NotionControl

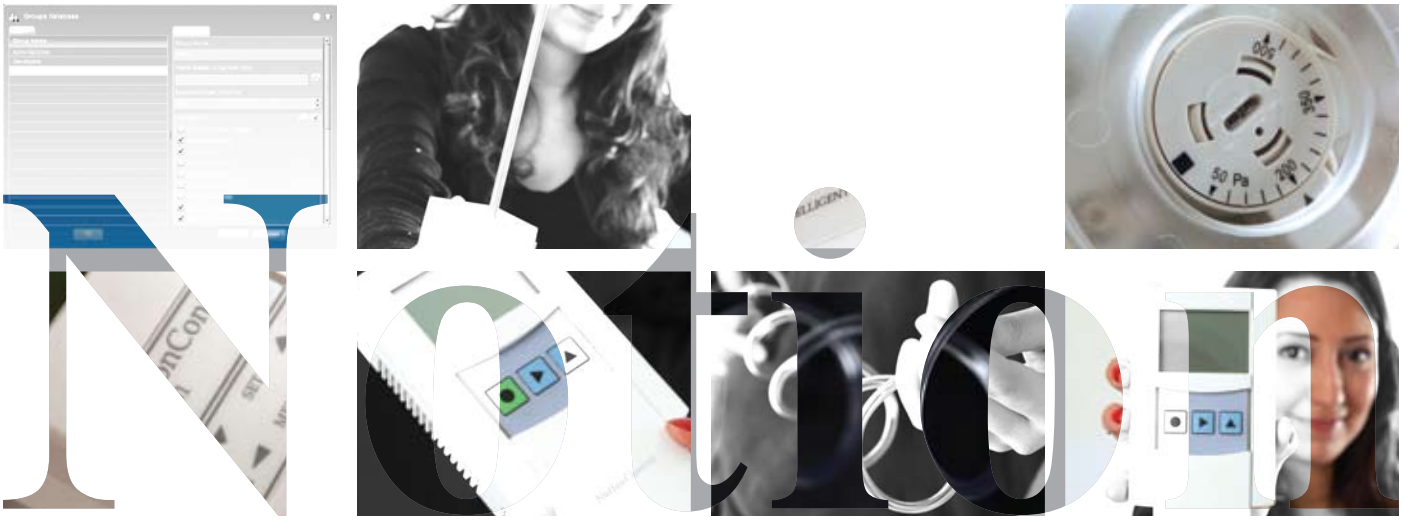
THE INTELLIGENT POINT OF BUILDINGS

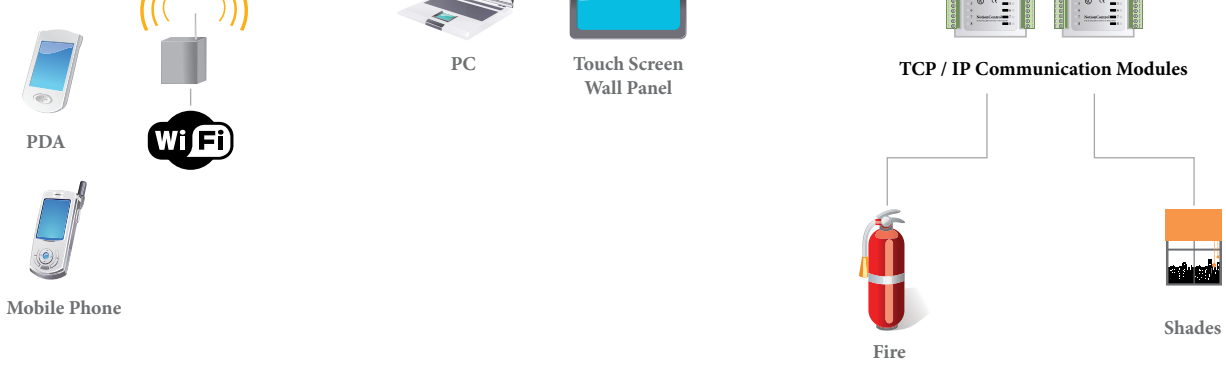
HVAC PRODUCTS 2011 CATALOGUE

NotionControl

THE INTELLIGENT POINT OF BUILDINGS

NotionControl is a high technology company in the field of developing and manufacturing automation system and instruments. We have developed many products in the fields of HVAC/R control and building automation. They are pressure/differential pressure switches, gages, temperature transmitters, humidity transmitters and LED display screens, etc. All of them have CE certificate and have been already exported to international market.



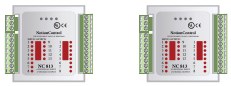


We have years of experience in the HVAC/R and BAS market so we are continuing to develop the high quality and cost effective products these years. Their excellent performance in all markets give us confidence to introduce them to international market. As a goal of becoming a qualified supplier in the fields, we will continue to try our best to satisfy customers all over the world.

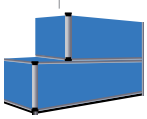
NOTION WEB SERVER

LonWorks **BACnet** **Modbus**

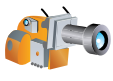
DDC Programable Controllers



DDC Programable Controllers

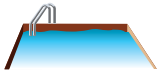


HVAC



Brulor

Lighting



Swimming Pool

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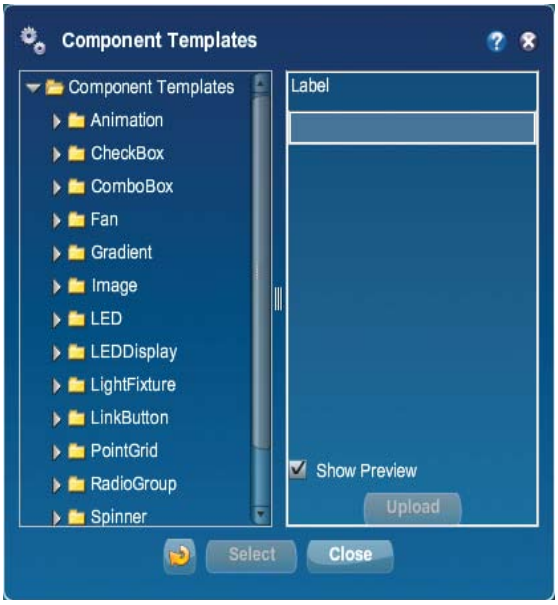
SCADA

HMI & Interface Devices



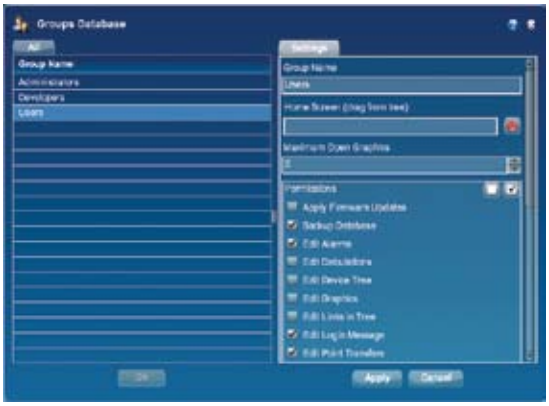
Overview

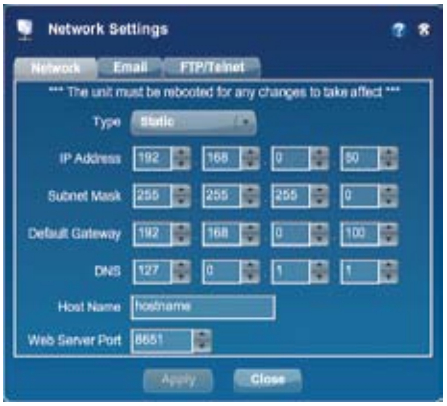
HMI Web Server is a standalone, embedded, webbased graphical interface for building automation and process/access control systems. Multiple protocols are supported including LonWorks, ModBus/485, ModBus/TCP and BACnet/IP & MS/TP.

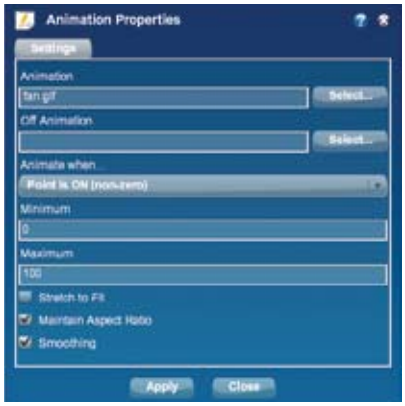
Some of the features include animated graphic screens, scheduling, historical trending, runtime accumulation and alarm monitoring. All of these features are supported even with devices that do not natively support them. HMI-WS will automatically toggle outputs and change setpoints on schedule, collect runtime and trend data, and monitor alarm conditions.

HMI-WS uses Flash memory for internal storage. It contains no hard disk or other moving parts. The Linux operating system is used for enhanced security and stability. HMI-WS is totally selfcontained. All set up and user interactions are performed via a web browser. No dedicated PC or external applications are required.

The user interface utilizes Adobe Flash to allow for advanced graphical features, platform independence and drag and drop setup. Absolutely no knowledge of HTML, XML, Flash, JavaScript or any other programming language is required to set up or use HMI-WS.







Features

- Animated graphics
- Internally maintained schedules with sunrise/sunset and stagger offsets
- Trend collection, display and export
- Runtime accumulation with email notification
- Alarm condition monitoring with email notification
- Calculated point values (average, min, max, etc)
- Simple line programming for controlling equipment
- Database of up to 100 users and 100 user groups
- Multiple simultaneous users
- Activity log for tracking important user actions
- Template system for quickly cloning points, graphics, devices or entire networks
- Support for special templates that include all points, graphics, schedules, etc. for any device
- Flexible point addressing system allows access to most proprietary structures, bit fields and objects
- Calculations may be performed on data points when read and/or written (e.g. °F to °C or scaling)
- Support for custom plugin software device modules for more complex data access
- Support for thousands of tree nodes which can be any combination of points, graphics, trends, etc. There are no hard limits on individual nodes.

(Practical limits on control points will depend on communication speed and network bandwidth used.)

HMI-MI
ModBus/485 interface (isolated)

Hardware Specifications

- 200Mhz ARM9 CPU
- 64 MB SDRAM
- 512 MB NAND Flash
- 1 10/100 Ethernet port
- 2 USB 2.0 Compatible OHCI ports
- Watchdog timer
- Fanless -40° to +70°C
- Battery Backed Real Time Clock
- RoHS Compliant
- Power: 5V DC @ 350mA
- Small size: 12.5 x 7.9 x 2.8 cm

Requirements

No software is required other than a web browser with the free Adobe Flash player version 9 or higher installed. Supported browsers include:

- Windows: Internet Explorer and Firefox
- Macintosh: Safari
- Linux: Firefox
- Any other Adobe Flash 9 compatible browsers

Protocols Supported

- LonWorks
- ModBus RTU/485
- ModBus/TCP
- BACnet IP & MS/TP

Models	
HMI-WS	SCADA
HMI-LIT	Lon interface (twisted pair)
HMI-LIP	Lon interface (powerline)
HMI-MI	ModBus/485 interface (isolated)
HMI-BI	BACnet MS/TP interface
HMI-MR	ModBus Repeater

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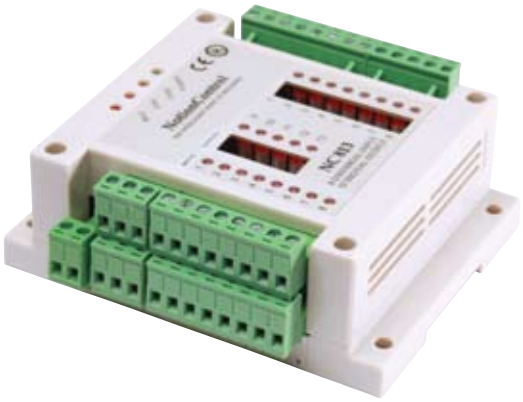
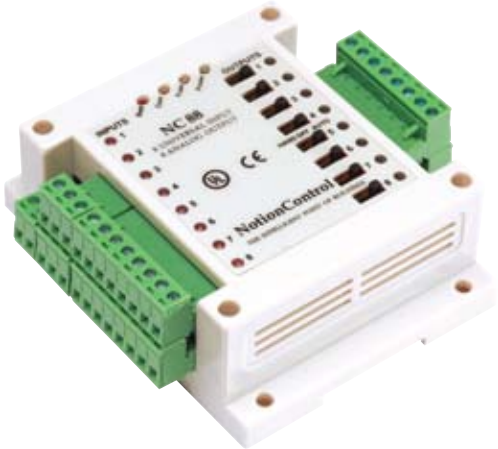
DDC

Programable Controllers





Introduction

NC DDC Modules are a general purpose, passive monitoring, active controlling, RS485 networked, Universal Input/Output Modules used with the HMI WS to monitor inputs and outputs within the Automation System.
NC DDC Modules low cost makes it an ideal and practical monitoring and controlling interface with various high density I/O third party sub systems such as access and security control alarm systems.
The modules have flexibility with selectable inputs for thermistor and dry contacts digital inputs.

Features

- LED indication on all inputs.
- High input density in networked small form to reduce wiring installation costs by having localized distributed nodes rather than long wiring cable runs back to larger controllers.
- Up to 254 units per local twisted pair RS485 network gives unlimited modular expandability and integration with the Modbus and BACnet compatible systems to meet the control needs of all building projects.
- NC Tool brings quick configuring flexibility to the modules to enable unlimited systems to be controlled.
- Universal Inputs that can be configurable to be Digital, Analog or Thermistor for maximum flexibility.
- Various Applications: Temperature, Humidity, CO_2, Pressure, Flow, Voltage, Current, Dry Contacts

Specifications And Dimensions

Temperature range: 10-50°C (50-99°F)
Supply voltage: 24VAC ±20%, 50-60Hz
Power consumption: 100mA at 12VDC

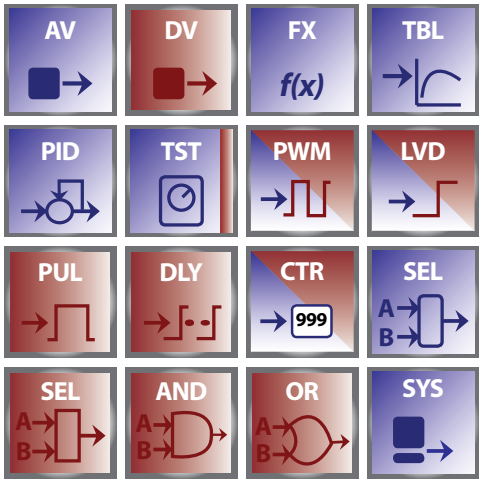
Ambient temperature:
Operation: 10-50°C (50-99°F)
Storage: 2-50°C (35-120°F)
Ambient humidity: 10-90 %Rh
Material, enclosure: Flame proof plastic
Enclosure rating: IP31
Colour: White/Off-white
Weight: 280g

Models	
NC 32	32 UI
NC 88	8 UI, 8 AO
NC 813	8 UI, 13 DO
NC 101	7 UI, 5 DO, 2 AO
NC 102	8 UI, 5 DO, 2 AO

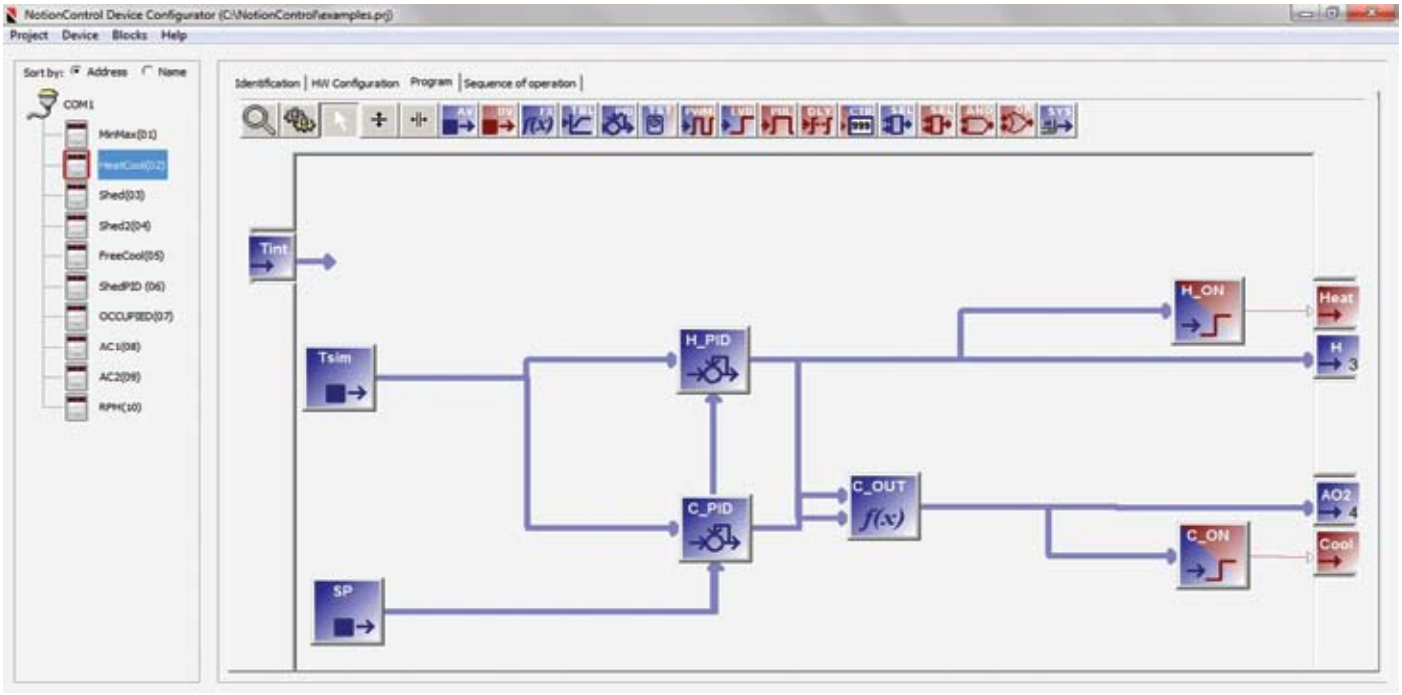
NC Tool

NotionControl Device Configurator

The NC Tool executive is a programming system for micro controller embedded data acquisition and control applications. It provides a Windows based user interface and embedded firmware. The NC Tool allows a user to completely configure, download, and monitor an arbitrary control algorithm inside a micro controller based communicating I/O device. It provides a visual, function-block oriented, programming experience allowing Industrial Automation and/or HVAC professionals with no programming skills to implement custom control strategies.



AV Analog Value
DV Digital Value
FX f(x) Function Block
TBL Table Function Block
PID Proportional-Integral-Derivative Control
TST Thermostat Control Algorithm
PWM Pulse-Width Modulation
LVD Level Detector
PUL Pulse
DLY Delay
CRT Counter
SEL Analog Selector Block
SEL Digital Selector Block
AND AND Function Block
OR OR Function Block
SYS System



NotionControl

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AC Drives

Frequency Invertor

Applications

- Sensorless Vector AC Drive
- PID Control with Sleep Mode
- Simple Full Featured Operator with Speed Potentiometer
- PC Programming Software
- RS485 Interface Option
- EEPROM Program Copy Unit
- .5 to 3 HP, 230V, 50/60 Hz, 1-Phase
- 1 to 75 HP, 460V, 50/60 Hz, 3-Phase
- UL, cUL, and CE Approved

Specifications

Control Mode: Sensorless Vector and V/Hz
Input Voltage Rating: 230V 1-Phase; 460V 3-Phase
Input Voltage Tolerance: +10%, -15 Hz
Frequency Control Range: 0 to 400 Hz
Speed Control Accuracy: +/- 0.5% (Sensorless Vector Mode)
Speed Commands: 0 to 10VDC, 0 to 20mA, Pulse Input
Overload Capacity: 150% Current of Drive Rating for 1 Minute
Braking: DC Injection Braking: Dynamic Braking (optional)
Protective Functions: Motor and Inverter Overload, Overvoltage, Overheating, Peak Overcurrent
Programmable I/O: 7 Digital Inputs (NPN or PNP), 2 Relay Outputs
Ambient Temperature: -10°C to +50°C, (14°F to 122°F)
Enclosure: IP20 Protective Chassis/NEMA 1

Dimensions and Weights

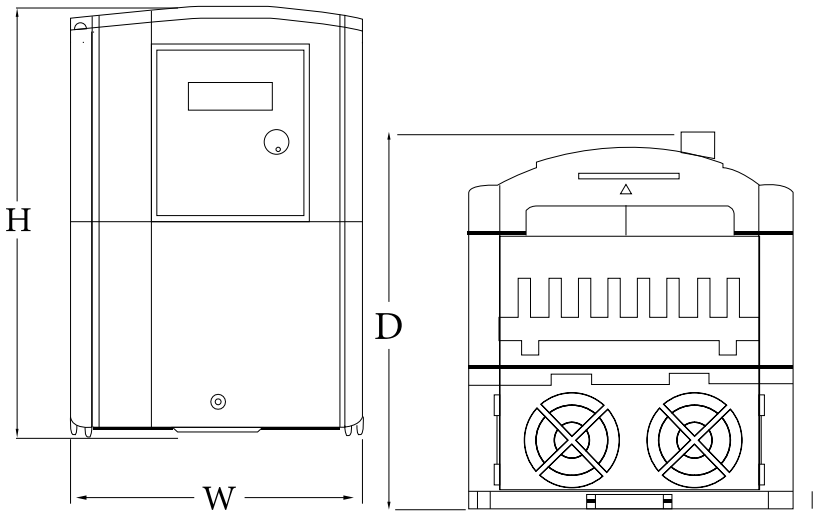
230 V 1-Phase Input / 3-Phase Output

Model	kW	Drive Amps	Dimensions (mm)			Approx. Wt. (kg.)
			Height	Width	Depth	
NC 2P5	0,4	3,1	16,3	9	14,7	1,4
NC 201	0,75	4.5	16,3	9	14,7	1,4
NC 202	1,5	7.5	18,7	12,8	14,8	1,8
NC 203	2,2	10.5	18,7	12,8	14,8	2,3

460 V 3-Phase Input / 3-Phase Output

Model	kW	Drive Amps	Dimensions (mm)			Approx. Wt. (kg.)
			Height	Width	Depth	
NC 401	0,75	2,3	16,3	9	14,7	1,4
NC 402	1,5	3,8	16,3	9	14,7	1,4
NC 403	2,2	5,2	18,7	12,8	14,8	1,8
NC 405	3,7	8,8	18,7	12,8	14,8	1,8
NC 407	5,5	13	26	18,6	19,5	5,9
NC 410	7,5	17,5	26	18,6	19,5	5,9
NC 415	11	25	26	18,6	19,5	5,9
NC 420	15	32	36	26,5	24,6	12,2
NC 425	18,5	40	36	26,5	24,6	13,2
NC 430	22	48	36	26,5	24,6	13,2
NC 440	30	64	64,6	26,9	30,5	30,4
NC 450	37	80	64,6	26,9	30,5	30,4
NC 460	45	96	74,7	30,8	38,6	46,3
NC 475	55	128	74,7	30,8	38,6	46,3

Dimension (mm)



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TTC

Temperature Transmitter & Controller

Applications

TTC wall mount digital multifunction temperature transmitters/controllers are designed for environment monitoring and controlling in industrial and commercial buildings.

They can be used for indoor air temperature monitoring in various industrial plant, clean room, lab, machine room, office, airport, station, library and stadium, etc.

Features

- High performance digital temperature sensor, ensure accurate measurement fast response and good long term stability
- Light and state of art housing, easy installation and wiring.
- Multiple outputs selection
- Digital technology applied, over voltage and reverse polarity protection, high reliability and interference capability
- Optional relay for alarm or ON/OFF control
- Wide working temperature range
- The OP can set parameters and calibrate output, so that the product becomes a stand alone controller

Specifications

Sensor: Digital temperature sensor,
Range: 0~50°C, or others (transmitter)
Output: 4~20mA,0~10VDC,RS485/Modbus
Output Load: ≤600Ω(current), 2KΩ(voltage)
Relay: 1×SPDT,1A/30VDC/0.5A/125VAC
Accuracy: <±0.5°C@ -10~85°C
Power: 18~30VAC/DC
Display: LCD display
Display Resolution: 0.1°C
Work Temperature: -40~85°C, 0~95%RH (Non condensing)
Storage Temperature: -40~85°C
Housing: Fireproof ABS
Protection: IP30

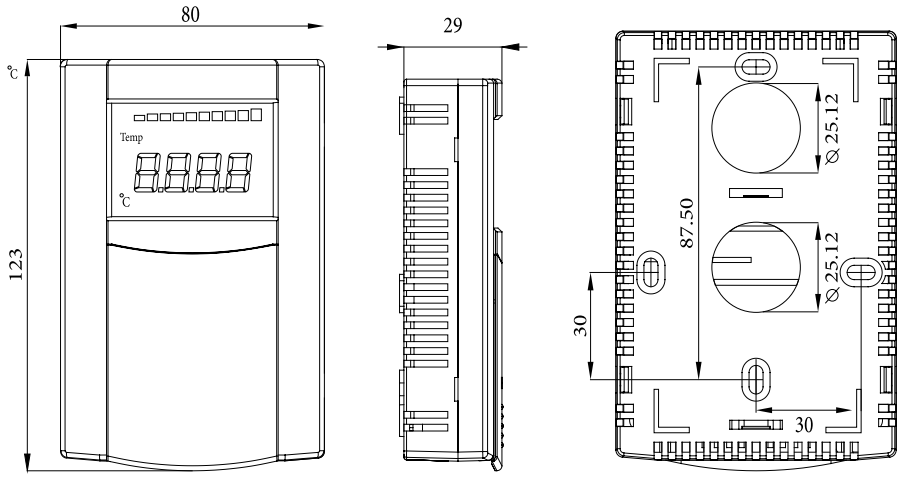
Models

Description	Code				
Temperature Transmitter & Controller	TTC				
Output					
4-20mA/0-10VDC		1			
4-20mA/0-10VDC, RS485, Modbus		B			
Range					
0~50°C			1		
Others			7		
Relay					
No				0	
1*SPDT				1	
LCD & OP					
No					0
LCD					1
OP					2

Optional LCD display: LCD display panel could be ordered and installed in field separately. See details on OP product.

Optional OP operation panel: Including LCD, integrated with function keys, can be ordered and installed in field separately. See details on OP product.

Dimension (mm)



TTC
Temperature Transmitter & Controller

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THE INTELLIGENT POINT OF BUILDINGS

TS and TT

Temperature Sensor / Transmitter

Applications

TS and TT series temperature sensors/transmitters are designed for immersion or critical temperature monitoring in industrial and commercial HVAC systems.

These sensors/transmitters can be used for temperature monitoring in duct air, water/vapor pipe and outside air in various industrial plant, clean room, lab, machine room, office, airport, station, library and stadium, etc.

- High performance thermistor/RTD, ensure accurate temperature measurement
- Up to date IC circuit and SMT technology, ensure good long term stability and reliability
- Multiple output signals selectable
- Fast response
- High protection rate up to IP65

General Specifications

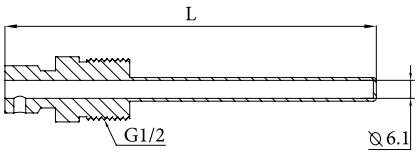
Work temperature: -40~85°C, 0~95%RH(Non condensing)
Storage temperature: -40~85°C
Housing: ABS Enclosure, SS probe, SS Sintered Filter, SS Well
Protection: IP65

TS series temperature sensor
Sensor: High accuracy thermistors/RTD, class A
Output: Thermistors/RTD, 2 or 3 wires
Accuracy: Typical 0.2°C@25°C
Wiring: 2 wires or 3 wires
(3 wires connection will obtain better accuracy)

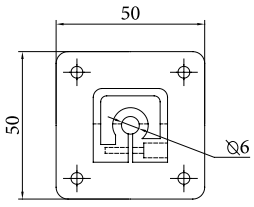
TT series temperature transmitter
Sensor: PT100/1000, Class A
Range: -40~100°C, see Models
Output: 4~20mA/0~10V/RS485
Total accuracy: <±0.5°C@25°C
Power: Voltage 15~35VAC/DC, current 7.5-36VDC
Output load: <500Ω (current), >2KΩ (voltage)

Accessories

TSI/TTI Stainless steel well

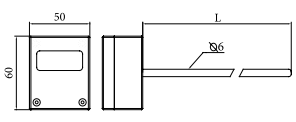


TSD/TTD Install Flange

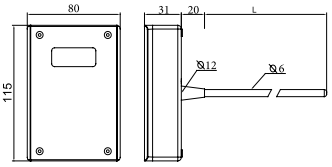


Dimension (mm)

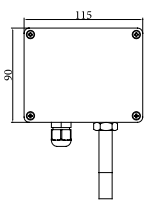
TSD/TSI



TTD/TTI



TSO/TTO



Models

Description	Code		
Wall mount temperature sensor	TSR		
Duct mount temperature sensor	TSD		
Outside air temperature sensor	TSO		
Immersion temperature sensor	TSI		
Thermistor/RTD Selections			
PT1000, ±0.2˚C@25˚C		3	
PT100, ±0.2˚C@25˚C		4	
NTC20K, ±0.2˚C@25˚C		5	
Ni 1000, ±0.4˚C@25˚C		6	
NTC10K-II, ±0.2˚C@25˚C		7	
NTC10K-III, ±0.2˚C@25˚C		9	
NTC10K-A, ±0.2˚C@25˚C		A	
Length (TSD/TSI)			
125mm (TSD/TSI)			1
200mm (TSD/TSI)			2
Others (TSD/TSI)			7

Description	Code			
Wall mount temperature transmitter	TTR			
Duct mount temperature transmitter	TTD			
Outside air temperature transmitter	TTO			
Immersion temperature transmitter	TTI			
Output				
0-10VDC		1		
4-20mA		2		
Range				
0-50˚C			1	
0-100˚C			2	
-40-60˚C			3	
Others			7	
Length (TTD/TTI)				
125mm				1
200mm				2
Others				7

TSI/TTI Install Well	Code	
Stainless Steel Well	TW	
Output		
125mm		1
200mm		2

TS and TT
Temperature Sensor / Transmitter

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HTTR

Wall Mount Humidity & Temperature Transmitter

Relative humidity:
Sensor: Capacitance polymer
Range: 0~100%RH
Output: 4~20mA /0~10VDC/RS485
Accuracy: 2%, 3%, 4.5%RH (25°C,20~80%RH)
Hysteresis: <±1%RH
Response time: <10s(25°C, in slowly flow air)
Drift: <±0.5%RH/year

Temperature
Sensor: Solid state band gap, RTD or thermistors
Range: 0~50°C for transmitter
Output: 4~20mA/0~10VDC/RS485, RTD or thermistors
Accuracy: <±0.5°C@25°C

Applications
HTTR wall mount temperature and humidity transmitters are designed for environment monitoring and controlling in industrial and commercial buildings. These transmitters can be used for indoor air temperature and humidity monitoring in various industrial plant, clean room, lab, machine room, office and airport, station, library and stadium, etc.

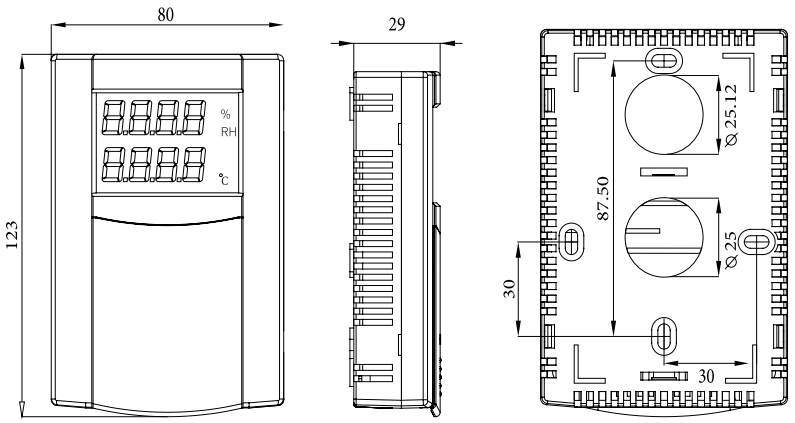
- High performance digital sensors and circuits, ensure accurate measurement and temperature compensation
- Good long term stability and reliability
- 100% field changeable sensors, no re-calibration needed
- Fast response
- State of art enclosure design
- Multiple output signals selectable

General Specifications
Power: Voltage 15~35VAC/DC, current 7.5-36VDC
Output load: <500Ω (current), >2KΩ (voltage)
Display: Large LCD screen digital display, optional
Display accuracy: 0.1°C, 0.1%RH
Display resolution: 0.1°C, 0.1%RH
Temperature limit: 0~70°C, 0~95%RH (Non condensing)
Storage temperature: -20~80°C
Housing: ABS Enclosure
Protection: IP30

Models

Descriptions	Code					
Wall mount H/T transmitter	HTTR					
Output						
±2%RH		2				
±3%RH		3				
±4.5%RH		5				
RH Output (0-100%RH)						
0-10VDC			1			
4-20mA			2			
RS485, Modbus			8			
Temperature Output						
No				0		
0-10VDC				1		
4-20mA				2		
PT1000, ±0.2˚C@25˚C				3		
PT100, ±0.2˚C@25˚C				4		
NTC20K, ±0.2˚C@25˚C				5		
Ni 1000, ±0.4˚C@25˚C				6		
NTC10K-II, ±0.2˚C@25˚C				7		
RS485, Modbus				8		
NTC10K-III, ±0.2˚C@25˚C				9		
NTC10K-A, ±0.2˚C@25˚C				A		
Temperature Range						
No					0	
0-50˚C					1	
Others					7	
LCD						
No						0
Yes						1

Dimension (mm)



HTTR
Wall Mount Humidity &
Temperature Transmitter

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THE INTELLIGENT POINT OF BUILDINGS

HTTD, HTTO and HTTS

Humidity & Temperature Transmitter

Relative humidity:
Sensor: Capacitance polymer
Range: 0~100%RH
Output: 4~20mA /0~10VDC/RS485
Accuracy: 2%, 3% and 4.5%RH(25°C, 20~80%RH)
Hysteresis: <±1%RH
Response time: <10s (25°C, in slowly flow air)
Drift: <±0.5%RH/year

Temperature
Sensor: Solid state band gap, RTD or thermistors
Range: 0~50°C for transmitter
Output: 4~20mA/0~10V/RS485, RTD or thermistors
Accuracy: <±0.5°C@25°C

Applications

HTTD, HTTO and HTTS humidity and temperature transmitters are designed for environment monitoring and controlling in industrial and commercial buildings. These transmitters can be used for:

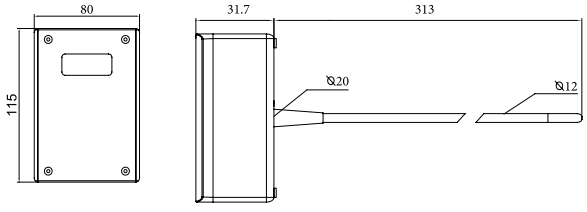
- Humidity and temperature monitoring of supply, exhaust and return air (HTTD, duct mount)
- Humidity and temperature monitoring in critical environment such as outside air (HTTO, outside mount)
- Other applications of immersion humidity and temperature monitoring (HTTS, separate probe)
- High performance digital sensors and circuits, ensure accurate measurement and temperature compensation
- Good long term stability and reliability
- 100% field changeable sensors, no re-calibration needed
- Fast response
- Multiple output signals selectable
- Industrial design, SS probe and selectable filter
- High protection rate up to IP65

General Specifications

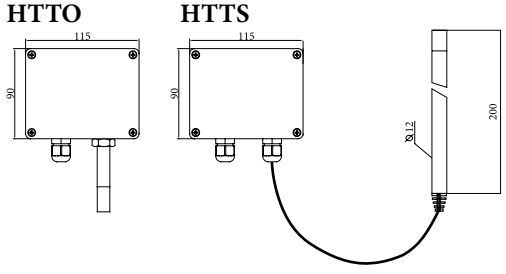
Power: Voltage 15~35VAC/DC, current 7.5-36VDC
Output load: <500Ω (current), >2KΩ (voltage)
Temperature limit: -40~85°C, 0~95%RH (Non condensing)
Storage temperature: -40~80°C
Housing: ABS Enclosure, SS probe, SS sintered or mesh filter
Protection: IP65

Dimension (mm)

HTTD



HTTO **HTTS**



Models

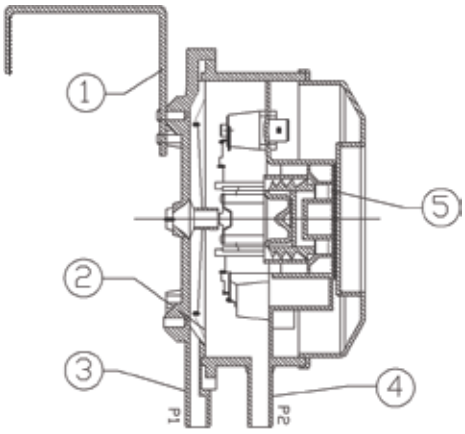
Descriptions	Code					
Duct mount temp./RH transmitter	HTTD					
Outside air temp./RH transmitter	HTTO					
Separate temp./RH transmitter	HTTS					
RH Accuracy						
±2%RH		2				
±3%RH		3				
±4.5%RH		5				
RH Output (0-100%RH)						
0-10VDC			1			
4-20mA			2			
RS485, Modbus			8			
Temperature Output						
No				0		
0-10VDC				1		
4-20mA				2		
PT1000, ±0.2˚C@25˚C				3		
PT100, ±0.2˚C@25˚C				4		
NTC20K, ±0.2˚C@25˚C				5		
Ni 1000, ±0.4˚C@25˚C				6		
NTC10K-II, ±0.2˚C@25˚C				7		
RS485, Modbus				8		
NTC10K-III, ±0.2˚C@25˚C				9		
NTC10K-A, ±0.2˚C@25˚C				A		
Temperature Range						
No					0	
0-50˚C					1	
0-100˚C					2	
-40-60˚C					3	
Others					7	
Filter						
Stainless steel mesh						0
Stainless steel sintered						1

HTTD, HTTO and HTTS
Humidity & Temperature Transmitter

DPS

Differential Pressure Switch

Pressure limit: 7500Pa
Working temperature: -20~ 85°C
Pressure connection: φ6.0mm plastic pipe, P1 high and P2 low pressure
Service life: Over 10^6 switching cycles
Electrical Contact: SPDT, max. 2A/250VAC, max. frequency 6 switching cycles/min
Materials: Housing PC, cover PC, diaphragm silicone and contact silver
Weight: 140g with bracket, 90g without bracket
Protection: IP54 with cover



Applications
Monitor overpressure, vacuum and differential pressure for air and compatible gases. Possible applications are: monitor air filters and ventilators, monitor air status in heating and cooling circuits, monitor flows in ventilation duct other applications.

General Specifications
Installation: Vertical, pressure ports P1 and P2 downward.
This is the factory-calibrated position. If horizontally installation needed, the switching value should plus about 20pa (cover upward) and minus about 10pa (cover downward).

Accessory (AC1): the pressure connection set includes plastic pipe 2m, 2 pressure connection parts and 4 screws.

Remark
It is for the one with bracket, the left one in the lower left picture of this page. Another style with installation ear is the right one in the picture. The two styles are for different applications. Their internal structures are the same.

Structure
1. Bracket for installation
2. Diaphragm
3. P1 high pressure or low vacuum
4. P2 low pressure or high vacuum
5. Scale dial (switching point setting)

DPS
Differential Pressure Switch

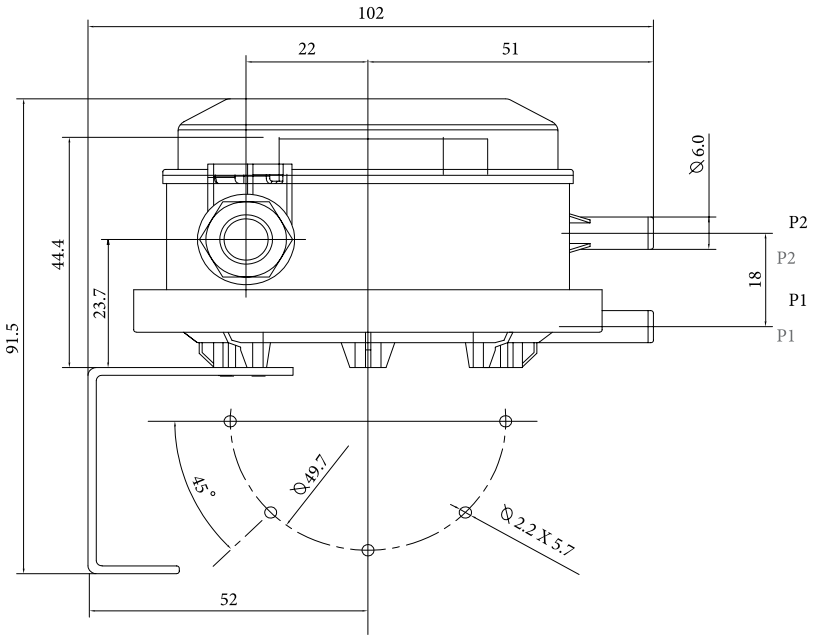
Models

	DPS	x	x	x	Scales for Different Units			
Enclosure	With install ear	0						
	No ear, with bracket	1			mbar	inch wc	mm wc	deadband*
Adjustable range	20-300Pa		0		0.2-3	0.08-1.2	2-30	10Pa
	50-500Pa		1		0.5-5	0.2-2	5-50	20Pa
	100-1000Pa		2		1-10	0.4-4	10-100	20Pa
	0.5-2.5KPa		3		5-25	2-10	50-250	30Pa
Engineering unit	Pa			0				
	mbar			7				
	inch wc			8				
	mm wc			9				

* The deadband is factory set.

DPS Accessories	
AC 1	Individual accessory package:clear PVC tube 2mt,connectors 2pcs, screws 4pcs
AC 2	Clear PVC tube 2mt
AC 3	Plastic connector 1pcs

Dimension (mm)



NotionControl

THE INTELLIGENT POINT OF BUILDINGS

PT

Pressure Transmitter

Applications

Applicable to: hydraulic, HVAC&R system, die-casting system, motorcycle braking system, petrochemical, metallurgy, environmental and other general automatic control and measurement systems

- Diffused silicon sensor
- Stainless steel structure
- Zero and range adjustable on site
- Small size, easy to install

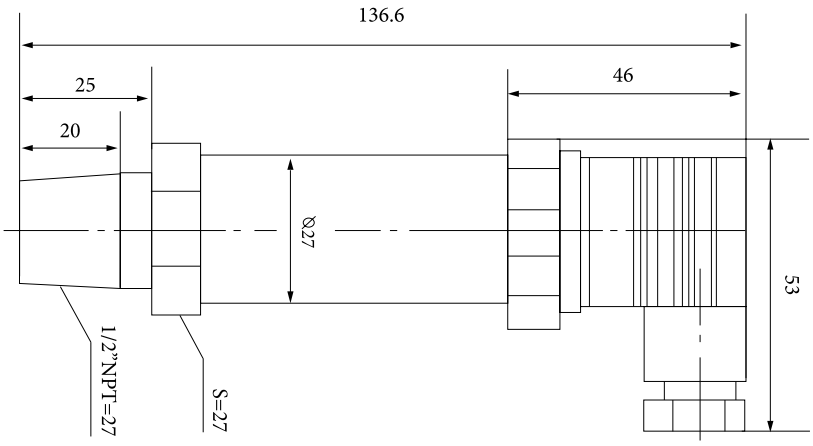
Models

Descriptions	Code			
Gage Pressure Transmitter	PTG			
Absolute Pressure Transmitter	PTA			
Range				
0~6 Bar		1		
0~10 Bar		2		
0~16 Bar		3		
Others		4		
Process Connection				
1/2NPT			1	
G1/2			2	
Others			3	
Electrical Connection				
Hirschmann Connector				1
Cable				2

General Specifications
Range: 0...4KPa-35MPa
Power supply: 15~36VDC
Output: 4~20mA

Overload: 2~30 times full range
Working temperature: -20~85°C
Temperature drift: 0.02%, max. 0.25%
Zero adjust: +5%
Range adjust: 30%
Stability: 0.1%FS/year
Measuring diaphragm: 316 Stainless steel
Housing protection: Cable type IP68, connector type IP65
Electrical connection: Cable or Hirschmann connector

Dimension (mm)



DPT and TPT

Differential Pressure Transmitter

NotionControl

THE INTELLIGENT POINT OF BUILDINGS

Applications

DPT/TPT differential pressure transmitter, can precisely monitor very low range differential pressure with multiple functions. It can compensate temperature effect, is not sensitive to medium and does not have any pressure drift. So is very reliable. The pressure vibration can be filtered by the damping function. The output is steady under very low range pressure and the sensor is not sensitive to dust and moisture. It could even be installed in the outside air environment between -20~70˚C.

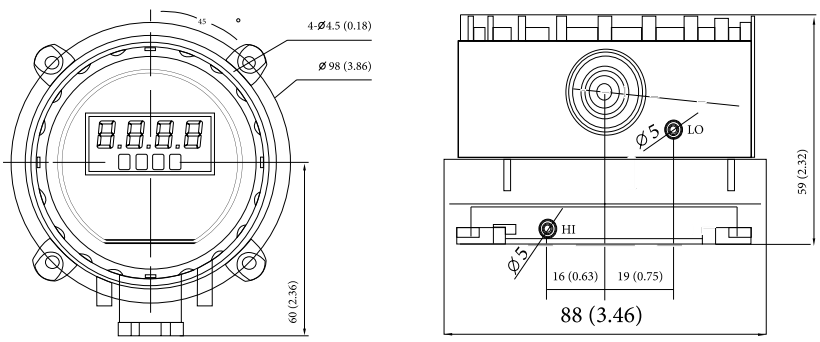
It is applicable to: clean room, isolated room, ventilation system, energy management system, leak testing, air velocity measurement, medical care and test instrument, furnace pressure test, etc.

- Minimum DP range to 25Pa and accuracy is 1%
- Range select could be easily set by button in field, do not need extra pump equipment
- Multiple applications, positive, negative or differential pressure
- Selectable double line four bit LCD Display
- High protection housing IP65

Models

Specifications	Code				
Diff. Pressure, 0-FS	DPT				
DP with zero at center	TPT				
Output					
0-10VDC		1			
4-20mA		2			
Range					
25, 50, 125Pa (max. 100Pa for TPT)			1		
250, 500, 1250Pa			2		
750, 1500, 2000Pa			3		
1, 2, 3KPa			4		
LCD Display					
No				0	
Yes				1	
Accessory					
No					0
196mm static pressure probe					1

Dimension (mm)



Specifications

Medium: Air and non-combustible gas
Accuracy: 1%
Range: Min. 0~25Pa, max. 0~3KPa
Temperature range: -10~50°C
Temperature drift: 0.05% (zero and full range total)
Pressure limit: 1 psi (continuous), 10 psi (exploded)
Power supply:10~35VDC(2 wires);
15~36VDC or isolated 15~26VAC (3 wires)
Output signal: 4~20mA(2 wires); 0~10(3 wires)
Response time: Field adjustable 0.5˚15s
Zero and full range adjust: Digital button
Output load: <1250 ohm (current);
>1000 ohm (voltage)
Electrical consumption: <40mA
Display (optional): LCD
Electrical connection: 1/2" NPS terminal
Pressure connection: 3/16" (5 mm) ID pipe,
Max. OD 9mm
Protection rate: IP65
Installation direction: Vertical

NotionControl

THE INTELLIGENT POINT OF BUILDINGS

CDR and CDD

Carbon Dioxide (CO_2) Transmitter

Specifications

Sensor: NDIR Sensor, with ABC calibrate function and active gas diffusing
Accuracy: See in models selection
Response time: <10s (30cc/min, low flow gas)
Drift: <±10ppm/year
Range: 0~2000ppm or others
Output: 4~20mA/0~10V or RS485
Relay output: SPDT relay, 1A/30VDC,0.5A/125VAC
Power supply: 24VAC/DC±10%
Load resistance: 500Ω (Current output)
Display: LCD Display (optional)
Display accuracy and resolution: 1ppm
Working environment: 0~50˚C,0-95%RH(Non-condensing)
Storage temperature: -20~80˚C
Housing: ABS
Protection: IP30 (CDR), IP65 (CDD)

Applications

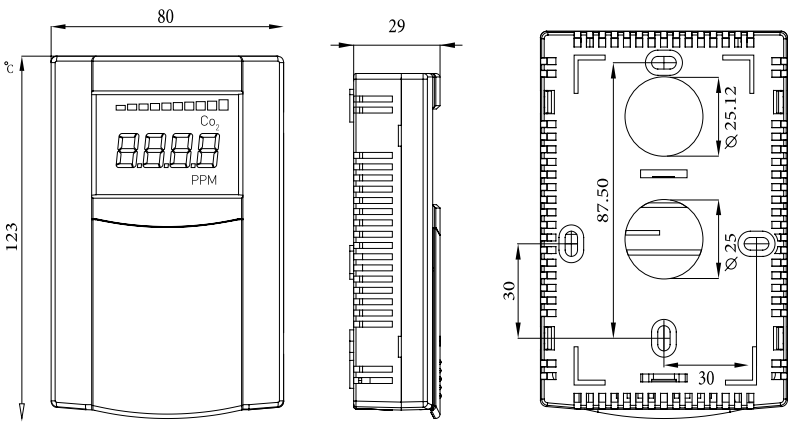
CDR and CDD carbon dioxide transmitters are designed for monitoring and controlling environment of industry and commercial buildings. They can be used in working house, clean room, laboratory, machine room, office, airport, parking lot, station and museum, etc. where air quality control is necessary. CDR is for wall mount and CDD is for duct mount.

- High performance NDIR digital sensor and circuit, ensure precise measurement and temperature compensation
- Stable and reliable
- 15 years sensor life and maintenance-free
- Fast response
- Light and state of art housing
- Optional output selection

Models

Specifications	Code					
Wall mount CO_2 Transmitter	CDR					
Duct mount CO_2 Transmitter	CDD					
Accuracy						
(75+reading 5%) ppm		0				
(30+reading 5%) ppm		1				
Output						
4-20mA/0-10VDC			1			
4-20mA/0-10VDC, RS485, Modbus			B			
Range						
0-2.000ppm				0		
Others (0-5.000ppm)				7		
Relay Output						
No					0	
2*SPDT					1	
LCD & OP Display (CDR)						
No						0
LCD						1
OP						2

Dimension (mm)



CMR and CMD

Carbon Monoxide (CO) Transmitter

Applications

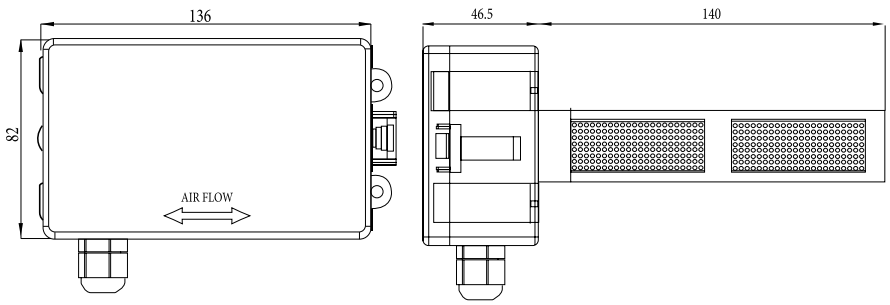
Building standard request good ventilation in parking garages, engine repair shops and tunnels. So we should keep enough fresh air supply in the ventilation system. When the concentration of carbon monoxide is less than 25ppm or 50ppm, we can decrease the ventilation or even stop it.

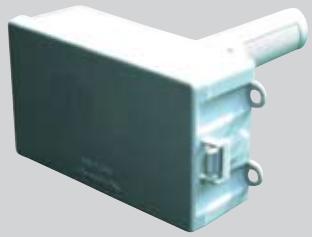
Based on this principle, we can use carbon monoxide transmitter to monitor the ventilation. It could ensure the indoor air quality and save the energy cost for unnecessary ventilation at the same time. CMD and CMR transmitters are designed for this application. The CO sensor uses electrochemical technology, has 5 years guaranty.

- Electrochemical technology sensor with high accuracy and long term reliability
- Digital technology
- Multiple output and range selectable
- Five years sensing life
- Easy to change the sensor, save cost at most
- State of art housing design, easy to install and maintain

Models

Descriptions	Code				
Wall mount CO transmitter	CMR				
Duct mount CO transmitter	CMD				
Output					
4-20mA/0-10VDC		1			
4-20mA/0-10VDC, RS485, Modbus		B			
Range					
0-100ppm			0		
Other (0-400ppm)			7		
Relay					
No				0	
2*SPDT				1	
LCD & OP (CMR)					
No					0
LCD					1
OP					2





Specifications
Sensing principal: Electrochemical
Sensor life: 5 years
Work temperature: 0-50˚C, 0-90%RH(Non-condensing)
Storage temperature: -40 -70˚C
Sensing range: 0-100/200/400ppm
Repeatability: Sensing value+/-5%
Linear accuracy: Sensing value+/-5%
Suggested recalibrate interval: 1 year
Response time: T90=< 60s
Warm up time: <2min
Power supply: 18-30VDC
Power consumption: 20mA
Output: 4-20mA/0-10V/RS485
Protection: IP30(CMR), IP65(CMD)

NotionControl

THE INTELLIGENT POINT OF BUILDINGS

OP

Operation Panel

Applications

OP operation panel is designed for the display and operation of HTTx, TTR, CDW, CDD, CMW and CMD products. It can be ordered along with these products or separately. It can be installed on site or as a portable tool, to be used when testing, modulating and maintaining the systems.

When compared with a standard meter, it could be used to field recalibrate the connected transmitters.

- High performance LCD Panel and membrane keys
- Good stability and reliability 100% Changeable and flexible usage
- State of art design but very cost effective

Remarks

HTTD, HTTSO, CDD and CMD products can not be installed LCD module. But they can be applied the full OP functions for adjusting and calibrating on site. It means although the LCD1/2 can not be installed on these products, the OP could still be applied to them as a portable tool. After the operation, the OP should be disconnected and the transmitter itself will be recovered.

LCD1
Screen dimension: 39.5 X 52.0 mm
Display accuracy: 0.1˚C, 0.1%RH, 1PPM
Display mode: Single line, with output bar in full range % and engineering unit
Back light: Yellow-green light
Compatible product: Single output HTTR, TTR, CDW, CMW

LCD2
Screen dimension: 39.5 X 52.0 mm
Display accuracy: 0.1˚C, 0.1%RH
Display mode: Temp./RH two lines display
Compatible product: Temp./hum. two outputs HTTR

OP1
Display / Keys: With LCD1 / 3 pcs
Compatible product: Single line output HTTx, TTR, CDW, CDD, CMW and CMD

OP2
Display / Keys: With LCD2 / 3 pcs
Compatible product: Two lines outputs HTTx

Models

Code	Descriptions	Applicable Products
LCD1	Single line display LCD module with back light, and front cover	Single Output products HTTR, TTR, CDW and CMW
LCD2	T/RH 2 lines display LCD module, with front cover	Temp./RH 2 outputs transmitter HTTR
OP1	Single line display LCD module with back light + function keys under the slide cover and the full installation box	Single output products HTTx, TTR, CDW, CDD, CMW and CMD
OP2	T/RH 2 lines display LCD module + function keys under the slide cover and the full installation box	Temp./RH 2 outputs transmitter HTTx

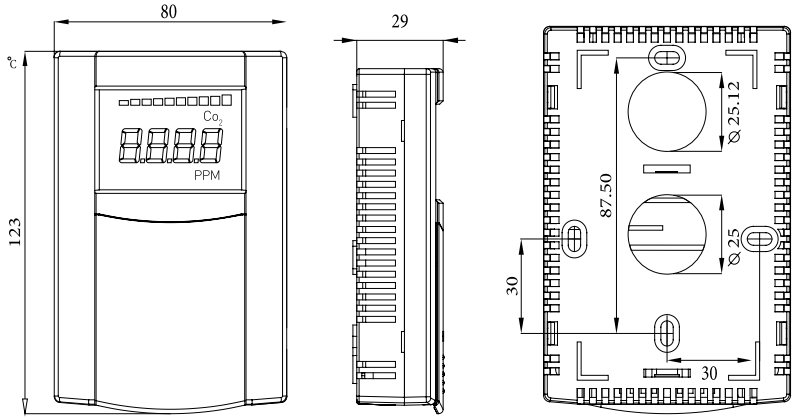
CO_2 Transmitter

CO Transmitter

Humidity Transmitter

Temperature Transmitter

Dimension (mm)



OP
Operation Panel

NotionControl

THE INTELLIGENT POINT OF BUILDINGS

AQT

Air Quality Transmitter

Material, enclosure: Flame proof plastic
Enclosure rating: IP31
Temperature sensor: 10K thermistor ±0.5°C
Colour: White/Off-white
Weight: 200g

Air-Stat Air Quality

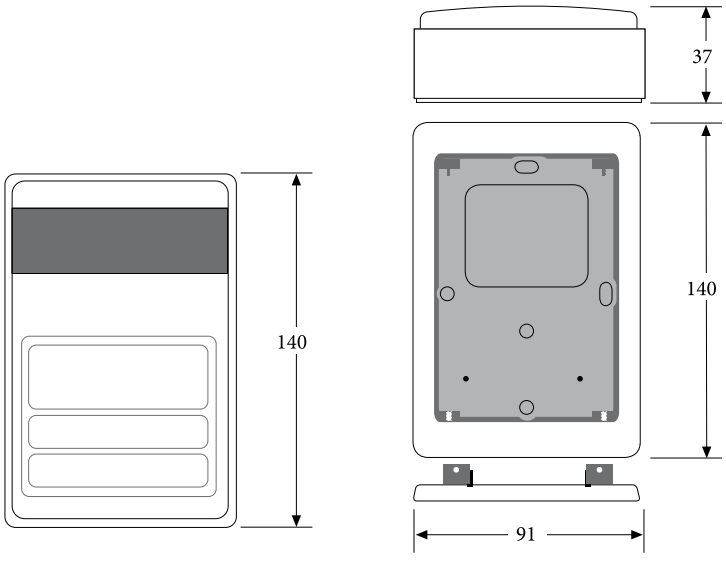
This full-featured CPU based device is ideal for the detection of Air Contaminants. In residential and commercial environment, the sensing element has high sensitivity to VOCs and odorous gases. The unit provides humidity and temperature readings, all of which is useful for increased Air Quality control.

Highlights

- High Sensitivity to VOCs and Odorous Gases
- High Impact Plastic Enclosure provides Durability in Commercial Environments
- Low Power Consumption
- Temperature and Humidity readings all in one
- Optional Network RS485 Communication
- Optional Analog Output Signal

Technical Data

Temperature range: 10-50°C (50-99°F)
Supply voltage: 12~24Vac ±20%, 50-60Hz
12~24Vdc ±20%, 50-60Hz
Power consumption: 55mA at 24Vdc
Ambient temperature: Operation: 10-50°C (50-99°F)
Storage: 2-50°C (35-120°F)
Ambient humidity range: 0-100%Rh
Humidity Sensor Element: Humirel HS1101
Air Quality Sensor Element: Figaro TGS2600
Figaro TGS2602



WFS

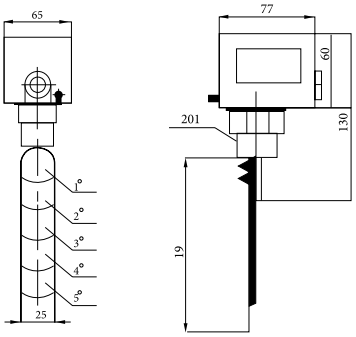
Water Flow Switch

Applications

WFS can be applied to water, chilled water, cooling water or other liquid for their flow status protection.

Contact: SPDT, 220VAC/3A
Working temp.: 5~40˚C
Media temp.: 5~80˚C
Max pressure: 1.6MPa
Weight: 0.5Kg

Dimension (mm)



Models

Item	Range liter/min	D Band liter/min	Pipe		Paddle Number
			in	mm	
1	20~48	8	1	25	1
2	34~100	10	1.25	32	1
3	65~160	14	1.5	40	1
4	120~280	26	2	50	1
5	40~140	18	2	50	2
6	210~550	18	2.5	70	1
7	110~340	15	2.5	70	2
8	380~750	20	3	80	1
9	180~470	18	3	80	2
10	115~220	20	3	80	3
11	350~920	20	4	100	2
12	210~590	20	4	100	3
13	380~1200	40	5	125	3

LTC

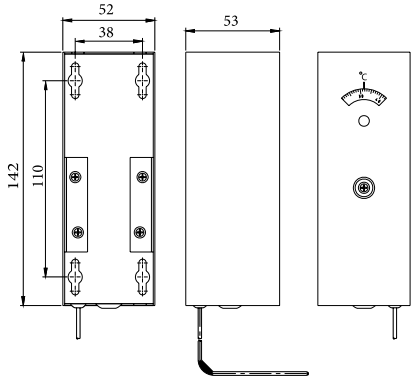
Low Temperature Controller

Applications

LTC low temperature controller has a long sensing component filled with vapor. When any part of the component is below the set point of low temperature, the contact of the controller will actuate. It is applicable to hot and cold water coil, other surface temperature alarm for liquid pipe or air in duct.

- Contact actuate at the set point (Low temp. open)
- Readable scale
- Easy to operate the set point

Dimensions (mm)



Specifications and Models

Part Number	Contact	Range˚C	Deadband ˚C	Length	Limit ˚C
LTC-3	SPDT, 250VAC 5A	1.0~7.5	2.5~3.5	3m	80
LTC-6	SPDT, 250VAC 5A	1.0~7.5	4.5~5.5	6m	80

NotionControl

THE INTELLIGENT POINT OF BUILDINGS

DA

Damper Actuators

Technical Data
Torque: 2-32 Nm
Control signal: On/off, 3-point, 0-10VDC, 4-20mA
Power supply: 24 VAC, 230 VAC
Power consumptions: 3,5-7,0 W
Angle of rotation: 100° (-5° to 95°)
Direction of rotation: Can be selected by back to front mounting
Connection: Cable 900 mm / 0.75 mm²
Safety class: lll
Protection: IP 54 (cable downwards)
Ambient temperature: -20 to +50°C
Maintenance: Maintenance free
CE: 73/23 EWG, 89/336 EWG

Applications

The Actuator is intended for ON-OFF and floating point controls in HVAC systems. It can easily mount on an 1/2" round or square shaft with solid screw sets. Angle of rotation is mechanically limited to 90. When the actuator reaches its maximum position, the device will automatically stop. An override lever is provided on the side to manually disengage the gear. Two mechanical stops are provided for extra adjustments. The magnetic clutch allows the device to be operated in the stalled condition indefinitely, no need to interlock the motor at the end of travel. Running time is independent of the load. Two optional endswitches provide status points or interlocks for fans & other devices.

Highlights

- Simple Direct Mounting
- Stall-Proof Synchronous AC Motor
- Adjustable Angle of Rotation with Mech. Stops
- Manual Override Lever
- Consistent running time
- Visual Position Indicator

Models

Descriptions	Code				
Damper Actuator	DA				
Power Supply					
24 VAC		L			
230 VAC		H			
Other		X			
Control Type					
On/Off			2		
3 point			3		
4-20 mA			4		
0-10 VDC			5		
Spring-Return					
No				0	
Yes				1	
Torque					
x Nm					- x

FC

Fan Coil Unit Valves & Thermostats

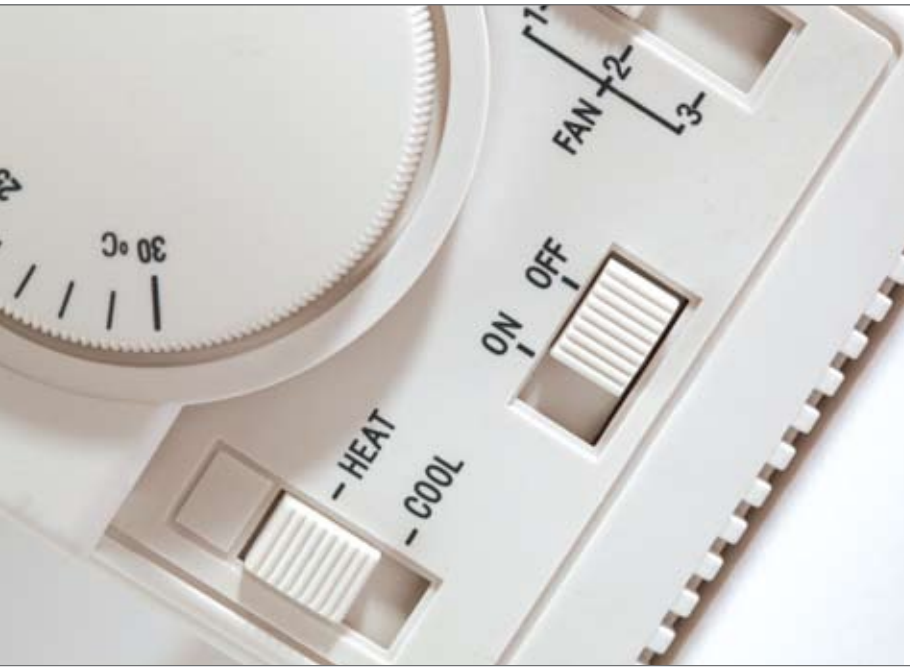
Applications

FCT series room thermostats are used in industrial, commercial and residential environments and is especially designed for Cooling/Heating equipment to maintain the room temperature. FCT series room thermostats allow users to choose from 3 speeds in order to control the outlet air speed.

FCV series two way and three way zone valves with On/Off action and spring return. The valves can handle hot or cold water zone control and are designed to withstand the high moisture conditions found in many concealed coil installations. Zone control valves are operated by a synchronous motor rotating a spring loaded shaft. A metal tab allows the valve to be put in to the manual open position, which springs to auto the first time the valve is powered up.

Technical Data

Power Voltage: 24/110/230 (VAC)
Power Consumption: 5W(only valve position change)
Dimension: 1/2", 3/4", 1"
Valve Presssure: 300psi (2MPa)
Max. Differential Pressure: 150psi (1MPa)
Running Time: 15sec.(50Hz)/12 sec.(60Hz)
Media Temp.Range: 1°C to 95°C
Operating Mode: On/off, 3-point control and modulating



VG and VGA

Globe Valves & Actuators

Description

VG series accurately regulate the flow of water or steam in response to the demand of a controller in heating, ventilating and air conditioning systems. These valves are available in normally open, normally closed, and three-way mixing configurations. Both electric and pneumatic actuators can be used. Valves are available in 1" through 12" size.

Specifications

- Complies with ANSI Class 250 (PSIG) standard.
- Flexible ordering using the guide provided in the spec sheets.
- Every valve tested for tight shutoff assuring ocupant comfort and energy conservaiton.
- Uses standard ring pack packing providing industry leading reliability and operating life.
- Complete actuator interchangeability allowing easy field retrofit or mounting using standardized mounting kits.
- All valve sizes available with brass trim for use in saturated steam applicaitons of up to 100psig.

Installation Instructions

Install globe valves with the fluid passing in the direction shown on the valve body and with suitable, strainers to prevent pipe shavings and debris from entering the valve body.

Preferred installation is upright, however, in high temperature installations (and where space restrictions dictate) the valve assembly should be mounted on its side,slightly above horizontal, so that the high temperatures rising from the pipe do not over heat the actuator. This will ensure maximum life expectancy and best performance while any leaking from the valve packing will run off the valve body rather than onto the operator.

Models

Descriptions	Code			
Globe Valve, 2 way	VG2			
Globe Valve, 3 way	VG3			
Size				
DN 25		1		
DN 32		2		
DN 40		3		
DN 50		4		
DN 65		5		
DN 80		6		
DN 100		7		
DN 125		8		
DN 150		9		
DN 200		A		
DN 250		B		
DN 300		C		
Pressure				
PN 6			1	
PN 10			2	
PN 16			3	
PN 25			4	
PN 40			5	
Connection Type				
Threaded				1
Flanged				2

Descriptions	Code			
Globe Valve Actuator	VGA			
Tork				
800 N		1		
1.000 N		2		
2.500 N		3		
4.000 N		4		
Control Type				
0...10V			1	
4...20mA			2	
3P, Floating			3	
Manuel Drive				
No				0
Yes				1

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THE INTELLIGENT POINT OF BUILDINGS

VR

Rotary Valves & Actuators (2/3 way, DN12...50)

Applications

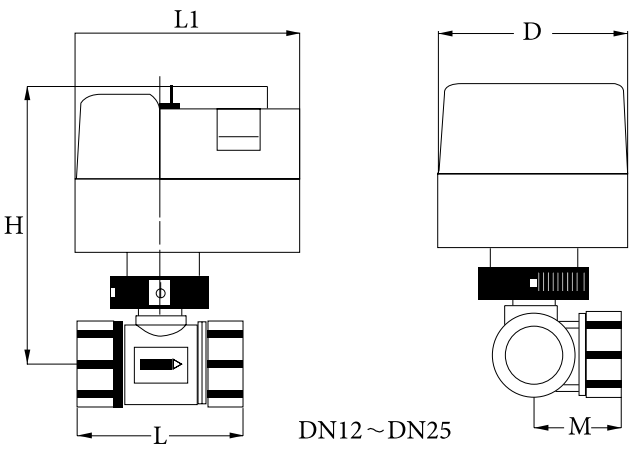
Motorized ball valve is using bi-directional motor, and mainly used in central air-conditioning system, heating system, water treatment, and production industry to control the flow of chilled/hot medium.

DN12...DN25

DN32...DN50

Actuator Technical Data			
Power Supply	24VAC	220VAC	24VAC
Frequency	50/60Hz		
Power	3VA on load	5VA on load	4VA on load
Control Signal	3-point floating, electric on / off		DC0(2) ~ 10V DC4(0) ~ 20mA
Default Setting	----		Input 0 ~ 10V DC Feedback 0 ~ 10V DC Running Status DA
Torque	DN12 ~ DN25		>= 4Nm
	DN32 ~ DN50		>= 6Nm
Stroke Time(0~90⁰)	DN12 ~ DN25	about 45s (50Hz/90⁰) / 90s for optional	
	DN32 ~ DN50	about 60s (50Hz/90⁰) / 120s for optional	
Rotation Angle	90⁰ <= Mechanical Limitation < 95⁰		
Cable	0.5 ~ 1mm²		
Material	Cover	Fire-retardent ABS engineering plastic	
	Chassis	Fire-retardent Reinforced nylon PA6 - 110	
	Gear	POM, Fire-retardent Reinforced nylon PA6-230, Brass HPb59-1	
Temperature	Operating: -5 ~ +50⁰C; Storage: -30 ~ +70⁰C		
Protection Class	IP54		

Dimension (mm)

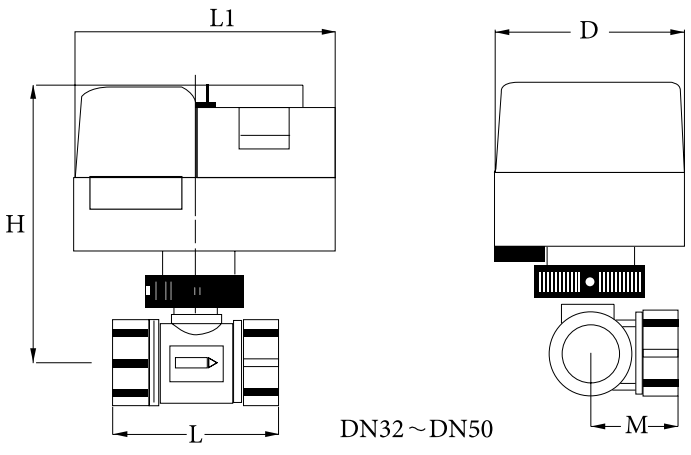


DN12~DN25

Valve Technical Data	
Working Media	Chilled / hot water or <= 50% glycot
Media Temperature	2 ~ 94^{0}C
Rated Body Pressure	PN25
Flow Characteristic	Equal Percentage
Leakage	A.B port 0~0.01% Kv AB port 0.5% Kv
Connection Type	Thread
Closing-off Pressure	600kPa
Rotation Angle	90^0
Installation Level	Horizontal / Vertical

Material	
Valve Body	Forged Brass
Valve Ball	Stainless Steel / Casting Brass (chrome-plate)
Valve Seat	PTFE
Valve Shaft	Stainless Steel / Forged Brass
Seal	NBR

Size	Rated Body Pressure	Kv	Dimension(mm)					
			L		H	M	L1	D
			2 way	3 way				
DN12	PN25	4.0	68	68	115	33	92	77
DN18		6.3	68	68	115	34		
DN25		10	82	84	120	43		
DN32		16	98	104	131	50	123	78
DN40		25	105	111	131	50		
DN50		40	122	143	135	61		



VR

Rotary Valves & Actuators (2 way, DN65...150)

Applications

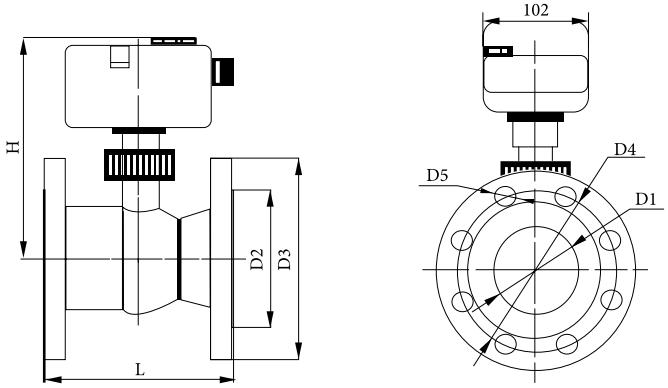
Motorized ball valve is using bi-directional motor, and mainly used in central air-conditioning system, heating system, water treatment, and production industry to control the flow of chilled/hot medium.

DN65...DN100

DN125...DN150

Actuator Technical Data				
Power Supply		24VAC	220VAC	24VAC
Power	DN65 ~ DN100	4.5VA on load	8.5VA on load	5.5VA on load
	DN125 ~ DN150	10VA on load		11VA on load
Control Signal		3-point floating / electric on / off		DC0(2) ~ 10V DC4(0) ~ 20mA
Default Setting		----		Input 0 ~ 10V DC Feedback 0 ~ 10V DC Running Status DA
Torque		DN65 ~ DN100		>= 25 Nm
		DN125 ~ DN150		>= 65 Nm
Stroke Time(0~90^0)		120s (50Hz)		
Rotation Angle		90^0 <= Mechanical Limitation < 95^0		
Cable		0.5 ~ 1mm^2		
Material		Cover	Fire-retardent ABS engineering plastic	
		Chassis	Casting Aluminum Alloy	
		Gear	DN65 ~ DN100	POM, Steel
			DN125 ~ DN150	Brass, HPb59-1, Steel (40Cr, 45)
Temperature		Operating: -5 ~ +50^{0}C; Storage: -30 ~ +70^{0}C		
Protection Class		IP54		

Dimension (mm)

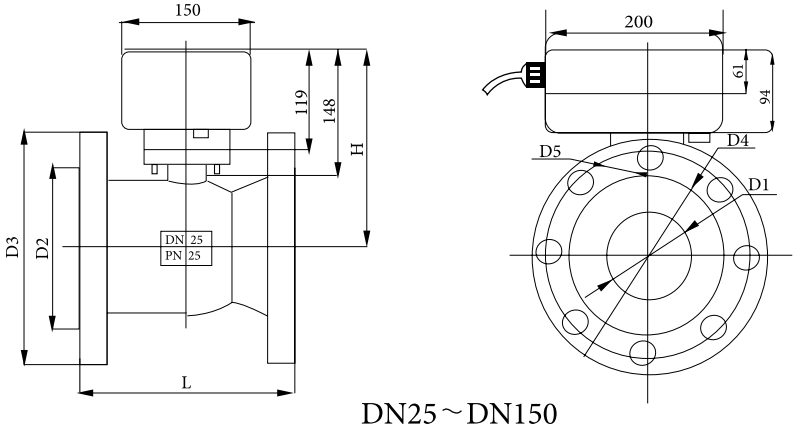


DN65 ~ DN100

Valve Technical Data	
Working Media	Chilled / hot water or <= 50% glycot
Media Temperature	2 ~ 94^{0}C
Rated Body Pressure	PN16 / PN25
Flow Characteristic	Equal Percentage
Leakage	Less than 0~0.01% Kv
Connection Type	Flanged
Closing-off Pressure	600kPa
Rotation Angle	90^0
Installation Level	Horizontal / Vertical

Material	
Valve Body	Casting Iron
Valve Ball	Stainless Steel
Valve Seat	PTFE
Valve Shaft	Stainless Steel
Seal	NBR

Size	Rated Body Pressure	Kv	Dimension(mm)						
			L	H	D1	D2	D3	D4	D5
DN65	PN16 (PN25)	64	190 (190)	216 (216)	82 (82)	120 (120)	185 (185)	145 (145)	18 (18)
DN80		102	190 (190)	216 (216)	82 (82)	136 (136)	200 (200)	160 (160)	18 (18)
DN100		163	230 (230)	226 (226)	102 (102)	156 (162)	220 (236)	180 (190)	18 (23)
DN125		260	254 (254)	232 (232)	125 (125)	188 (188)	250 (270)	210 (220)	18 (26)
DN150		416	267 (267)	250 (250)	154 (154)	210 (215)	285 (300)	240 (250)	22 (26)



DN25～DN150

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THE INTELLIGENT POINT OF BUILDINGS

NR Series Relays

The NR Series is available with SPDT or DPDT contacts rated up to 10A and driven by AC or DC coils. They are socket-mounted, and their small size saves space. They come with a mechanical indicator and LED.

SSR Solid State Relays

Three phase solid state relays, adapting ignition-proof engineering plastic cover, filled with EPOXY, screw thread connection, have the features of hard structure,vibration-proof capability high, input driving current small convenient to interface with terminals of computer and carious digital tele-control circuit.

RM Relay Modules

The RM comes in two models, the 4 gang and the 8 gang versions. The board features a cover for adding your own label, which slides in and out for making changes. The coils are very low power, requiring 30ma at 12VDC. The SPST relay is rated at 1A, 120VAC. Jumpers on each output can also be set to two modes: common ground and switched 24VAC or dry contact mode. Each relay has a LED, as well as status LEDS for the 24VAC and 24VAC fuse overload. Approvals: ULC

DB-A 2x35 Dimmable Ballast

- Universal input voltage(120-277VAC)
- Low harmonic distortion (THD<10%)
- High power factor (λ>0.98*)
- Standard DC0/1-10V control interface
- Dimming range from 1-100%
- Lamp start at 1% possible
- Defined Lamp friendly warm start within 1.5s with AC and 0.6s with DC
- Virtually eliminates lamp flicker
- Safe shuodown of defective lamps and at end of life
- Automatic restart after lamp replacement
- Operating frequency ~10-120kHz

DB-D 2x42 Dali Dimmable Ballast

- Universal input voltage(120-277VAC)
- Low harmonic distortion (THD<10%)
- High power factor (λ>0.98*)
- DALI Interface, Dimming range from 1-100%
- Lamp start at 1% possible
- Defined Lamp friendly warm start within 1.5s with AC and 0.6s with DC
- Automatic lamp recognition for optimum operation with standardized data acc. to IEC
- Push-DIM, dimming and switching via push-button with memory function
- Error feed back and programmable features in DALI mode, switching via the mains or with digital signal
- Dimming which is comfortable to the eye
- Full electronic lamp management and digital communication with ASIC and μC
- Constant light output independent of fluctuating supply voltage
- Safe shuodown of defective lamps and at end of life
- Automatic restart after lamp replacement

CT Current Transmitter

The CS Current Sensor is a solid state transducer for measuring the current in fans, pumps and other HVAC equipment. Select one of three ranges by moving a jumper on the device to operate over 10A, 20A and 50A. This sensor outputs 0-5V directly and requires no power supply.

- Self powered, no external power supply required.
- 1-5VDC output, connects directly to automation systems.
- One sensor for three ranges, jumper selected.
- Low cost, replaces digital status relays.

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THE INTELLIGENT POINT OF BUILDINGS

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