

## System 27 NOVA Modular Electronic Humidity Control System

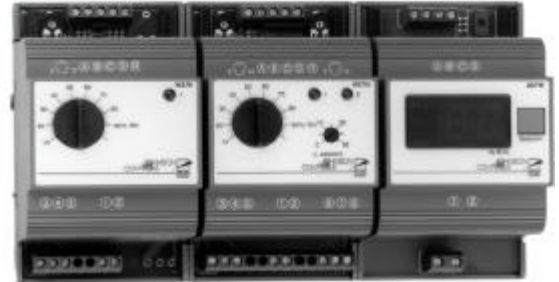
### Introduction

*System 27 NOVA is a family of modular electronic modules designed for a wide variety of control configurations in refrigeration, heating, ventilation, air-conditioning and other related fields.*

*The humidity control modules can be used as a stand alone device or in conjunction with other modules such as display modules, signal converter modules etc. to achieve a wide variety of single or multiple stage applications.*

*Typical applications are:*

- computer rooms;
- clean rooms;
- fruit storage/ripening;
- food processing;
- industrial processes.



**System 27 NOVA Modular  
 Humidity Controls**

### Description

The modular concept was specially designed to make control configuration easier and still offer the flexibility necessary to answer the many individual control requirements encountered today.

<b>Feature and Benefits</b>	
q <b>Modular design</b>	Provides the flexibility to realise the required control set up without redundancy and makes future expansion easy.
q <b>“Plug-in” quick connector wiring system</b>	Eliminates wiring between modules and reduces installation cost.
q <b>Adjustable differential and humidification/dehumidification setting</b>	Provides flexibility to match any combination of heating or cooling applications.
q <b>Interchangeable humidity transmitters with different housings</b>	Matches various applications.
q <b>Attractive DIN-rail mount housing</b>	Easy and quick to install.
q <b>Setpoint shift output function</b>	Modules can be used for “multiple setpoint” applications.

The System 27 NOVA family includes the following modules:

### W27 Humidity Control Modules



These one- or two-stage humidity control modules can be used as a low cost control for stand alone applications or, when connected in parallel, for multistage applications. The control output(s) is a single-pole, double-throw (SPDT) relay with LED indication. It features humidification and dehumidification modes of operation and an adjustable differential.

### D27W Humidity Display Modules



A display connected to a humidity control module gives a digital indication of the measured humidity or setpoint. It is also possible to connect a sensor directly to the D27W (the sensor is powered by the D27W).

The display can be connected to a humidity control module very easy by using the quick connector system.

### Y27M Signal Converter



This module converts a voltage input signal to a standardised output signal of 0 to 10 Vdc or 4 to 20 mA. The input signal can either be obtained from a humidity sensor or a humidity control module. The signal converter can be used for those applications where an analogue output is required. Such as; to a motor, motor actuated valve, recorder etc.

### HT-9000 Humidity Sensor



Sensors are available for room, duct or build-in applications. Please refer to the HT-9000 humidity sensor bulletin.

### Note

The System 27 modules are intended to control equipment under normal operating conditions. Where failure or malfunction of the modules could lead to an abnormal operating condition that could cause personal injury or damage to the equipment or other property, other devices (limit or safety controls) or systems (alarm or supervisory systems) intended to warn of or protect against failure or malfunction of the modules must be incorporated into and maintained as part of the control system.

### Application examples

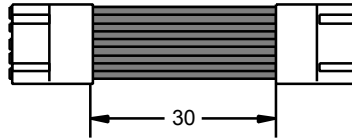
At page 6 you will find some applications examples. For more detailed information about wiring and adjustment reference should be made to the installation sheets.

### Repair and Replacement

Repair is not possible. In case of an improperly functioning control, please check with your nearest supplier.

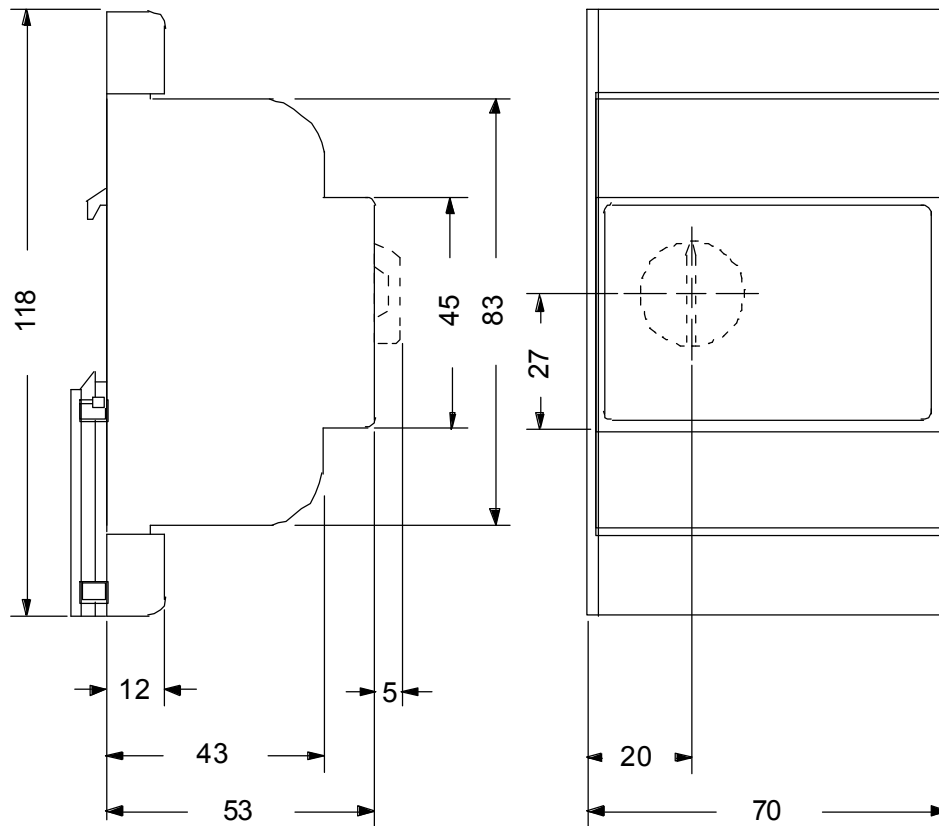
When contacting the supplier for a replacement you should state the type-model number of the control. This number can be found on the dataplate.

## Accessories dim. in mm



**Fig. 1**  
**WRE027N600**  
Quick Connector for connecting System 27 NOVA modules.

## Dimensions (mm)



**Fig. 2**  
**System 27 NOVA Modules**

## Type Number Selection Table

### W27 Humidity Control Modules

#### One Stage Humidistat

Order number	Power supply	Setpoint range	Additional
W27N11	24 V ac/dc	10 to 100% R.H.	* Mode: field adjustable * Differential: 2 to 10% R.H. * SPDT contact 10(5)A 250 V ac * Setpoint shift: 0 to 20% R.H.
W27N21	230 V ac		

#### Two Stage Humidistat

Order number	Power supply	Setpoint range	Additional features
W27N12	24 V ac/dc	10 to 100% R.H.	* Mode: field adjustable * Differential: 2 to 10% R.H. * 2x SPDT contact 10(5)A 250V ac * Setpoint shift: 0 to 20% R.H.
W27N22	230 V ac		

#### Humidity Display Modules

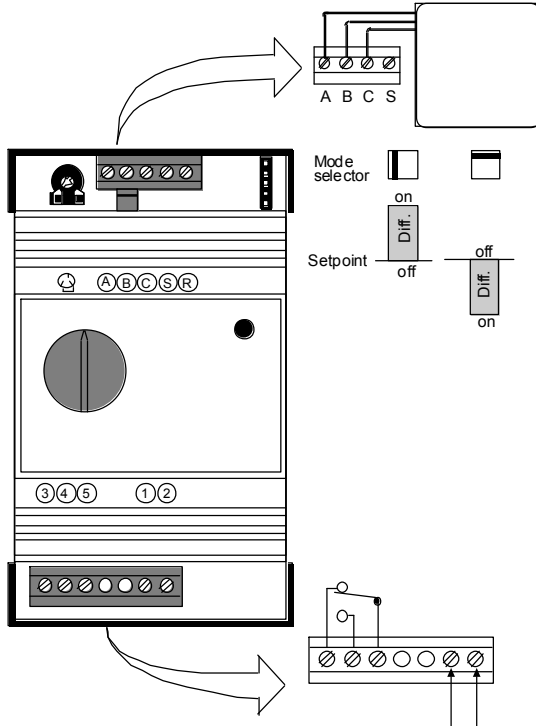
Order number	Power supply	Additional features
D27W1N4	24 V ac	* Can be used as stand alone or in conjunction with a humidity control module * Display range: 0 to 100% R.H
D27W2N4	230 V ac	

#### Y27M Signal Converter

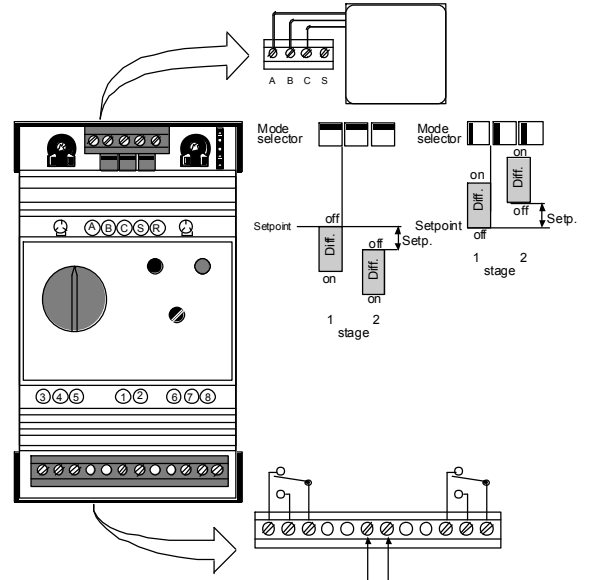
Order number	Power supply	Setpoint range (V)	Span range (V)
Y27M1	24 V ac	0 to 10	0 to 10
Y27M2	230 V ac	0 to 10	0 to 10

# Wiring & Adjustments

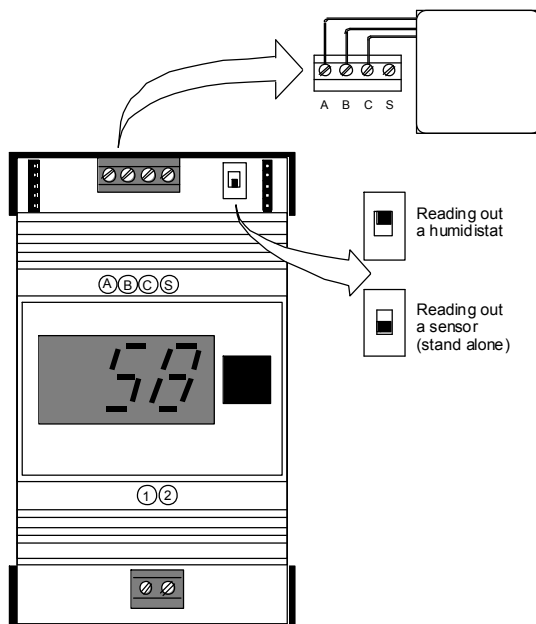
## One-stage Humidistat W27Nx1



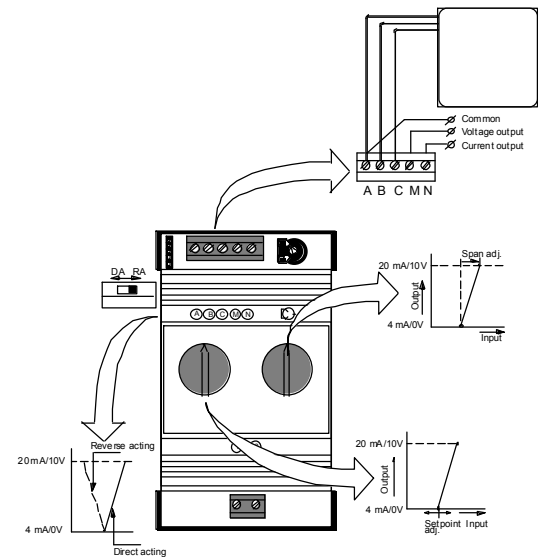
## Two-stage Humidistat W27Nx2



## Humidity/Display module D27WxN4

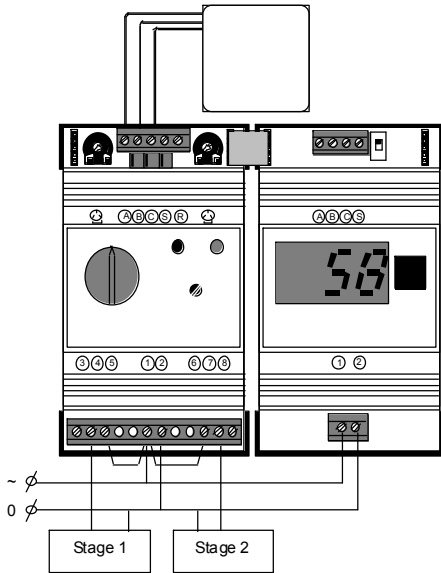


## Signal Converter Module Y27Mx

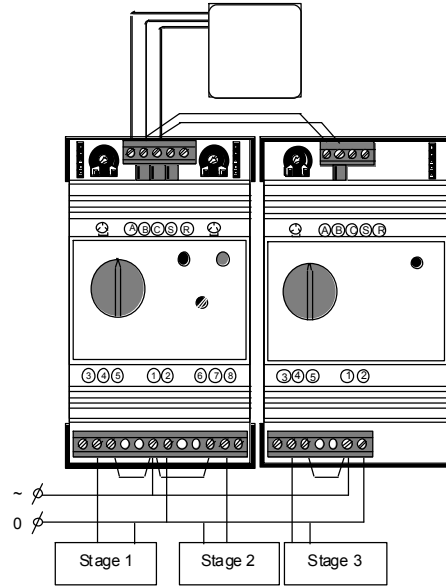


# Applications

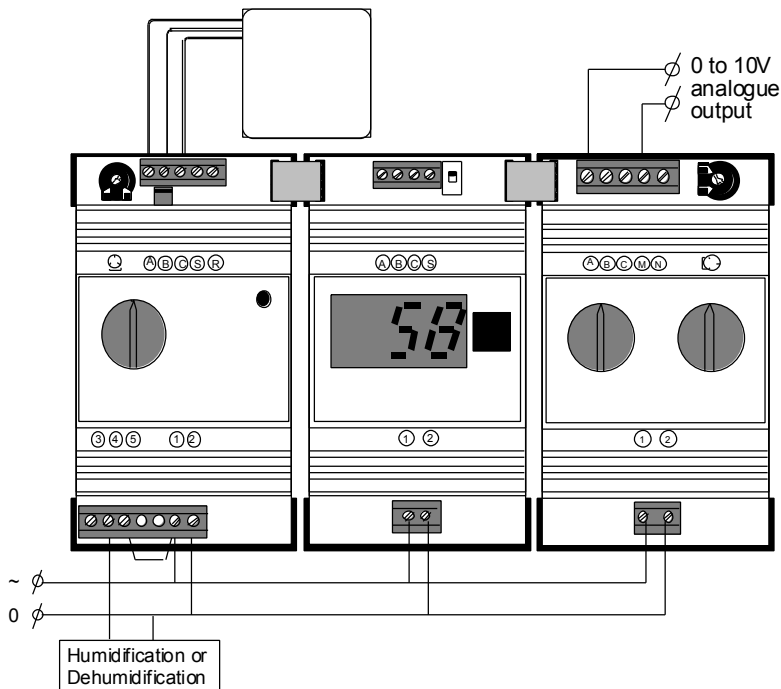
### Two stage humidity control with read-out



### Three stage humidity control



### One stage humidity control with read-out and analogue out-put



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# Notes

## Specifications

### General System 27 NOVA

<b>Output relay rating</b>	SPDT 10(5)A 250 V ac 10 A 30 V dc
<b>Operating ambient temperature</b>	-10 to +50 °C
<b>Storage temperature</b>	-40 to +70 °C
<b>Operating (storage) R.H.</b>	10 to 90 % R.H. (non condensing)
<b>Terminals</b>	screw type max. wire thickness 2,5 mm <sup>2</sup>
<b>Power supply</b>	230 V ac +10% / -15% ; 50/60 Hz 24 V ac/dc +10% / -15% ; 50/60 Hz

### Additional specification for display modules

<b>Power supply</b>	230 V ac +10% / -15% ; 50/60 Hz 24 V ac +10% / -15% ; 50/60 Hz
<b>Resolution</b>	1% R.H.
<b>Accuracy</b>	± 2% R.H.

### Signal converter

<b>Power supply</b>	230 V ac +10% / -15% ; 50/60 Hz 24 V ac +10% / -15% ; 50/60 Hz
<b>Output load</b>	voltage output Rmin = 1 k Ω current output Rmax = 500 Ω

*The performance specifications are nominal and conform to acceptable industry standards. For applications at conditions beyond these specifications, consult the local Johnson Controls office or representative. Johnson Controls shall not be liable for damages resulting from misapplication or misuse of its products.*



#### Johnson Controls International, Inc.

Headquarters: Milwaukee, WI, USA  
 European Headquarters: Westendhof 8, 45143 Essen, Germany  
 European Factories: Lomagna (Italy), Leeuwarden (The Netherlands) and Essen (Germany)  
 Branch Offices: Principal European Cities.

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