

# ATMOS

Building Management System



## About us

Larsen and Toubro is a technology-driven company that infuses engineering with imagination. L&T is a leading manufacturer of low voltage switchgear, with the scale, sophistication and range to meet global benchmarks.

In addition to Switchgear, L&T offers comprehensive solutions for electrical and automation for both commercial and residential applications.

Buildings touch our lives all the time - be it our homes where we live, or our offices where we work, or the malls where we shop, or the hotels we dine, or the hospitals we recuperate. Aesthetics and comfort are therefore, of paramount importance. To serve this L&T has a comprehensive Building Automation Solutions.

L&T offers comprehensive Building Automation Solution that provides centralized remote monitoring and control solution of all building facilities including heat ventilation and air-conditioning, electricity, lighting, plumbing, water supply and drainage, Security, fire and environmental control systems.

We improve efficiencies by utilizing a centralized management system to monitor and control a buildings energy demand and consumption. Seamless monitoring of all these systems ensures occupant comfort, lowers energy use, and allows off-site building control from anywhere in the world. Many of the projects we design provide energy savings which transforms into Green Building Certification.



Switchgear Factory, Navi Mumbai

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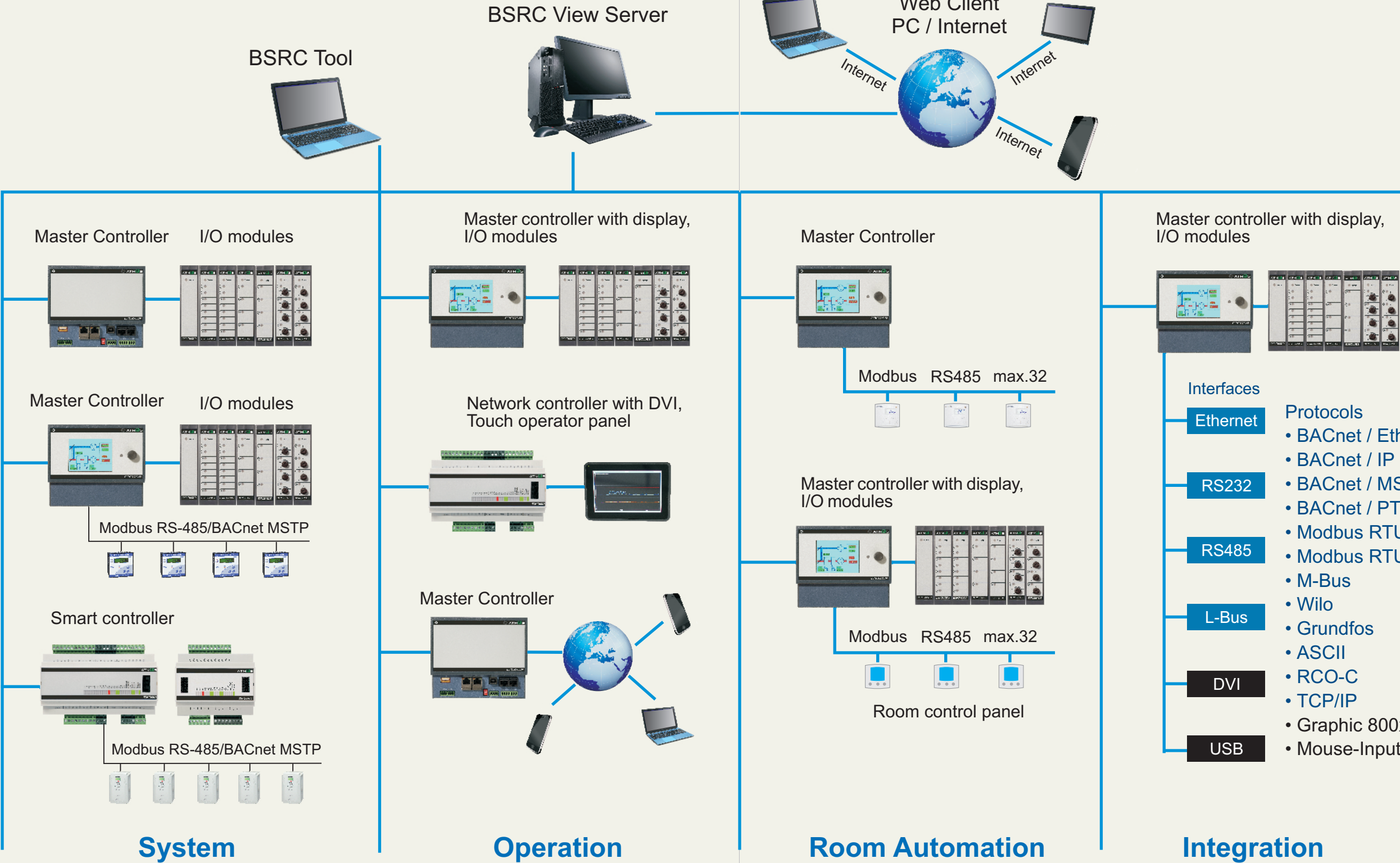


L&T offers you a complete range of building electrical and automation solutions for office space, commercial buildings, data-center, pharmaceutical industry, hospital, hotels & residential requirements with the largest reach in the country. We offer end to end solutions, right from product to installation & commissioning through a network of System Integrators. Down stream of transformer, we address all aspects of the electrical ranging from Powergear, Energy & Power Quality, Final distribution and Building Automation products for buildings with expert assistance in product selection and specification. Each product in our range carries the L&T insignia of reliability & assurance and is backed by prompt after-sales service through a wide network of service centres across the country. Therefore an ideal choice for Electricals and Automation for your Buildings.

ATMOS Building Management System

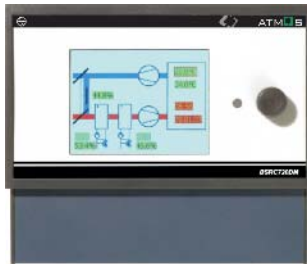
ATMOS - powered by LTAB™ (L&T's Architecture for Building Automation) is a state of the art building management system that reliably controls installations of all categories and complexities. It is a microprocessor based control system which measures, co-ordinates, evaluates and monitors thousands of digital and analog input / output signals in the building.

Architecture of L&T Atmos

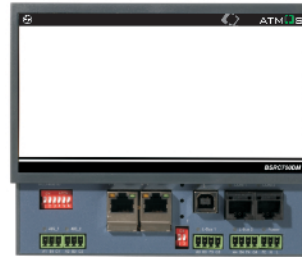


## Master controller

Cat. No. BSRC920DM / BSRC900DM



BSRC920 DM/DW



BSRC900 DM/DW

- The ATMOS BSRC9XX is a series of freely programmable Master controllers which ensure monitoring and control of a variety of systems and functions at an optimal level of efficiency. Progressive energy management strategies can be custom-tailored to the needs of the customer
- The Modular concept provides a highly flexible and scalable system which can take upto 200 datapoints on one controller

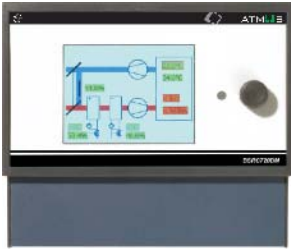
**As a native BACnet Controller the Master Controller supports on demand the BACnet protocol according to the BACnet Standard ISO 16484-5:2010.**

### Highlights :

- 32 Bit-Micro processor with real time operating System
- Approved to European EMC standards CENELEC EN 50 082-1 and EN 55011
- High storage capacity for program and data storage on SD-Memory Card
- BA Efficiency Class-A according to EN 15232 possible
- Multi master network by peer to peer communication
- Plug and play I/O Modules for least downtime
- Future proofed: BACnet Building Controller ANSI/ASHRAE Standard 135-2001 (ISO 16484-5)
- Optional Integrated Web server for the direct visualization and operation via a standard web browser
- Variety of integration and communication abilities through integrated protocols (BACnet, Modbus, M-Bus, Wilo, Grundfos, etc.)
- Reduction of necessary panel space through extreme compact design



## Cat. No. BSRC920 DM / BSRC900 DM

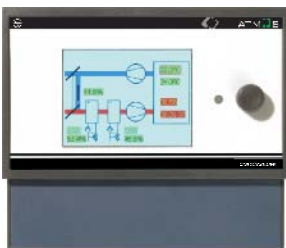


**Mater controller with integrated colour graphical display of 3.5", 320\*240 Pixel resolution, Navigation Via Knob (turn and push)**

### Highlights :

- Indication of online and historical data as graphical trend-logs via the display / POT incase of without display series
- 2 x RS232 Interface: Used for the connection to BMS BSRC-view, pc, analogue/gsm-messenger, modem and printer as well as for the connection of the already implemented protocols
- 2 x Rs485 Interface: For the connection of the already implemented protocols
- 2 x Ethernet Interfaces (In/Out with integrated Hub-Functionality) for the peer-to-peer communication based on Ethernetfor the connection to the network
- 1 x L-Bus2-connection with selectable speed (default: 100Kbps) for the connection of up to 32 I/O-Modules
- The already implemented protocols like M-Bus and BACnet can be combined with the integrated Interfaces (Ethernet/RS232)
- E-mailing direct from the Controller for alarms or data transfer
- Standardised algorithms for PID regulation
- Integrated alarm and modern handling
- Protection according to EN60529 IP 20

## Cat. No. BSRC920DW / BSRC900DW



Identical to BSRC920DM/BSRC900DM, but-with an integrated Web server for the visualization and operation of plant data and alarms viaIntranet or Internet with a standard web browser. The HTML pages are designed comfortably and efficiently with the BSRC-Tool.



## Smart Network controllers

Cat. No. BSRC8XX series



- The ATMOS 8XX series has freely programmable controllers with integrated inputs and outputs. These can be networked through ethernet, enabling peer to peer communication

**As native BACnet Controllers the Network Controller supports on demand the BACnet protocol according to the BACnet Building Controller Standard ISO 16484-5:2010**

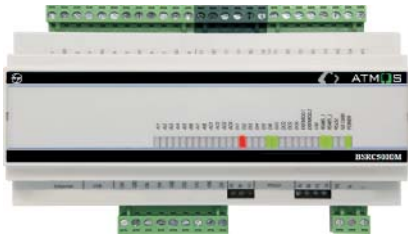
### Highlights :

- 32 Bit-Micro processor with real time operation System
- Reduction of necessary panel space through extreme compact design
- 8 universal and 6 digital inputs, 4 analogue and 4 digital outputs
- Expandable through I/O-Expander Module
- High storage capacity for program and data storage on SD-Memory Card
- Optional Integrated Web server for the direct visualization and operation via a standard web browser
- Best Suited for distributed AHU applications
- BA Efficiency Class-A according En15232 possible
- Approved to European EMC standards CENELEC EN 50 082-1 and EN 55011
- Future proofed: BACnet Building Controller ANSI/ASHRAE Standard 135-2001 (ISO 16484-5)
- Variety of integration and communication abilities through integrated protocols (BACnet, Modbus, M-Bus, Wilo, Grundfos, etc.)
- Standardised algorithms for PID regulation





## Cat. No. BSRC800DM

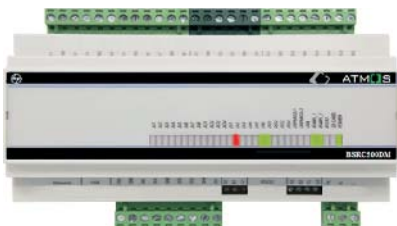


### Smart Network controller with integrated I/o's for compact design

#### Highlights :

- 8 universal inputs, 6 digital inputs, 4 analogue outputs, 4 digital outputs
- 1 slot for 2 GB SD-Memory Card as internal and external data and program memory
- 1 x RS232 Interface: Used for the connection to BMS pc, analogue/gsm-messenger, modem and printer as well as for the connection of the already implemented protocols
- 1 x RS485 Interface: For the connection of the already implemented protocols as well as for the communication to the network
- 1 x RS485 Interface: For the connection of the text oriented operator panel BSRC630DS
- 1 x Ethernet interface for the peer-to-peer communication based on Ethernet for the connection of Network-Controllers within the RCO-D Network and the connection to the BMS Software
- 1 x Expander interface (max. 2 Expansion modules can be connected)
- E-mailing (alarms, historical data) direct from the controller
- Integrated alarm and modem handling
- Protection according to EN60529 IP 20

## Cat. No. BSRC800DW



Identical to BSRC800DM with an integrated webserver for the visualization and operation of data-points and alarms via internet and intranet with a standard web browser





Cat. No. BSRC816DE



## Expander Module for BSRC8XX series of controllers

The expanders can be used to extend the I/O capability of the BSRC8XX series of controllers. Controller and expander are equipped with a pin connector for direct connection. Upto 2 expander modules can be connected to one 8XX controller.

### Highlights :

- 8 universal input
- 4 Analogue output
- 4 Digital output
- DIN-rail mounting
- I/O expansion per quick connector
- Pluggable terminals
- Two colour, programmable LED per input and output
- Operating voltage supplied by network controller
- IP 20, ABS-housing

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Cat. No. BSRC640DS / BSRC630DS / BSRC621DS

## Operator panel for 9XX and 8XX series

### Highlights :

- Access to all controllers in the network through one operator terminal
- Password protection
- Background light
- Alarm indication
- Simple handling
- Pluggable terminals
- Small dimensions
- CE Approval
- Approved to European EMC standards CENELEC EN50 082-1 and EN 55 011
- Cat. No. -BSRC640DS : Operator panel for 9XX series controllers
- BSRC630DS : Operator panel for 8XX series controllers
- BSRC621DS : Operator panel for 9XX & 8XX series controllers



The Input/Output Modules series can be operated in combination with a D-series Master Controller and is suitable for operation in the BSRC network. Up to 32 I/O modules can be connected to one Master Controller via the L-bus. The control, optimizing and monitoring functions are programmed within the Master Controller. The series adheres to European EMC standards CENELEC EN50 082-1 and EN 55 011 CE approval

## Cat.No. BSRC110DS



### Universal Input Module

The slave module BSRC110DS measures digital and different analog values of the technical plant.

#### Features

- 8 universal input
- Plug-in terminals
- For DIN-rail or panel door mounting

## Cat.No. BSRC120DS



### Digital Input Module

The slave module BSRC120DS measures digital as well as counting values of the technical plant.

#### Features

- 8 digital inputs
- Plug-in terminals
- For DIN-rail or panel door mounting

## Cat.No. BSRC210DS



### Analog Output Module (without manual override)

The slave Module BSRC 210 D-S supplies analog output signals (0 - 10 V DC) to the technical plant.

#### Features

- 4 Analog outputs
- Plug-in terminals
- For DIN-rail or panel door mounting



## Cat. No. BSRC211DS



### **Analog Output Module (with manual override ability)**

The slave Module BSRC 211 D-S supplies analog output signals (0 - 10 V DC) to the technical plant.

#### **Features**

- 4 Analog outputs with manual override ability
- Plug-in terminals
- For DIN-rail or panel Door Mounting

## Cat. No. BSRC220DS



### **Digital Output Module (without manual override)**

The slave module BSRC220DS provides digital output signals (230 V, 4 A) to the technical plant.

#### **Features**

- 4 digital outputs
- Plug-in terminals
- For DIN-rail or panel door mounting

## Cat. No. BSRC221DS



### **Digital Output Module (with manual override ability)**

The slave module BSRC221DS provides digital output signals (230 V, 4 A) to the technical plant.

#### **Features**

- 4 digital outputs with manual override ability
- Plug-in terminals
- For DIN-rail or panel door mounting





## Cat. No. BSRC300DP



### Power-Module

BSRC300DP is a Power Module. The module ensures the power supply of up to 32 I/O modules.

### Features

- Plug-in terminals
- For DIN-rail or panel door mounting

## Cat. No. BSRC302DP



### Power-Bridge-Module

BSRC302DP is a Power Bridge Module. The module ensures the power supply of up to 32 I/O modules. The L-bus supply is galvanically separated.

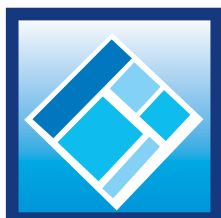
### Features

- Galvanically separated L-bus
- Plug-in terminals
- For DIN-rail or panel mounting

## Software for Building Management System : ATMOS BSRCVIEW

### Building Management software for Visualization, Monitoring and control of the building management system

#### Highlights:



- The client server architecture provides the simultaneous access for different users (multi-user) to an installation
- Intuitive, freely configurable graphic user interface for the operation and monitoring of technical installations with the building automation system
- The Web server of the software allows the password-protected user access over Intranet and Internet from any PC in the network, respectively from any PC, notebook or PDA with internet access
- Multi-User capable
- Log-files (Alarms, User scope, value changes, etc.)
- Standard Browser (Firefox, IE) as user interface
- Free configurable user interface



## Temperature Sensor- Duct and Space Type

Air Temperature Sensor for Wall mount, Duct Mount application with PT 1000/NTC series, 2 wire terminals. Probe Length - 50 mm to 450 mm



## Temperature Sensor- Immersion Type

Used for measuring the temperature of water in the pipeline (Immersion Type). Immersion Depth 100 mm & 200 mm, with PT/NTC Series, 2 Wire Terminals



## Humidity Sensor- Duct Type

Monitor Humidity level in percentage inside duct.



## Humidity Sensor - Space Type

The RH series of humidity transducers are designed for use in environmental monitoring and control systems where high performance and stability are demanded.

Humidity range – 0 to 100%



## Temperature and Humidity Sensor- Duct Type

The Temperature & RH Sensors is designed to measure temperature range from - 40 deg C to 60 deg C, RH from 0 to 100%, with wall / duct mount application.



### Temperature & Humidity Sensor- Outside Type

The temperature & Humidity sensor is designed to measure temperature range from -40degree C to 70 Degree C and humidity from 0 to 100% and has IP 65 enclosure.



### Differential Pressure Switch - Air

Differential Pressure Switch contains diaphragm, calibration knob and snap acting SPDT switch with set point indication.

Maximum Operating Pressure – 10KPa



### Absolute Pressure Sensor - Air

The LP2 Low Pressure Transducer can be used to measure positive, negative or differential pressure in the ranges of 200 To 2000Pa. Jumper selectable 2 wire current and 3 wire voltage outputs standard. Output Signal - 4 - 20 mA (2-wire), 0 - 5 Vdc or 0 - 10 Vdc (3-wire) Probe Length - 100 mm to 250 mm

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### Differential Pressure Sensor - Air

The LP2 Low Pressure Transducer can be used to measure positive, negative or differential pressure in the ranges of 200 To 2000Pa. Jumper selectable 2 wire current and 3 wire voltage outputs standard. Output Signal - 4 - 20 mA (2-wire), 0 - 5 VDC or 0 - 10 VDC (3-wire) Probe Length - 100 mm to 250 mm



### Differential Pressure Sensor - Water

The pressure transmitter is designed with dual sensors that enable it to accept high differential pressure ranges. The transmitters can accept ranges from 0 - 10 bar





## Gauge Pressure Transmitter - Water

The pressure transmitter is designed with a single sensors that enable it to accept high pressure ranges.  
The transmitters can accept ranges from 0 - 10 bar



## Carbon Dioxide Sensors - Air

State of the art, Infrared and maintenance-free carbon dioxide transmitter for installation in the climate zone or in the ventilation duct. Measures carbon dioxide concentration in the ambient air up to 2000 ppm and transforms the data into an analogue output.

OUT1 linear conversion range : 0 to 10 VDC for 0 - 2000 ppm.  
OUT2 linear conversion range : 2 to 10 VDC, or 4-20 mA for 0 - 2000 ppm.



## Carbon Monoxide Sensor - Air

Maintenance free carbon monoxide sensor for installation in the climate zone. Measures carbon monoxide concentration in the ambient air up to 300ppm and transforms the data into an analog output of 4 - 20 mA.



## Velocity Sensor - Air

The transducer registers the airflow speed according to a thermal principle based on the fact that the cooling action of air increases with airspeed.

The action is measured and converted to 4 - 20 mA or 0 - 10 V signal corresponding to air flow speeds from 0 - 8 m/s (0 - 1575 ft/min) or 0 - 16 m/s (0 - 3150 ft/min).

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