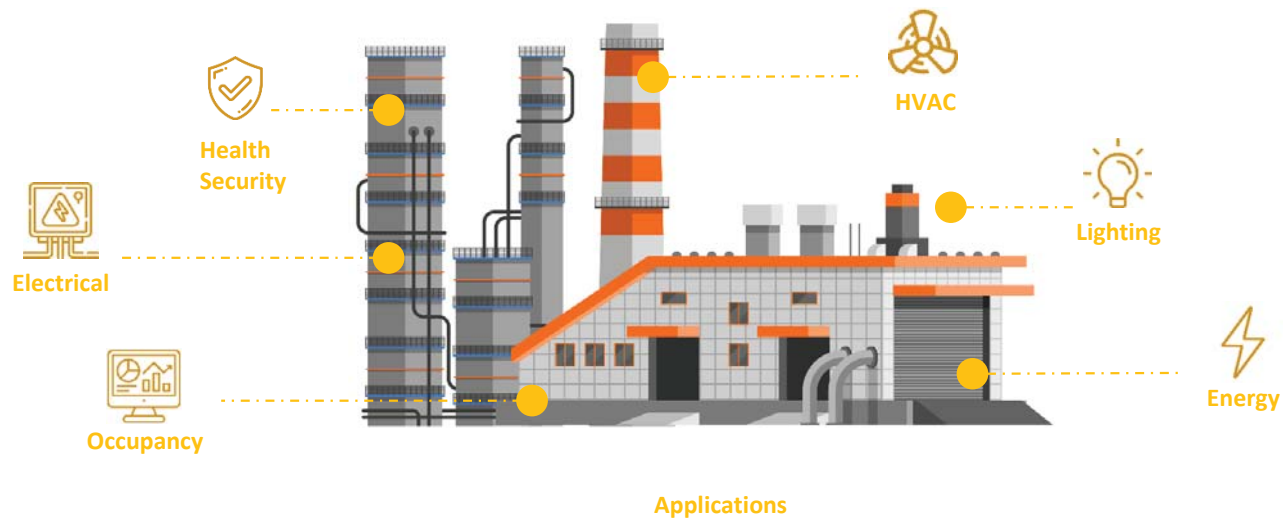
Interconnected sensors, instruments, and other devices networked together with computers' industrial applications, including manufacturing and energy management. This connectivity allows for data collection, exchange, and analysis, potentially facilitating improvements in productivity and efficiency as well as other economic benefits.



Building Management System

BMS systems are “Intelligent” microprocessor based controller networks installed to monitor and control a buildings technical systems and services such as air conditioning, ventilation, lighting and hydraulics.

- More specifically they link the functionality of individual pieces of building.
- Equipment so that they operate as one complete integrated system.



Product types for **Honeywell**

HARDWARE



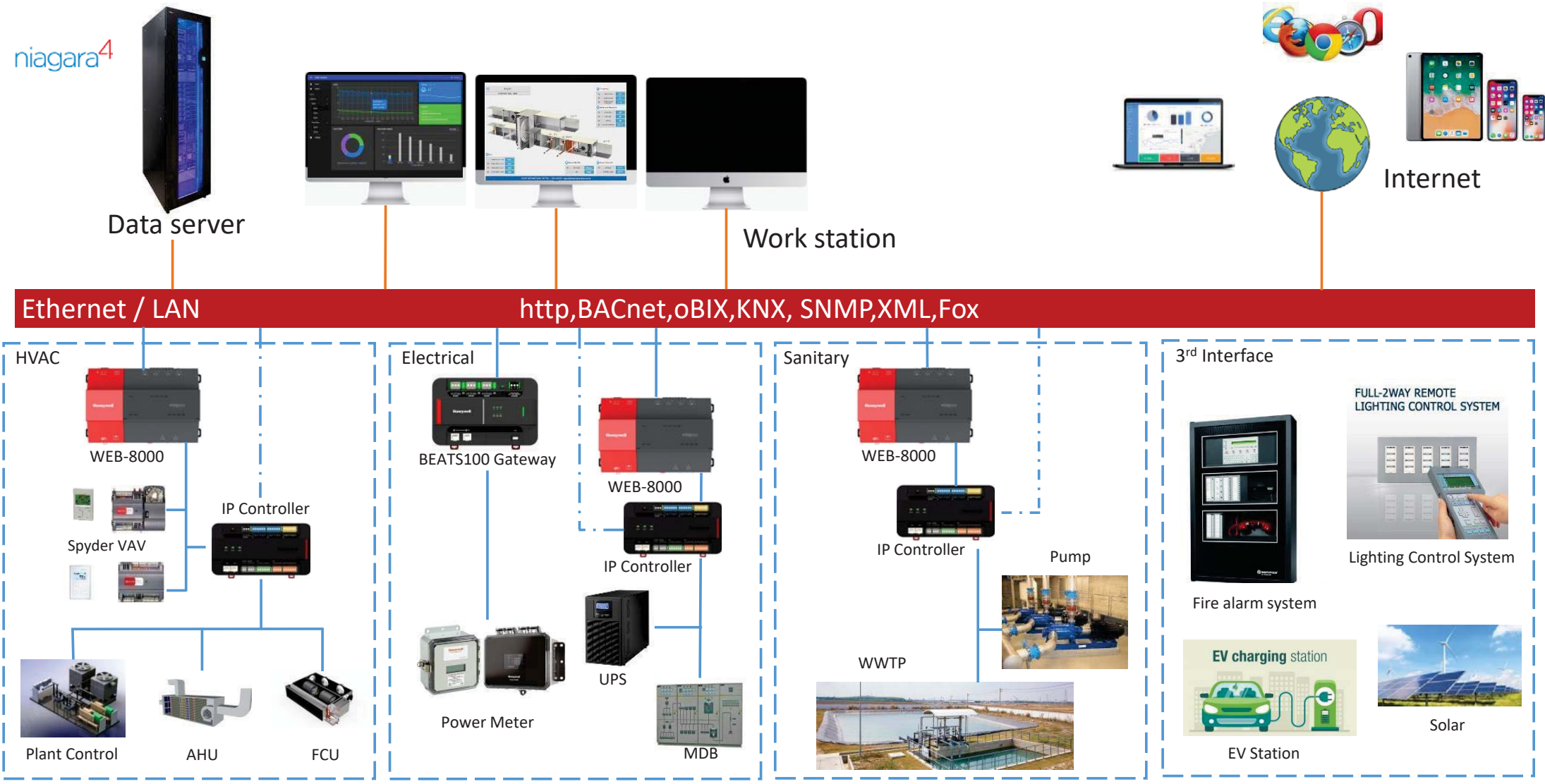
Network Controller

SOFTWARE



Niagara

Solutions Diagram



Network Controller



WEB-8000 Controllers



- ✓ WEBsControllers
- ✓ ThePlatform isatethehardware hosting theNiagaraProcess.
- ✓ TypicallyanEmbeddedPCcalledaJACE.

- Powerful "WEBs-N4" Hardware platform with easy software upgrade capability
- Modular hardware design for fast and easy installation
- Tool-less installation
- Expandable with up to four option module
- Native Wi-Fi capability
- 24VAC/DC - standard global power supply
- Standard open drivers included
- Easy to select the right capacity license
- intuitive user interface

WEB-8000 : HIGHPERFORMANCECORE

Hardware Specifications:

- TIAM3352 @1GHz
- 1GB RAM
- 4GB Flash Total Storage/2GB User Storage
- Wi-Fi(Client or WAP)
- USB Flash Drive
- High Speed Field Bus Expansion
- (2)Isolated RS485
- (2)10/100MB Ethernet Ports
- -20-60C°Ambient Operating Temp

Agency Certifications:

- UL 916
- CE 61326
- FCC Part15 Subpart B,Class B
- FCC Part15 Subpart C
- C-Tick
- C-UL



Accessories:

- NPB-8000-2X-485 – Dual RS485 Expansion(2)
- NPB-8000-LON-LON FTT10A Expansion(4)
- NPB-8000-232-RS232 Expansion(4)
- IO-16-485 –RS485 16point IO module(16)

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Programmable Enhanced Unitary Controller

PEC Series

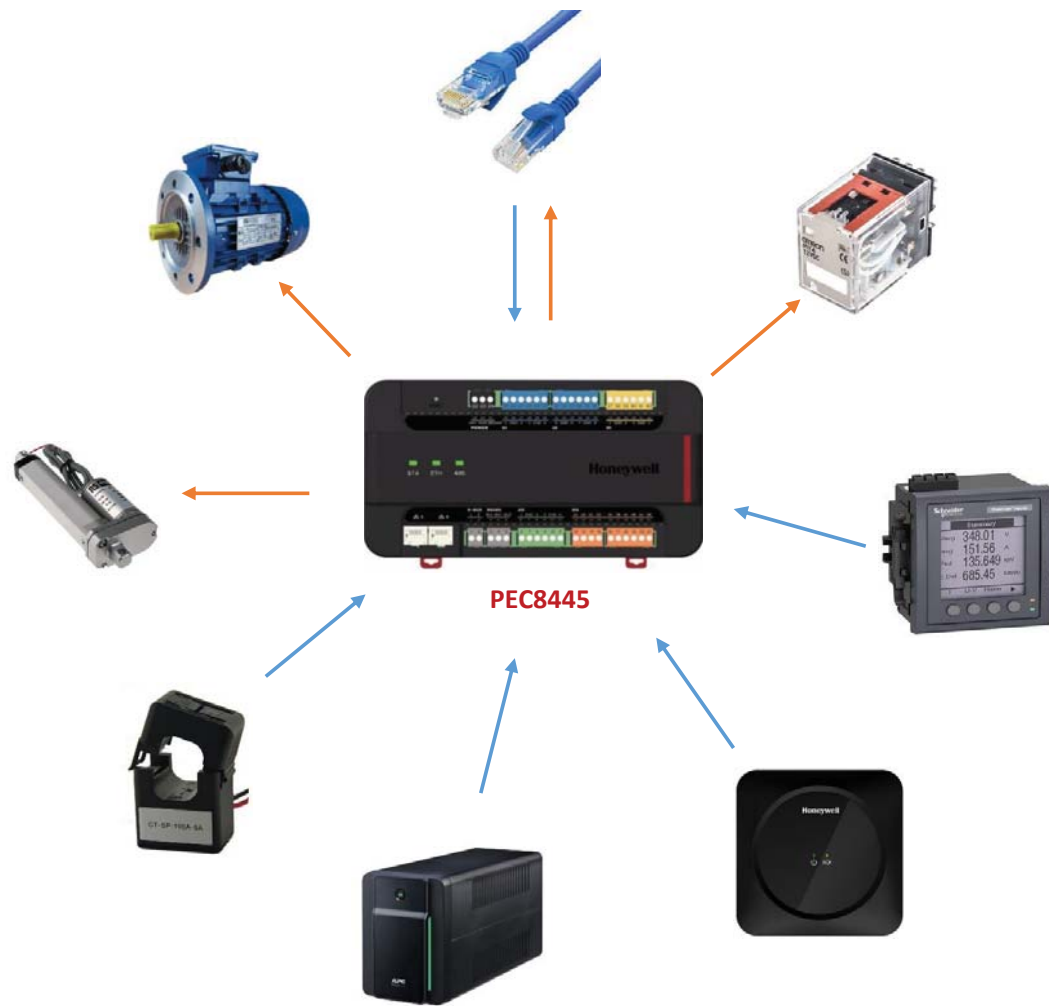
Overview

As a programmable unitary controller, PEC8445 is a BACnet advanced application controller that receives the BTL (B-AAC) certification and supports the BACnet IP communication protocol. PEC hosts automation features such as schedule, alarm.



PEC8445

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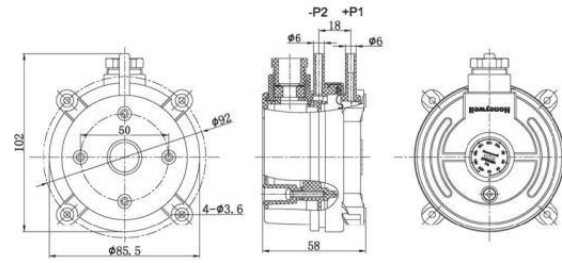


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SENSORS

0-10V,4-20mA,Thermistor

- Temp Sensor (Air , Water)
- Humidity sensor
- Differential pressure transmitter(Air , Water)
- Differential pressure Switch
- CO2 sensor
- CO sensor

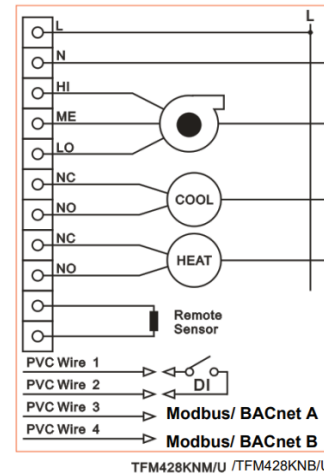


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BUS Device

BACnet, MS/TP, Modbus RTU, etc.

- Thermostats
- Variable speed drive (VSD)
- Power meter
- Digital meter
- Sensors

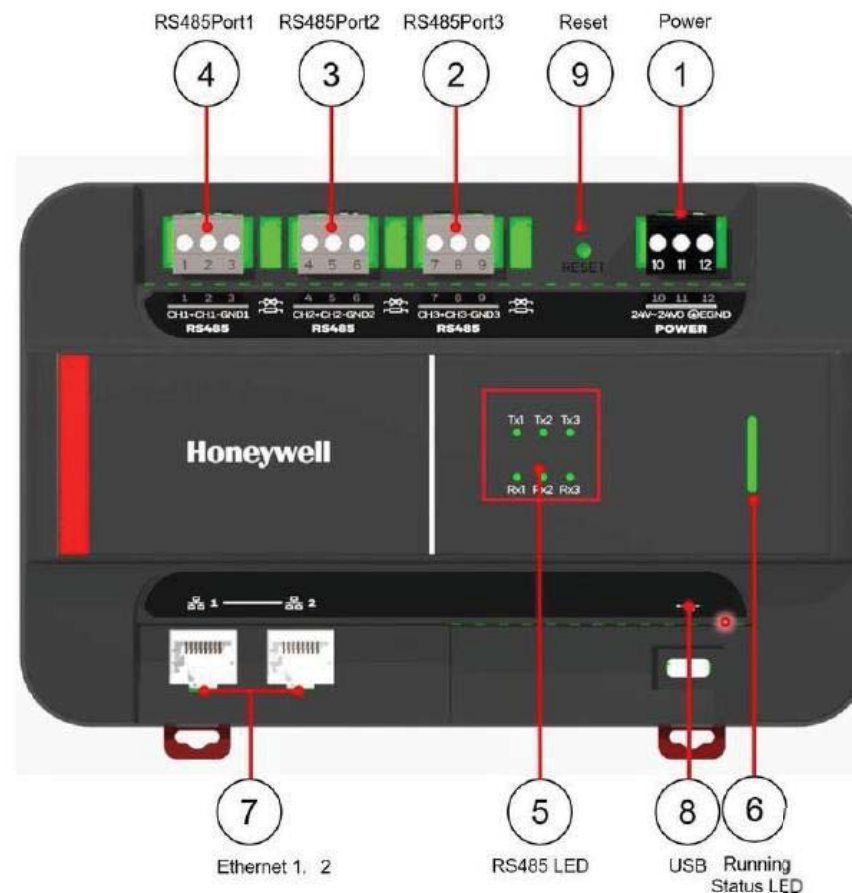


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NEW HONEYWELL GATEWAY CONVERT RS485 TO IP

FEATURES-BEATS100

- **High performance** : Dual-core processor : Arm Cortex-A9
Main frequency : 800MHz ; Arm Cortex-M4 Main frequency : 227MHz
- **Storage** : RAM : 1GB ; Flash memory 4GB
- **OS** : Linux & Rtos, Thekernel is more efficient and stable, while meeting the requirements of real-time performance
- **BACnet Objective** : RS485 ports supports BACnet MS/TP or Modbus RTU protocol (selected by user)
- **Two Ethernet ports, support** : Ring/Daisy-Chain/Star Topology, help user for saving network resources also reduce the cost of implementation
- **RSTP support** (fast spanning tree protocol). When the network structure changes, can recover the network faster and ensure the real-time data transmission.
- **Certification** : CE,UL,BACnet compliant, BACnet Router device with BBMD function, BTL(B-RTR,B-BBMD)
- **Alaya Tool** to do configuration
- **Honeywell Cyber Security** compliance (ANSI/ISA 62443-4-2), encryption chip embedded, ensure system security

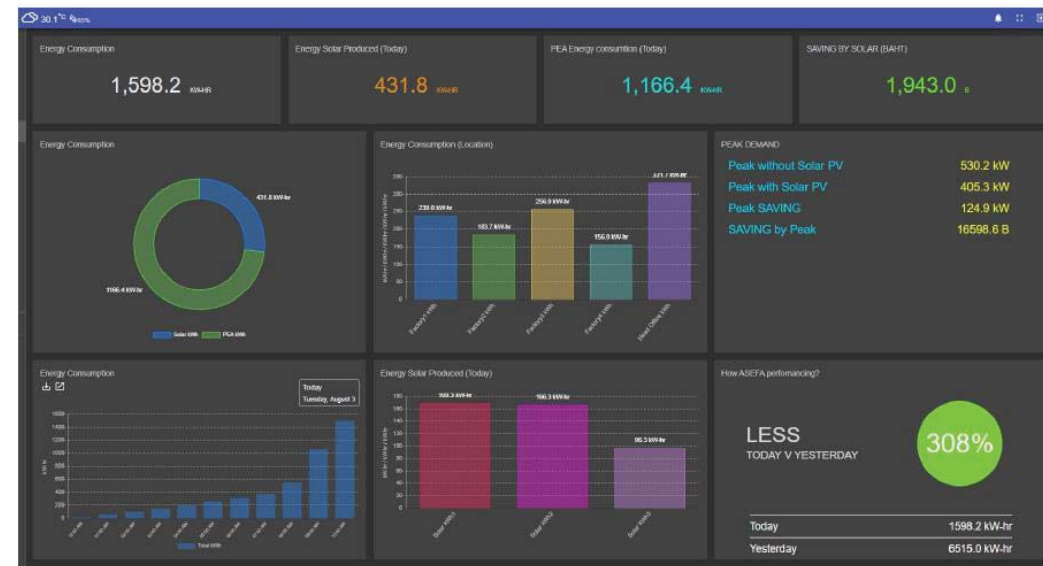


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WEBS-N4

- Centralized system management
- Utilize tags to quickly navigate to buildings, systems and equipment when diagnosing operational problems or emergencies
- Compare data between buildings
- Export system data to external databases
- Integrate with other applications, such as work order management, analytics, etc.
- Single tool used to program JACE, Niagara Edge controller and supervisor
- Remotely back up JACE and Edge applications to Supervisor
- Batch provisioning of JACE and Edge firmware upgrades, security credentials, applications and commissioning options from Supervisor
- Robust built-in analytics capabilities supported by standard Niagara components and visualizations
- Includes Niagara Analytics, which features data source, functional and mathematical programming blocks that enable sophisticated analytic algorithms
- Compatibility with Niagara Enterprise Security access control and security application, Allos integration of BAS and access control to save energy and optimize operations
- Eligible for accreditation under the Federal Risk Management Framework (RMF)
- FIPS 140-2 Level 1 conformance available



Other building information can be viewed in the same application

Simple Dashboard sand Charts

End user web interface is JAVA free – removing security and browser compatibility issues

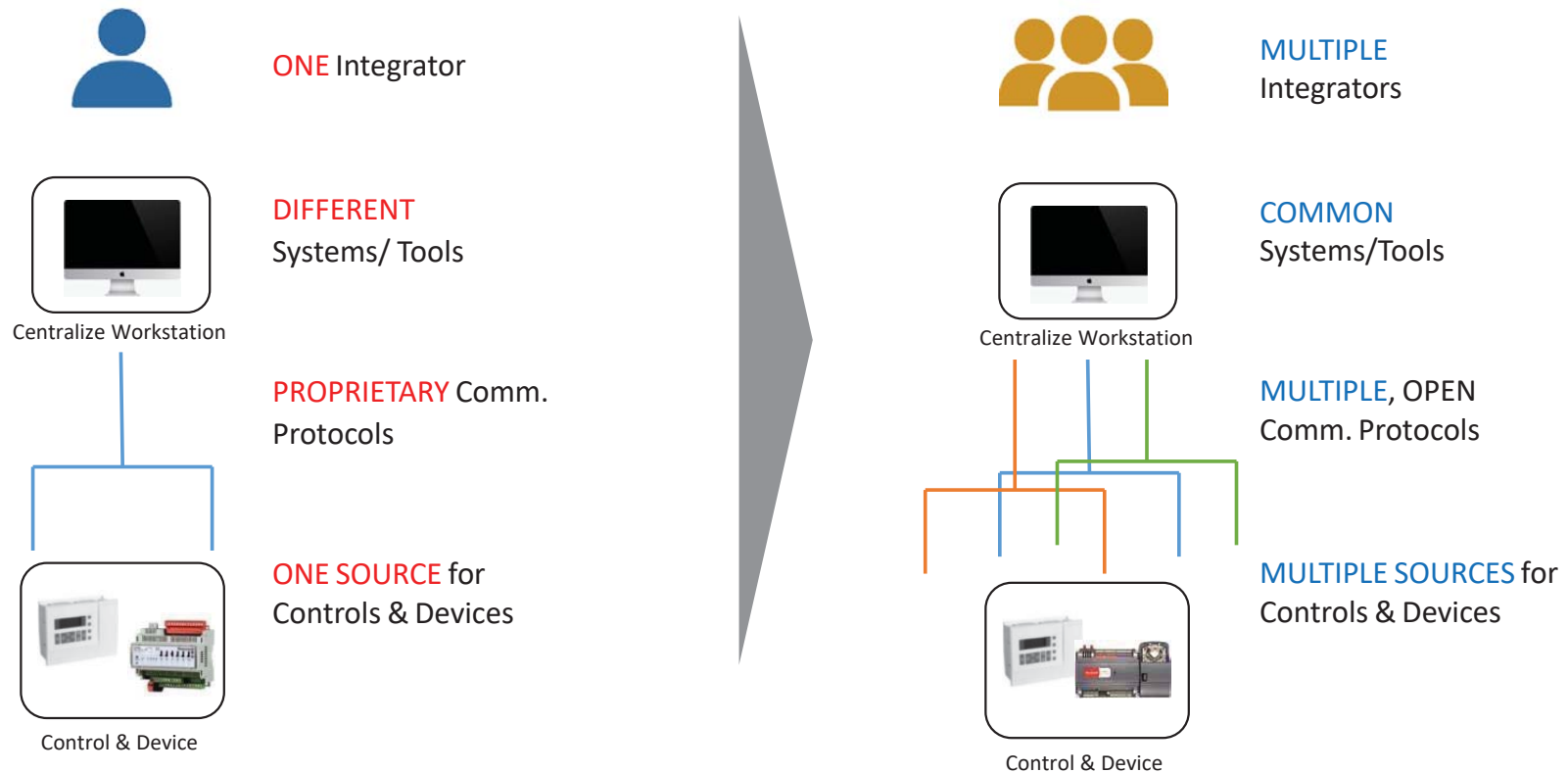
User authentication can integrate With on-site LDAP systems

BUILDING OWNER/USER



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TRADITIONAL VS OPEN SYSTEMS



HAVING A CHOICE IS GOOD

Honeywell

NIAGARA

- **Common Platform for Multiple Vendors**
Connect to JCI, Distech, Siemens, TAC And over and many others.
- **Protocol of choice**
LON, BACnet, Modbus, OPC, N2, C-bus, CCN, many others.
- **System Integrator of choice**
Honeywell System Integrator network is available across India.
- **Common Platform for Multiple Systems**
HVAC, Energy, Security, Laboratory, Lighting, Electrical Monitoring.
- **Engineering Tool available**
All aspects of configuring system and controllers remain on the site.



Honeywell

Open Standards are an Expectation of Owners Today

PRODUCT OVERVIEW

Customer navigation and interaction control

Custom is able navigation hierarchy

Navigation tree can be enabled or disabled based on user

User level based on access rights.

Reporting

Ability to build reports by extracting data from the database and present in CSV and PDF format or export to enterprise SQL or Oracle systems

Dashboards

Capability to build dashboards via standard embedded graphical engineering tool

