



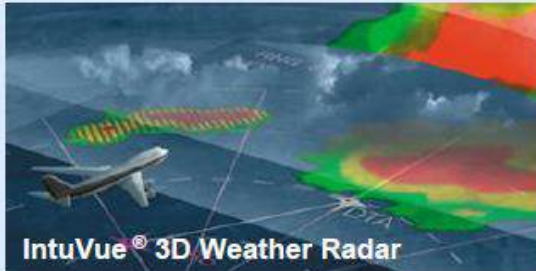
Honeywell

Honeywell Overview

NYSE: **HON** | ~1,300 sites | ~131,000 employees | **Morris Plains, N.J.** headquarters | **Fortune 100**

Aerospace

\$14.8B
Sales



Unmatched Scope of Offerings

- Mechanical, Cockpit, and Software Offerings From Nose to Tail
- Apps, Services, Maintenance, Subscriptions
- End-to-End Connectivity Solutions From Hardware to Airtime
- Turbochargers for Fuel Efficiency

Home and Building Technologies

\$10.7B
Sales



Connecting Homes and Buildings

- Security and Fire
- Connecting Homes With Lyric™
- Open Software Connecting "Internet Of Things" in Buildings

Performance Materials and Technologies

\$9.3B
Sales



Winning Technology

- Refining and Petrochemical Catalysts
- Gas Processing Modular Offerings
- Solstice® LGWP Materials
- SmartLine Transmitters
- Asset Optimization Software

Safety and Productivity Solutions

\$4.6B
Sales



Connecting Workers

- Wireless, Voice, Mobility, Data Analytic Solutions for Workers
- Warehouse Automation
- Keeping Workers Safe

Reflects 2016 Full Year Results

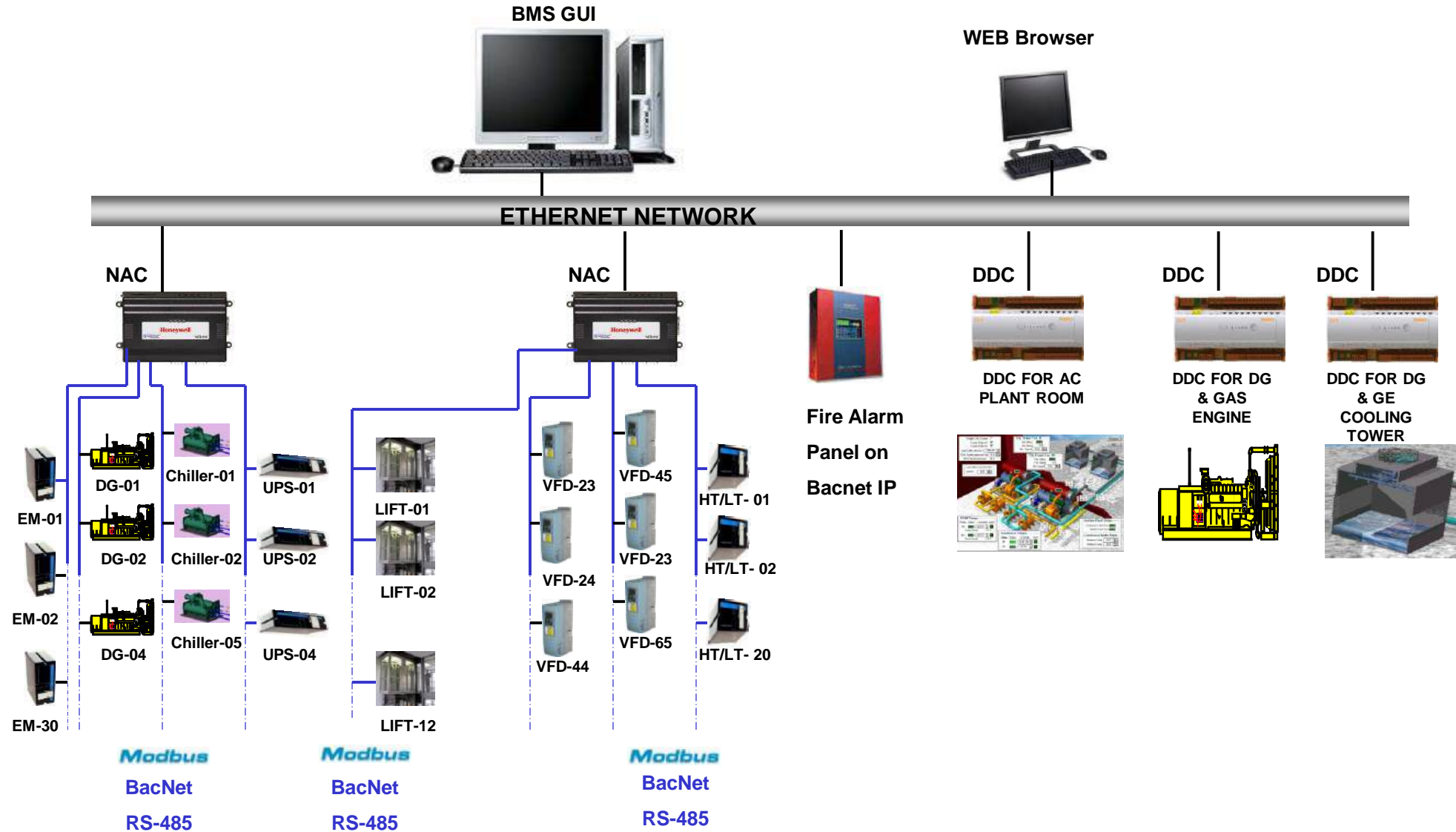
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Aligned to Key Global Macro Trends

Commercial Cooling : BCS

	High End-Market		Mid-Market	Entry-Market						
Verticals	Extreme Users	Optimizers	Basic Users	Minimalists						
		<ul style="list-style-type: none"> •Data Centers •IT/ITES Green Offices •Super Sp. Hospitals •5 Star Hotels •Mega Airport •Tunnel Ventilation •Pharma US FDA 	<ul style="list-style-type: none"> •MNC/ Pvt. Offices •Specialty Hospitals •Manufacturing •Pharma – Bulk drug mfrs, R&D facilities •High-end malls 	<ul style="list-style-type: none"> •Govt. Hospitals •3 Star Hotels •Mid-sized airports in T3-4 cities •Retail – C stores, Cash & Carry 	<ul style="list-style-type: none"> •Basic Pvt., Govt. Offices •Budget hotels •Basic Malls 					
Management Level	  Web Panel	  IRAS	  963 Supervisor	 IQ Vision	  Station	  WEBS Lite Station				
Integration Level	 PCD 3	 NW Server	 IQ4e	 WEBS 8000	 WEBS Lite JACE					
Field Controllers	  Controller	 Thermostat	 Venturi	 IQEco	 VFD	 Spyder	 SIO	 DDC Controller		
Sensors & Actuators	 DPS	 HT/D	 PIL4	 Wall Module	 Pressure Switch	 Syk Wall Module	 Actuator	 MC Thermostat	 Wall Sensor	 Portable Terminal

SYSTEM ARCHITECTURE - IBMS



Why do you need a Honeywell TREND™ BEMS

- To control your energy usage
- To be made aware of issues before they become problems
- To provide your assets with the correct environment
- To ensure building continuity
- To integrate across all building services
- To meet social & corporate responsibility objectives
- To save money

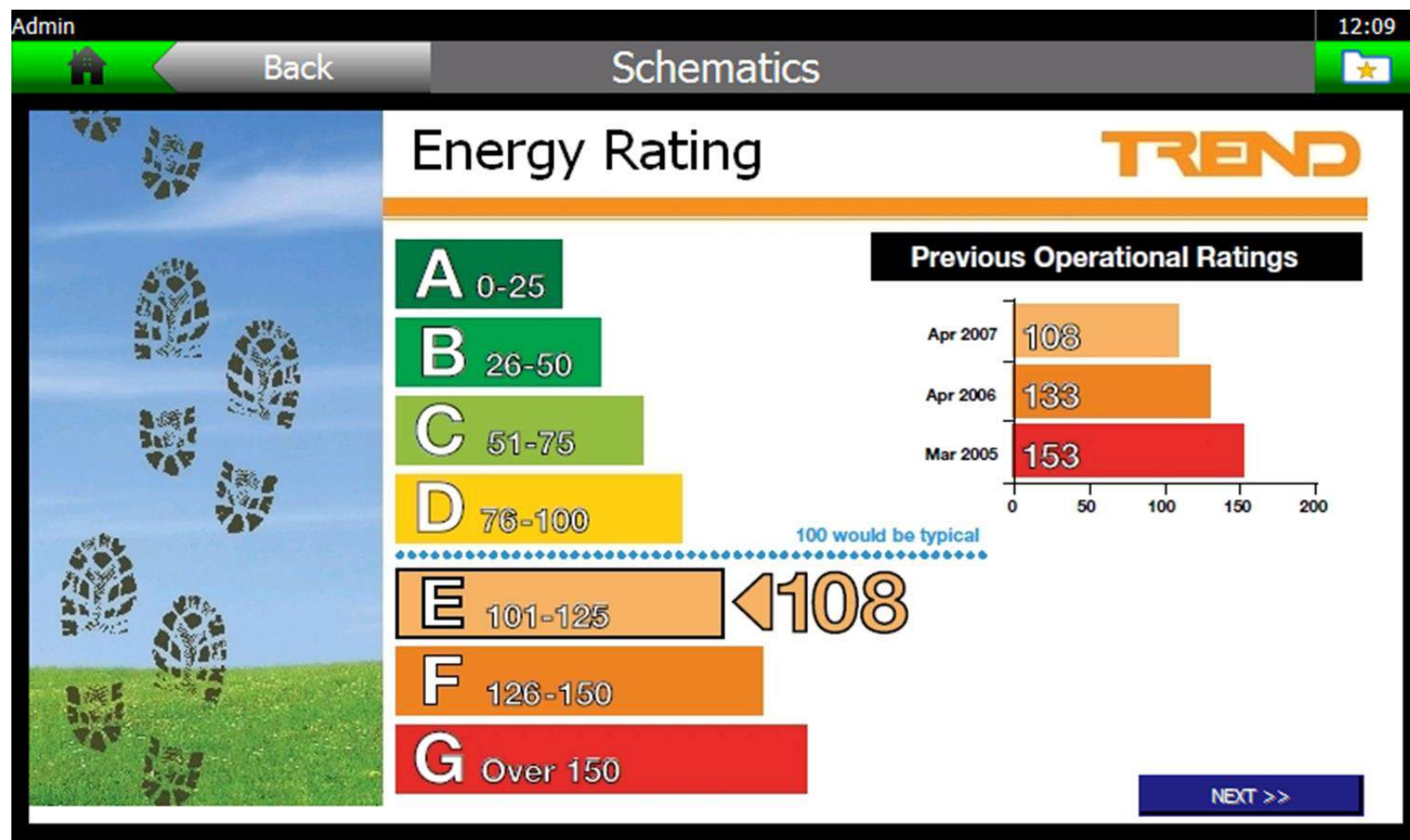
Scope of Honeywell TREND™ BEMS

- HVAC
- VENTILLATION SYSTEMS
- LIGHTING
- DG
- ELECTRICAL SYSTEM
- SEWAGE TREATMENT
- FIRE FIGHTING SYSTEM

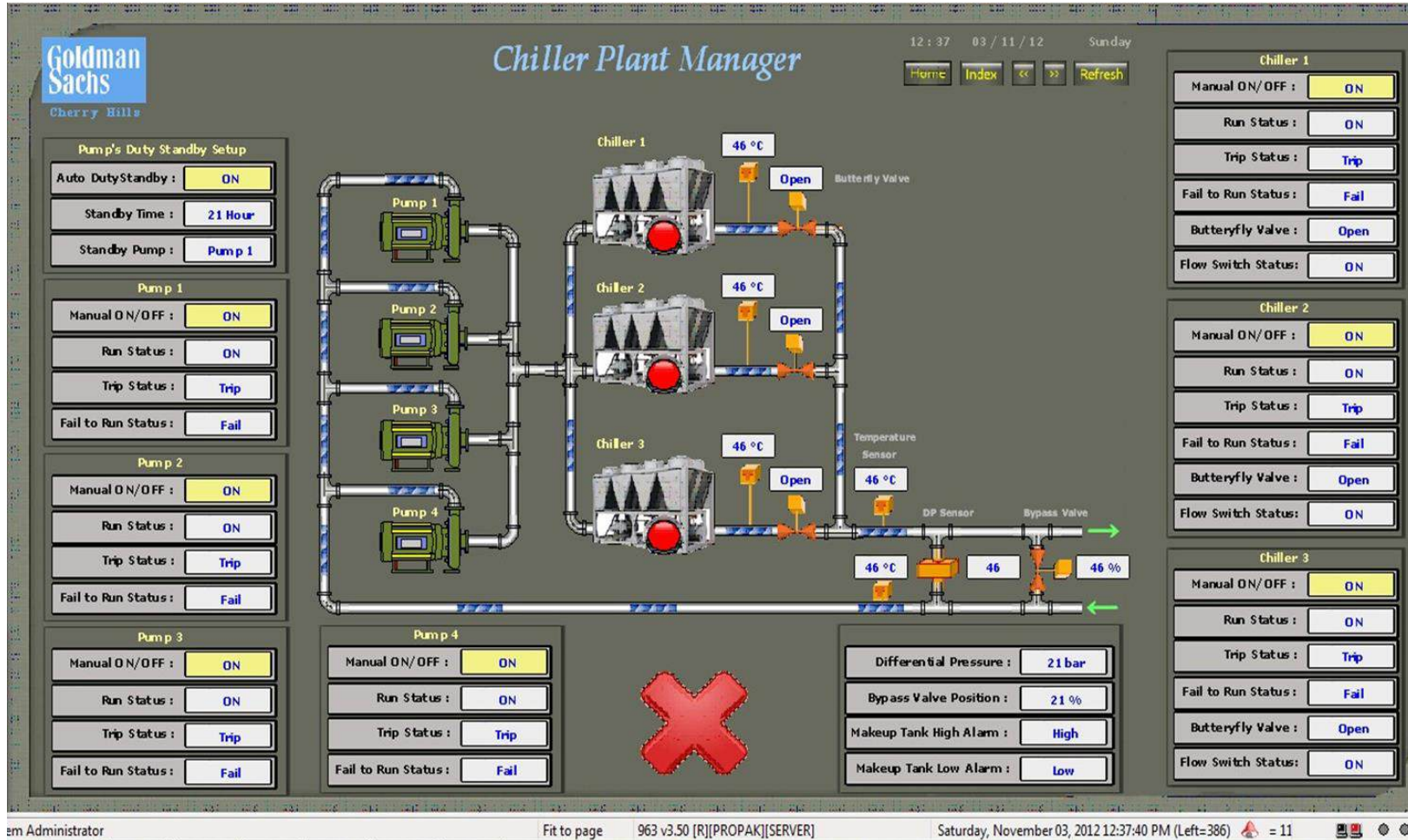
Graphics



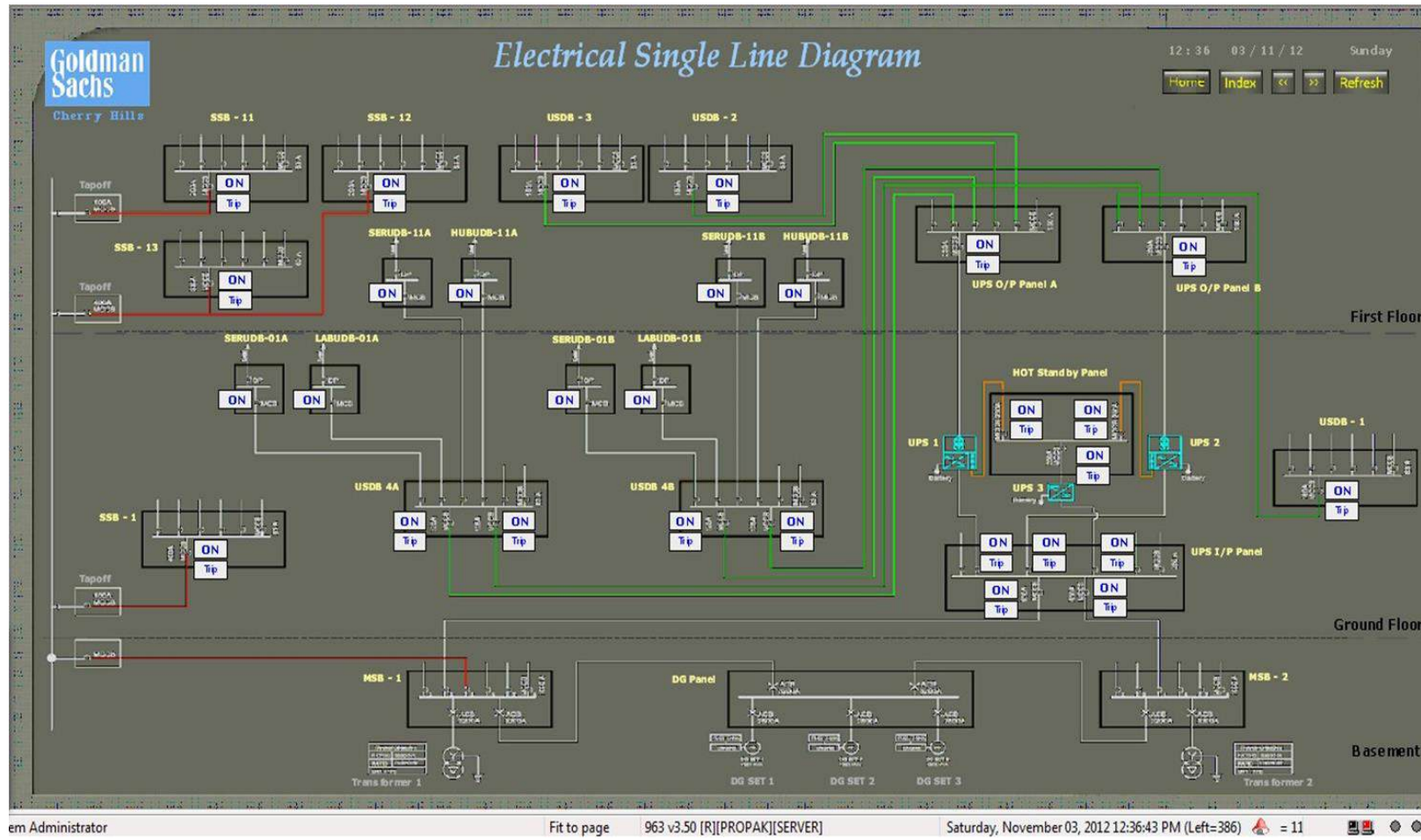
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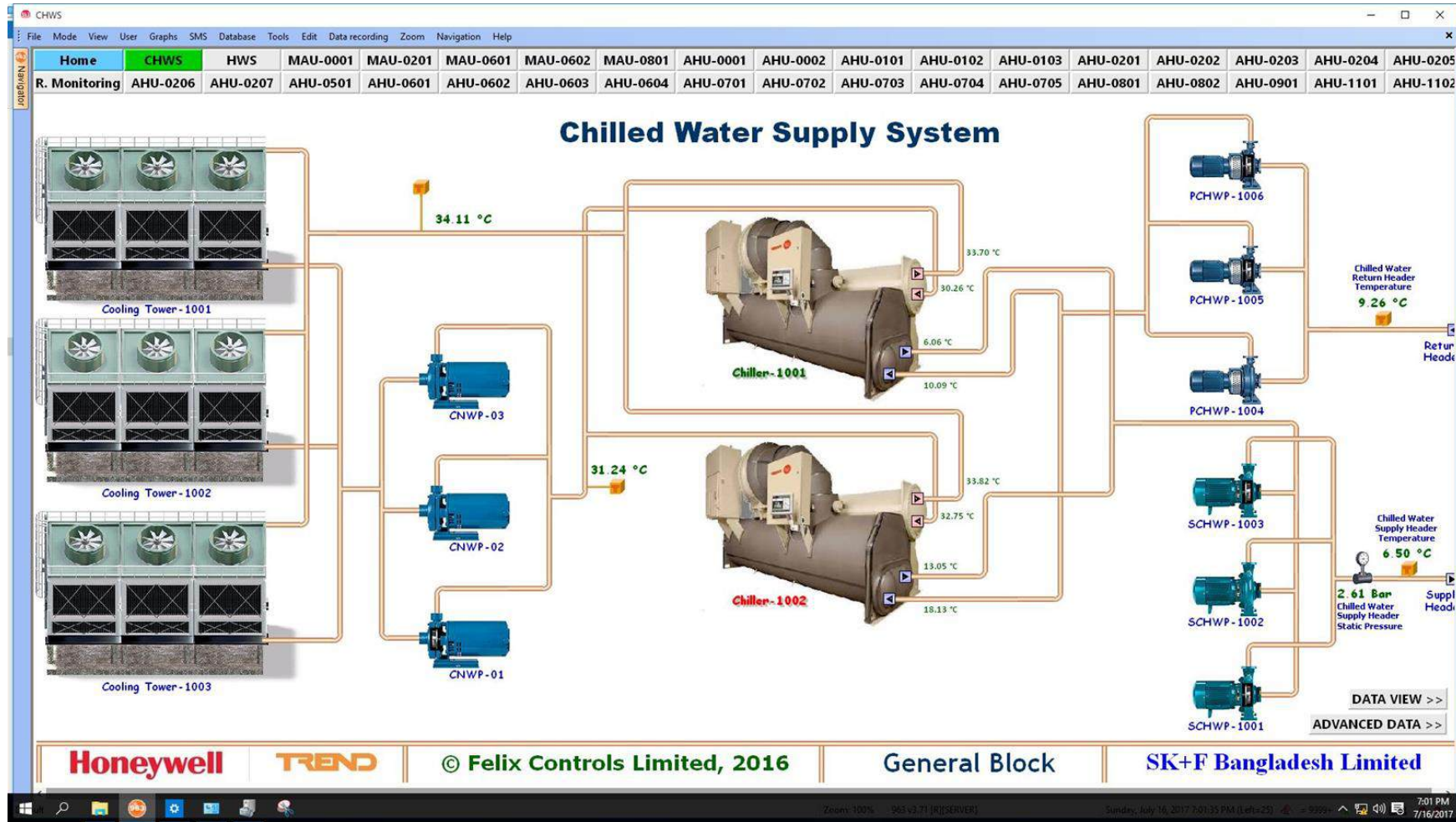
Graphics



Graphics



Graphics



FIELD DEVICES PRODUCT PORTFOLIO

Thermostats



FCU Valves



AHU Valves



Actuators



Commercial Valves



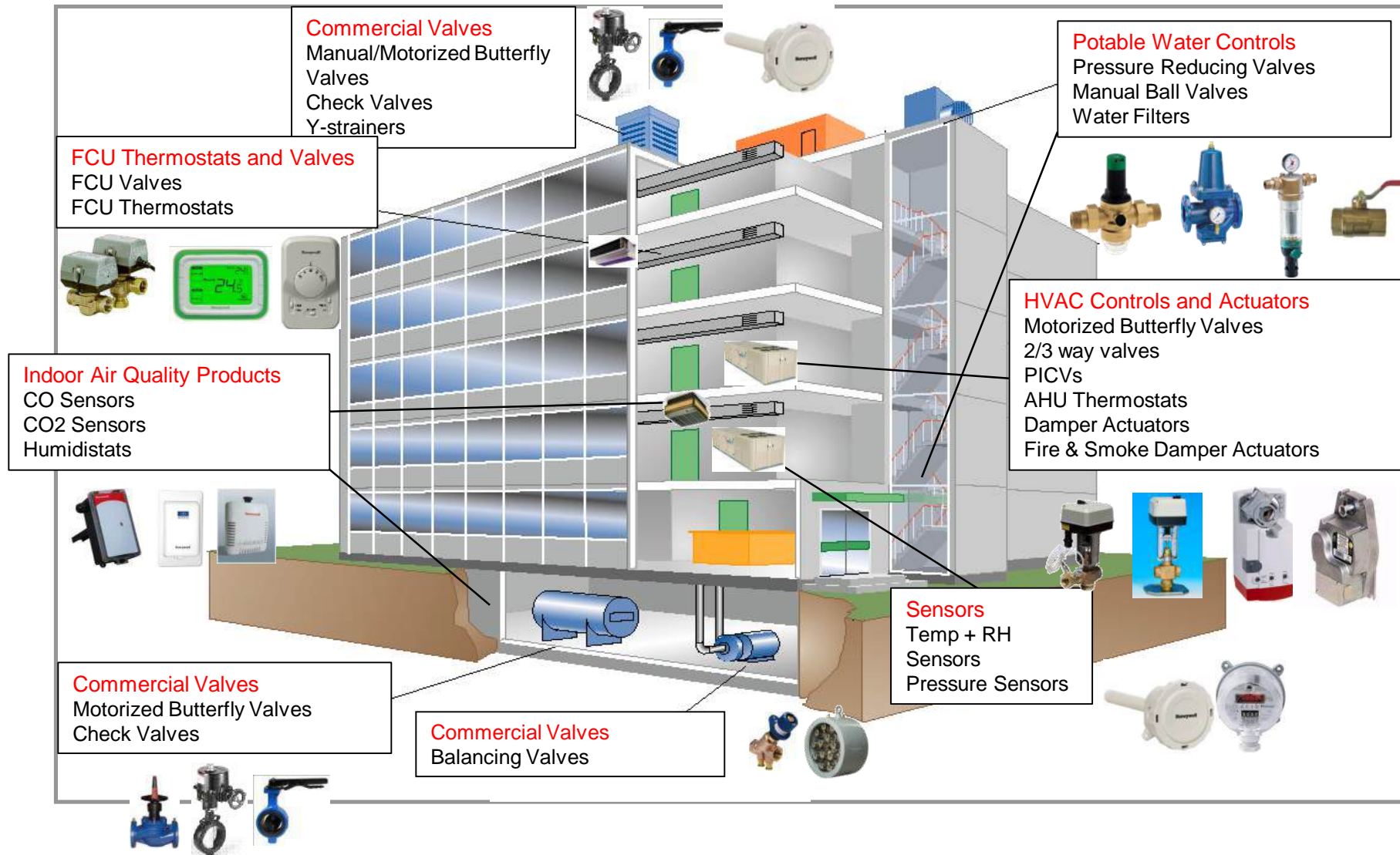
PRVs & Filters



Sensors & Controllers



PRODUCTS IN COMMERCIAL BUILDING



AHU CONTROLS



- Heating
- Cooling
- De- / Humidifying
- Air Quality

ML7420 + V5013



ML7420 + V5329



5/10Nm NSR



N20 / N34 NSR



10/20Nm SR



2/3 WAY AHU GLOBE VALVES



- Control Water, Steam & Glycol solution in Heating or Cooling HVAC applications
- Linear Valves
- Sizes range from 1/2" to 6"
- Stroke 20mm / 38mm depending on sizes
- Suitable for Pneumatic or Electric actuators
- Threaded / Flanged connection

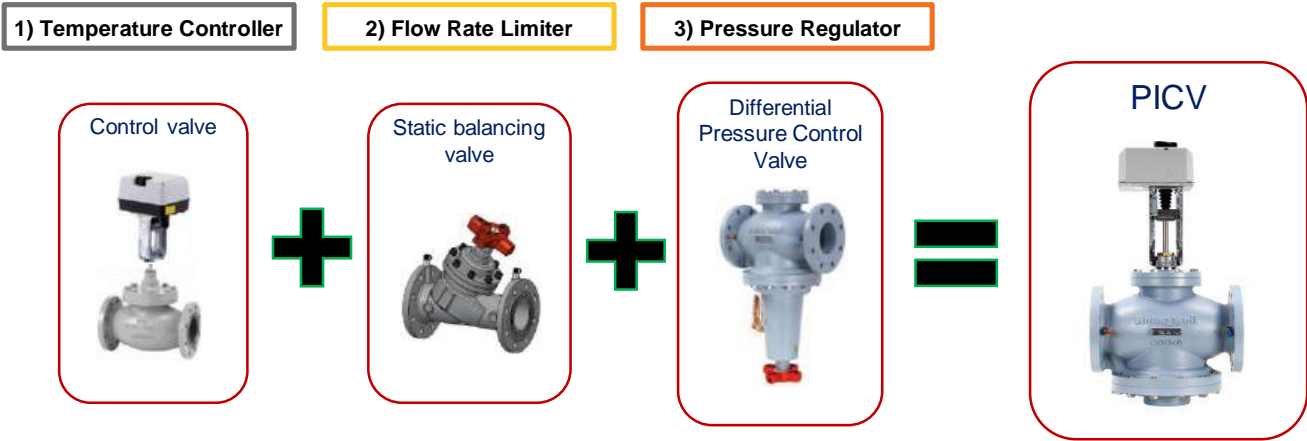
AHU VALVE ACTUATORS



- Directly coupled
- Non-spring return linear valve actuator
- 20 / 38mm stem travel
- Position feedback signal
- Low power consumption
- Manual operator knob

Pressure Independent Control Valve (PICV)

Pressure independent control valves integrate dynamic balancing and control functions into a single product. They respond to changes in pressure in order to maintain the desired flow



KOMBI-9



- Kombi-9 is designed for precise temperature control of terminal air conditioning equipment in the HVAC system
- It can maintain the flow regardless of variations in system differential pressure
- With the valve position feedback the Building Automation System can always operate in the most energy-saving mode

Functions

- Temperature Controller
- Flow Rate Limiter
- Pressure Regulator

Application Verticals

- Shopping malls & office buildings
- Airports
- Hotels
- Education
- Hospitals
- Pharmaceuticals

FCU PRODUCTS

Electric Valves



VC79 Series

VC40/60 Series

Thermostats

O3 Series

• TF428WN / DN

Halo Series

• T6861/ T6862/ T6865

O1

• TF228WN

XE 60 Series

• T6373/T6375



PIBCVs for FCU – Kombi-QB

Kombi-QB VQBO15T.025T
Pressure-independent control valve DN15 to DN25

Scale
Presets can also be read and set with the actuator installed. Secured against unintentional adjustment – sealable

Percentage display
No data sheet necessary for adjustment – simply set the percentage of the maximum flow

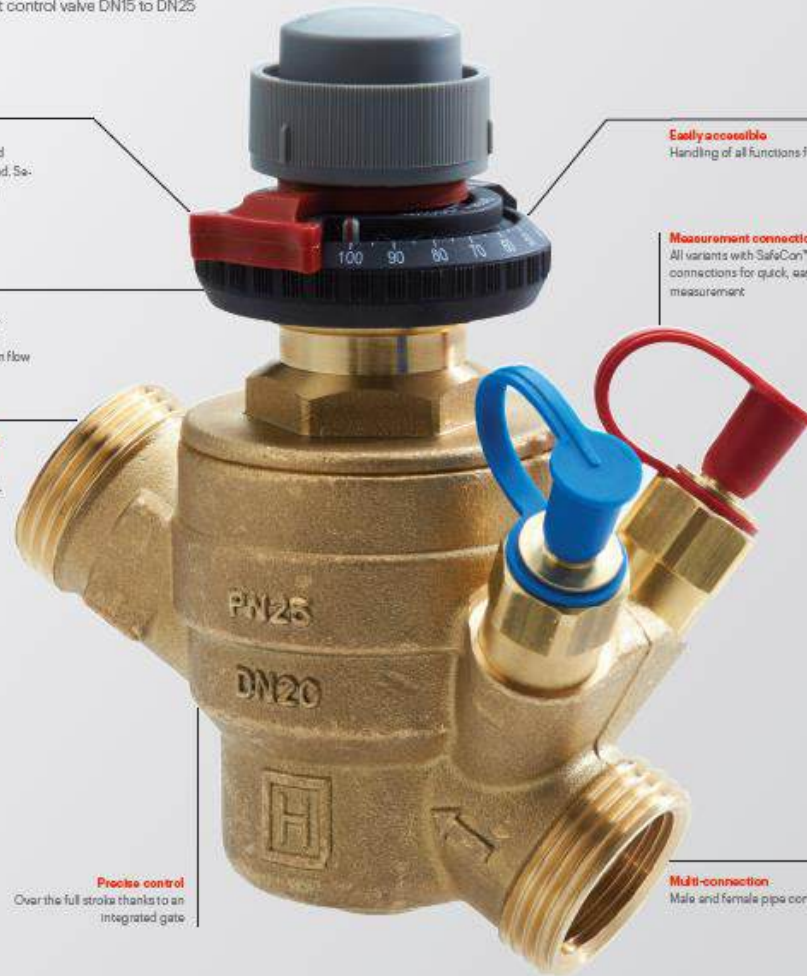
Controlled independently of pressure
The set flow rate is maintained irrespective of fluctuations in pressure

Precise control
Over the full stroke thanks to an integrated gate

Easily accessible
Handling of all functions from one valve side

Measurement connection
All variants with SafeCon™ measurement connections for quick, easy and safe measurement

Multi-connection
Male and female pipe connection are available



Thermo-electric On/Off actuators
Actuators such as the Smart-T are used in room and zone applications for the time-controlled two-point and pulse-width modulated (PWM) control of heating and cooling systems.



Electronic Modulating actuators
Actuators such as the M7410E can be used for Modulating control. Precise positioning of the actuator is achieved by activating the Synchronous motor through a set of gears.



Electronic Floating actuators
Actuators such as the V06983 can be used for three-point control.



Electronic On/Off actuators
Actuators such as the MC2000 can be used for On/Off control. Depending on the model selected they can be controlled by a low or line voltage SPST controller.

THERMOSTATS HISTORY



1885

Albert Butz created the first T-stat



1995

T6373 mass production in Tianjin. The most widely used mechanic thermostat in Asia Pacific



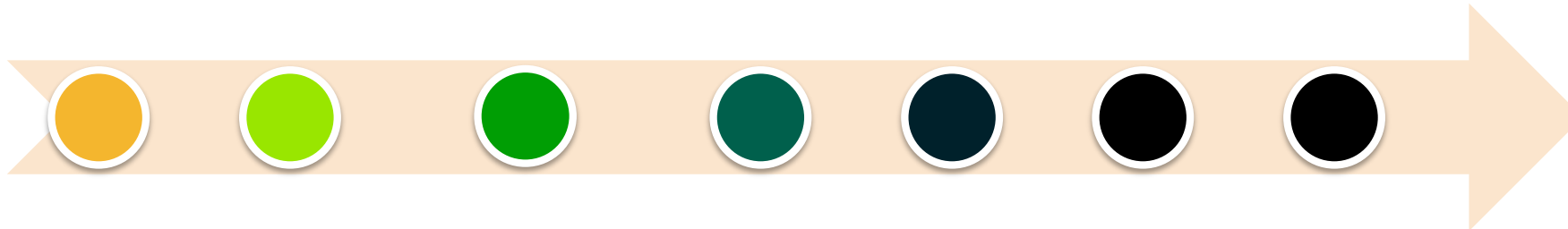
2013

Introduced innovative voice activated thermostat with cloud base



2015

O3 Series
"The color is up to you...the comfort up to Honeywell"



1953

Introduced T-86 "Round" thermostat which is the one of the most famous design



2007

Halo series launched into market, with fashion appearance



2014

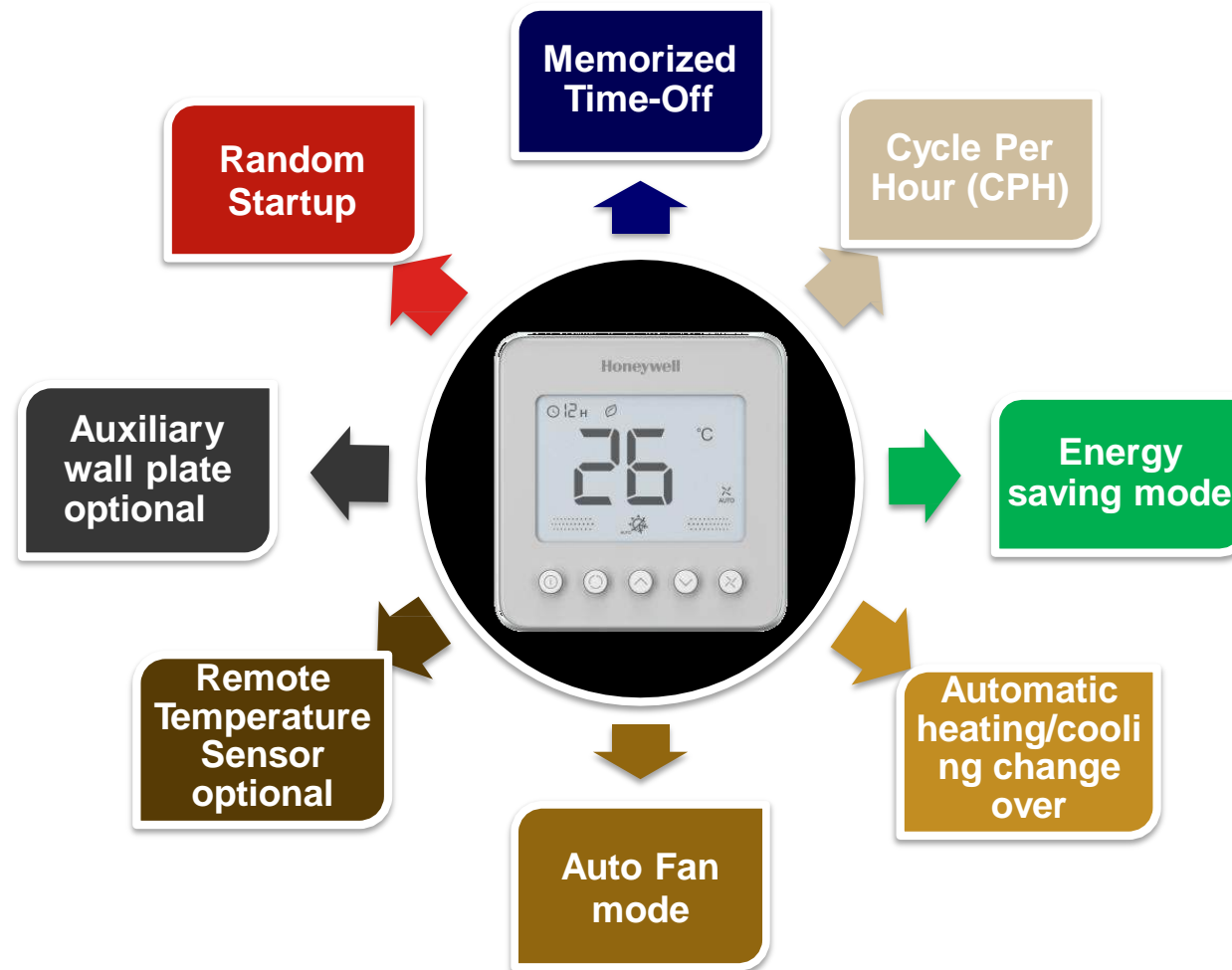
Lyric thermostat brings smart home experience used with Apple HomeKit.



O1 thermostat goes into Mid-segment market



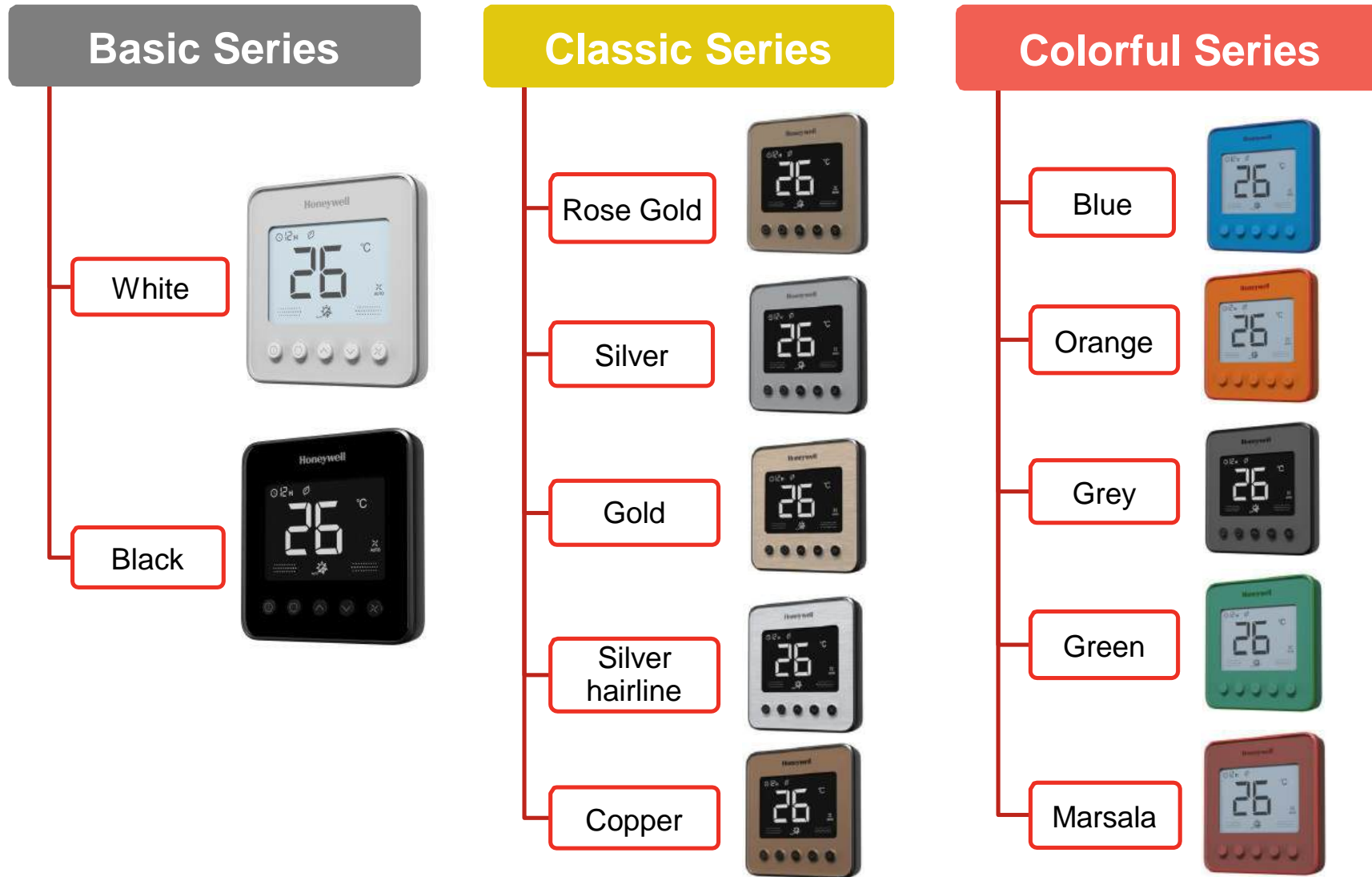
O3 SERIES THERMOSTAT



The comfort is up to Honeywell

Honeywell

O3 SERIES THERMOSTAT



DAMPER ACTUATORS



- Directly coupled
- Controls air dampers, air handlers, VAV units, ventilation flaps & louvers
- Modulating / Floating control available
- Torque rating from 5 Nm to 34 Nm
- Position indicator
- Models available for Fire / Smoke control application

BMS FIELD DEVICES

Temp & Rh sensors



Outside Air Sensor



Room Air Sensor



Duct Sensor

Air Quality Sensors



CO2 Sensor



CO Sensor

Electro-Mech. Sensors



Air Flow Switch



Water Flow Switch



Humidstat

Electronic Sensors



Pressure Transmitter



Diff Pr Transmitter for Air



Diff Pr Switch for Air

COMMERCIAL VALVES PORTFOLIO

Manual Ball Valves



Manual Butterfly Valves



Motorized Butterfly Valves



Check Valves



Pressure Reducing Valves

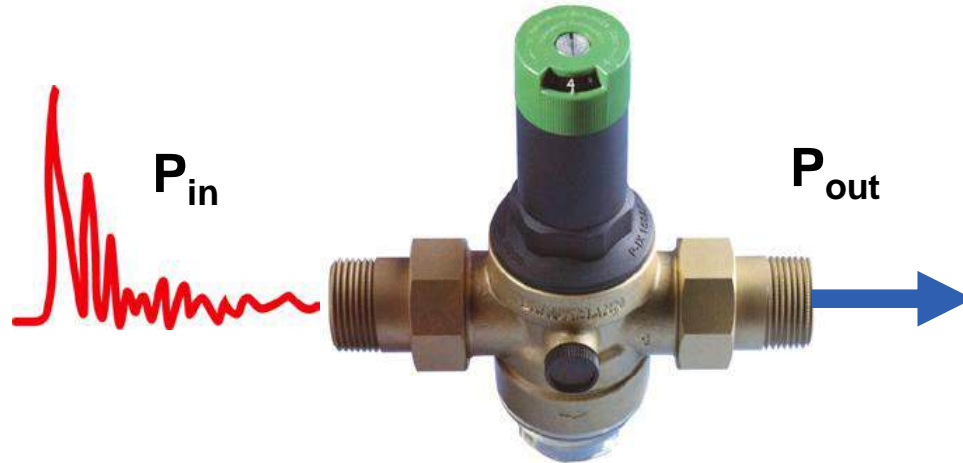


Y-Strainers



PRESSURE REDUCING VALVES

- Protects water installations against excessive pressure from the supply; avoids pressurization damage
- Reduces water consumption
- Prevents noise caused by water flow



D06F PRV FEATURES AND BENEFITS



- Fully balanced seat design; no fluctuating outlet pressure
- Outlet pressure set by turning the adjustment knob
- Set pressure directly indicated on pressure dial
- Cavitation free valve insert
- Integrated fine filter
- Shock resistant clear synthetic filter bowl
- *inService* - Maintenance without removal from the pipework
- Reliable and proven in millions of applications

THANK YOU !!!

Honeywell