TI-N

Room thermostat

TI-N is a wall mounted room thermostat for controling in HVAC systems. The thermostat can control fans, cooling units, electric heaters fans etc.

* Change-over contact, 10A 250 V AC
* Cooling or heating function
* Protection class IP30
* Temperature range 5...30°C
* Setting-range can be mechanically limited
* Hysteresis 0.6 K

Function

TI-N is an electromechanical thermostat for room mounting. The thermostat contains a pair of gas-filled bellows with a stainless steel membrane which reacts to a change in temperature by creating a movement which is transmitted to the switch. The thermostat can control a heating or cooling function.

Setpoint
The thermostat has a temperature range of 5°C to 30°C. If required the range can be limited by means of mechanical endstops behind the setting knob.

Mounting
The thermostat has mounting holes of cc 60mm and can be mounted on a standard wallbox.

Technical data

Ambient temperature	0...50°C
Storage temperature	-40...+50°C
Ambient humidity	Max 90% RH
Form of protection	IP30
CE	This product conforms with the LVD standards IEC 669-1 and carries the CE mark

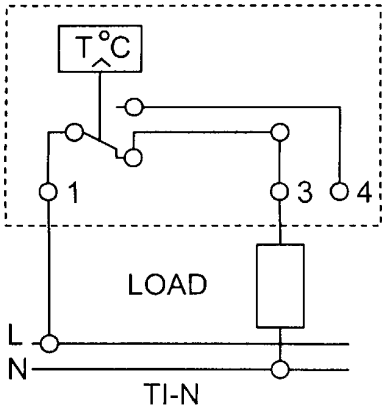
Output

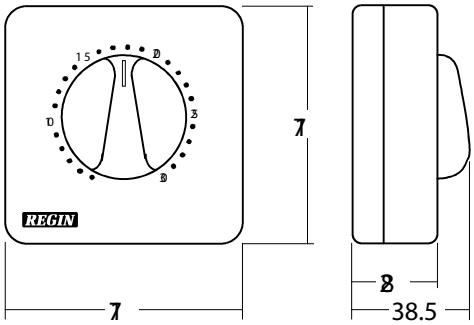
Relay	One changeover contact, 10 (2,5) A 250 V AC

Setting

Setpoint	5...30°C, mechanically limited
Hysteresis	0,6K, fixed

Wiring and dimensions





Terminal 1	250 V in
Terminal 2	Heating out
Terminal 3	Cooling out

N.B. TI-N can be used for either heating or cooling, not both at the same time.

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TM1-50

Electronic room thermostat

TM1-50 is a one-step electronic room thermostat for controlling heating or cooling.

- **Supply voltage 230 V AC**
- **Change-over contact for control of heating or cooling**
- **Contact rating 16 A, 230 V**
- **Input for external sensor**
- **Settable hysteresis 1...10 K**
- **Setpoint knob (20...50°C) can be locked**

TM1-50 is an electronic room thermostat for wall mounting. The thermostat has settable hysteresis and a change-over relay output. It is connected to supply voltage 230 V AC.

External sensor

An external sensor can be connected if the thermostat cannot be mounted at a representative location. Contact Regin for choice of sensor.

Setpoint

The setpoint is set by means of the knob on the side of the thermostat. In order to eliminate the risk of tampering, the setpoint knob can be locked by means of a locking screw under the cover.

Settable hysterisis

The thermostat is made for heating and cooling applications and switches ON at the setpoint value. The output switches OFF when the room temperature drops to the temperature level of the setpoint minus the hysterisis. For example, if the setpoint value is 35°C and the hysteresis is 5 K, the relay switches on at 35°C and off at 30°C.

Mounting

The cover of the thermostat is held by a snap catch which is opened by depressing the locking torque in the bottom edge using a screwdriver. The screw pockets have a c:c of 60 mm to enable mounting over an inset wallbox.

Applications

TM1-50 is suitable for controlling cooling coils, fan heaters, fans, DX-cooling, solenoid valves, fan coils etc., and especially for control of ventilation fans in lift motor rooms and transformer rooms where adjustable hysterisis is often specified.

Technical data

Supply voltage	230 V AC +/-15%, 50...60 Hz
Power consumption	1 W
Ambient temperature	0...50°C
Storage temperature	-40...+50°C
Ambient humidity	Max 90% RH
Protection class	IP20
CE	This product conforms with the requirements of European EMC standards CENELEC EN 61000-6-1 and EN 61000-6-3, European LVD standard IEC 60 730-2 9 and carries the CE mark.

Input

External sensor	Only for Regin's NTC-sensors. Contact Regin for choice of sensor.

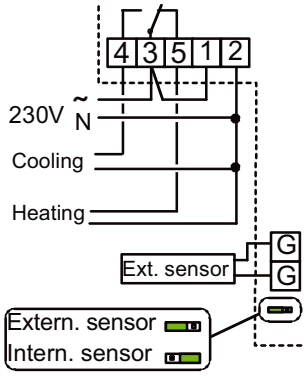
Output

Relay	One change-over contact 230 V AC, 16 A, potential free

Settings

Setpoint	20...50°C
Hysteresis	1...10 K

Wiring



Dimensions

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Germany: +49 30 77 99 40

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THE CHALLENGER IN BUILDING AUTOMATION

Project References in Asia.

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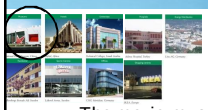


The Movie Museum in Beijing

The movie museum total floor area is more than 30 000m2. In one building, it provides a central collection of film expositions, displays and a cultural exchange center. Movie fans can participate in actual film practice, understand the latest film technology and look back on the film history. The building is the first Beijing landmark in the movie city.

- Air conditioning and ventilation system
- 2 100 hardware points
- About 60 EXOcompact and 10 EXOflex
- Local bus implemented for Carel

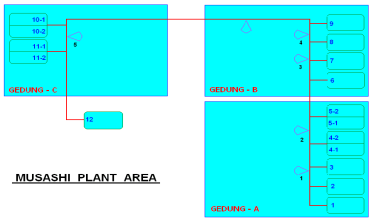
REGIN

THE CHALLENGER IN BUILDING AUTOMATION

- **Musashi Auto Part in Indonesia – Air Compressor system**

In Jakarta – Musashi Plant installed Regin system in controlling 12 units of Air Compressor Systems in 3 buildings. Rotation Time Schedules are required for this project.

- EXO4 as central system
- TCP/IP
- EXOflex and EXOcompact in combination
- About 350 I/O
- 2 Panel PC install – main and work PC



MUSASHI PLANT AREA

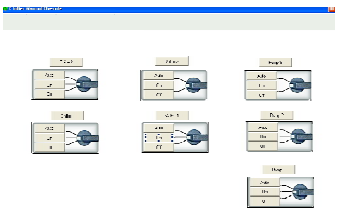
REGIN

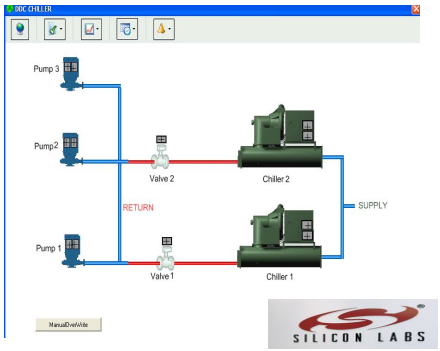
THE CHALLENGER IN BUILDING AUTOMATION

- **SILICON LABS – Production of IC component in Singapore**

In Singapore – Silicon Labs installed a Regin system to control AHU and Chiller Sequencing. Alarm handling for monitoring using HTRTN humidity and tempearture transmitter and doing a weekly schedule rotation on the 3 chillers operation using EXOcompact.

- EXOcompact installation
- EXOreport install
- EXO4 Scada Install





SILICON LABS

REGIN

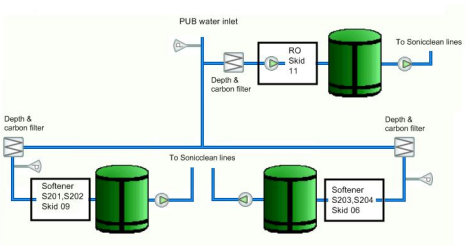
THE CHALLENGER IN BUILDING AUTOMATION

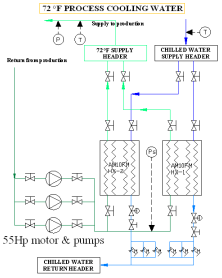
BD - Becton & Dickinson – pharmaceutical process plant in Singapore

In Singapore BD installed a Regin system to make both BMS and process control. Alarm handling for process cooling water, tank level monitoring using DTK pressure transmitters and also in the same system controlling AHU using EXOcompact.

- 3 large EXOflex, 20 EXOcompact and EXO4
- About 1000 I/O hardware points
- Panel PC for SCADA installed inside the process environment.
- Workstation at Alarm Centre manned 24h

Process Water Treatment Skids (T&C)





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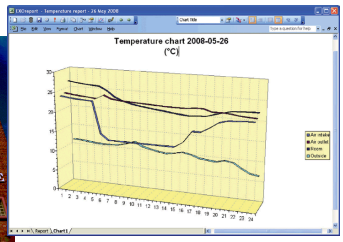
THE CHALLENGER IN BUILDING AUTOMATION

• NTU – BLK N3, Museum NS1 B1-15b

In Singapore Nanyang Technological University install Regin system to control humidity and temperature requirement in the Museum.Humidity, temperature etc is logged and stored in EXO4, where EXOreport brings the data into monthly reports in Excel.

- EXOCompact install
- EXO4 as Scada
- EXOreport for reporting in Excel



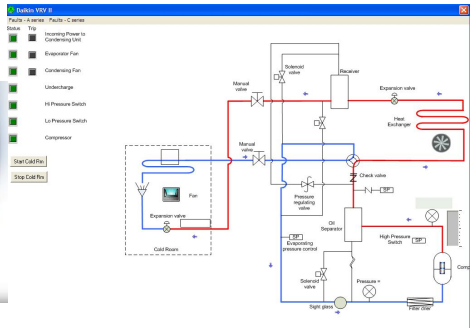
REGIN

THE CHALLENGER IN BUILDING AUTOMATION

In Singapore ITE – Institute of Technical Education

They had Regin's Education training kits installed for the students in the campus. The software and hardware give simulation on the VRV system, alarm handling and the control logic of the application.

- EXOcompact's Education training kits I installed
- Campus Notebook for SCADA installed



REGIN

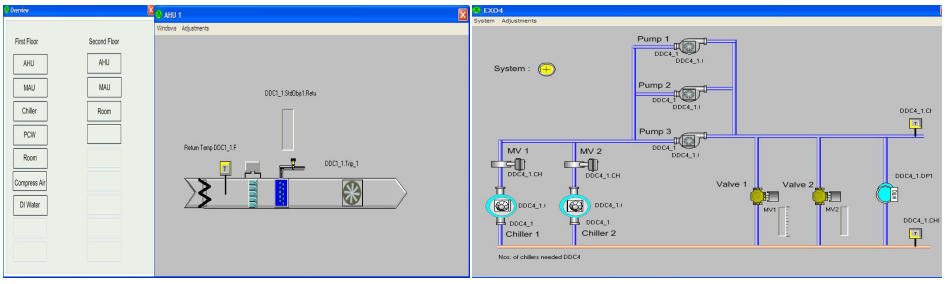
THE CHALLENGER IN BUILDING AUTOMATION

EEMS SINGAPORE – wafer foundries and fabless semiconductor companies

In Singapore EEMS install Regin's system to Control AHU and Chiller using EXOcompact.

All products delivered from Regin. A traditional BMS installation with AHU, Chillers etc.

- 10 EXOcompact and EXO4
- About 500 I/O hardware points
- Panel PC for SCADA installed inside the process environment.
- Workstation at Alarm Centre manned 24h



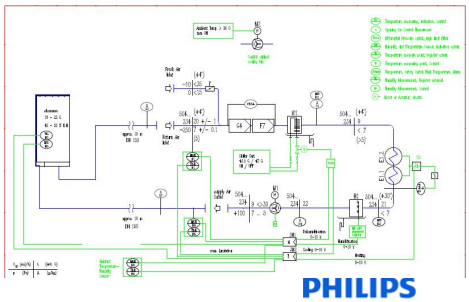
REGIN

THE CHALLENGER IN BUILDING AUTOMATION

- **PHILIPS SINGAPORE (No 21 Tuas Ave 3) - Lifestyle Domestic Appliances factory**

In Philips Singapore install Regin DDC System to control temperature, humidity and dehumidify application in the cold rooms and hot rooms of the production centre. Humidity, temperature etc is logged and stored.

- EXOCompact Install
- EXOreport Install
- EXO4 Scada Install



PHILIPS
sense and simplicity

REGIN

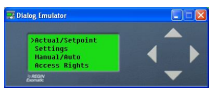
THE CHALLENGER IN BUILDING AUTOMATION

Quang Minh – pharmaceutical BMS in Vietnam /

150 Pharmaceutical Project

In Vietnam, installed EXOcompact system to take care of Air handling in the process plant. BAS in pharmaceutical factories needs to be at a high level due to process demands and at the same time we need to be environmental friendly.

- EXOcompact installation
- About 200 I/O hardware points
- Process plant BAS
- Local display MMI



WATTS
IND. IBERICA

EC DECLARATION OF CONFORMITY

We,

Watts Ind. Ibérica, S.A.
Pol. Industrial Cros. Nave Nº3
C/ Julio Galve Brusson, s/n
08918 Badalona (SPAIN)

declare below our only responsibility that the following products:

Code:	*04.03.202IG*	= TI - N
Reference:	*TI-NL "REGIN"*	
Type:	*Ambient thermostat Belux*	
Code:	*04.07.615IG*	= TI - FCU
Reference:	*FAN COMFORT "REGIN"*	
Type:	*Fan Coil thermostat Ecolux*	

have been manufactured in accordance with the below directives:

73/23/EEC Low Voltage Directive and its modification 93/68/EEC
89/336/EEC Electromagnetic Compatibility Directive and its modifications 92/31/EEC and 93/68/EEC

following the below normatives:

EN60730-1 and EN60730-2-9
with Test Report EH660

EN50081-1, EN55014 and 55104
with Test Report 96002759

Badalona, April 16th 2003

Jose Maqueda
Technical Manager