D 411
09.11.05 LB

UNIVERSAL CONTROLLER

C ←BUS

DRU 314 C2 Eng.

- **Universal controller**
- **Communication systems :**
  – C-Bus telemanagement
- **Power supply 24 V~ ; DIN rail mounting**

CE

1. APPLICATION

DRU 314 controller can be used to control :

- a physical quantity (pressure, humidity, etc) measured by an active detector 0...10 V– (B1)

or

- temperature (0...99 °C) measured by a passive detector NTC 10 KΩ... (B2) with PI command:

with PI control mode:

- progressive 0...10 V–

or

- three-wire modulating

or

- On-Off in two stages for two equal loads

or

- On-Off in three stages for two unequal loads

DRU 314 can be included in a telemanagement system via the C-Bus connection.

2. FUNCTIONS

The principal functions of DRU 314 are :

- fixed point control
- 2 On-Off limit controls of the outlet load or of the measurement (only with progressive control 0...10 V–)
- adjustment of desired value by means of remote set point adjuster

3. DETECTORS AND ACCESSORIES

No.	Description	Type	Measurement range	Code	Data sheet
1	Immersion temperature detector	**SIH 010**	0… 100 °C	B2	N 140
	Ambient temperature detector	**SAB 010**	0… 40 °C	B2	N 111
	Detector for air duct relative humidity (for pools)	**SUT 714**	10… 90 %	B1.1	N 222
	Detector for air duct relative humidity	**SUR 704**	10… 90 %	B1.1	N 221
	Detector for ambient relative humidity	**SAU 914**	10… 90 %	B1.1	N 227
	Absolute pressure detector for liquids or steam	**SPW 101**	0… 1 bar	B1.3	N 410
	Absolute pressure detector for liquids or steam	**SPW 102**	0… 2.5 bar	B1.3	N 410
	Absolute pressure detector for liquids or steam	**SPW 106**	0… 6 bar	B1.3	N 410
	Absolute pressure detector for liquids or steam	**SPW 116**	0… 16 bar	B1.3	N 410
	Differential pressure detector for liquids or steam	**SDW 101**	0… 1 bar	B1.3	N 420
	Differential pressure detector for liquids or steam	**SDW 102**	0… 2.5 bar	B1.3	N 420
	Differential pressure detector for liquids or steam	**SDW 106**	0… 6 bar	B1.3	N 420
	Differential pressure detector for air	**SDA 701**	0… 1 mbar	B1.3	N 430
	Differential pressure detector for air	**SDA 703**	0… 3 mbar	B1.3	N 430
	Differential pressure detector for air	**SDA 705**	0… 5 mbar	B1.3	N 430
	Differential pressure detector for air	**SDA 730**	0… 30 mbar	B1.3	N 430
1	Set-point adjuster:	**CDB 100**	–	Rt	N 710
	a) with temperature detectors (B2)		± 5°C		
	b) with active detectors (B1): 1 place after decimal point		± 5		
	2 places after decimal point		± 0.5		

1 mbar = 10 mmWG = 100 Pa

4. TECHNICAL DATA

• Electrical

Power supply	24 V~ ± 10%
Frequency	50 … 60 Hz
Consumption	3 VA
Protection	IP40
Active detector internal power supply	12 V– / 5 mA
Radio disturbances	VDE0875/0871
Vibration test	with 2g (DIN 40 046)
Voltage-free output contacts	
maximum switching voltage	250 V~
maximum switching current	5 (1) A
Construction standards	Italian Electrotech. Committee (CEI)
Data storage	5 years
Software	class A

• Mechanical

Case	DIN 3E module
Installation	DIN 35 rail
Materials:	
base	NYLON
cover	ABS
Ambient temperature:	
operation	0 … 45 °C
storage	– 25 … + 60 °C
Ambient humidity	class F DIN 40040
Weight	0.27 kg

• Measrement ranges

Temperature	0…99.9 °C
Absolute pressure liquids or steam	0 … 16 bar
Differential pressure liquids	0 … 6 bar
Differential pressure air	0 … 30 mbar
Relative humidity	0 … 100 %

• Setting Ranges

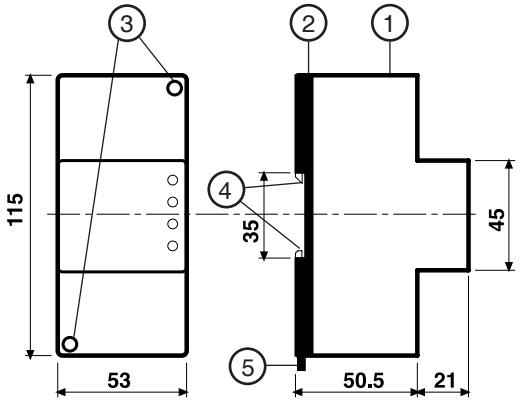
Output signal with PI control action:
– **Progressive 0…10 V–**
– Three-wire modulating
– On-Off in two stages (1; 1+2)
– On-Off in three stages (1; 2; 1+2)

Type of action outputs: **– Normal** / – Inverted

Modulating output data:	
actuator run time	60 - **90** - 120 - 180 s
Proportional Band	± 0.5…**2**…99 K
Integral Time	0…**10**…255 min.
On-Off stage output data:	
On-Off differential	0.5…**2**…99 K
Input signal insensitive zone	**0**...50.0 K

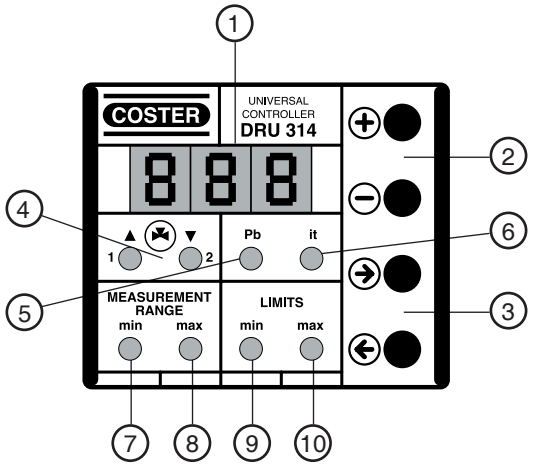
In presence of disturbances the output controls of the controller may change status but will then be restored automatically

5. OVERALL DIMENSIONS



1 – Protective cover for electronic components
2 – Base with transformer, relay and terminal block
3 – Screw for securing cover and base
4 – DIN rail securing elements
5 – DIN rail release lever

6. FACIA



1 – Three-digit numerical display
2 – + and – keys
3 – ← and → keys
4 – Output LEDs :
- Opens/Closes
- 1st / 2nd stage
- min / max limit

Display data LEDs:
5 – Proportional band
6 – Integral time
7 – Minimum measurement range value
8 – Maximum measurement range value
9 – Minimum limit threshold
10 – Maximum limit threshold

7. SITING

The controller must be installed in a dry location that respects the ambient conditions given under “Technical Data”.
It must be connected to an electrical installation constructed according to standard IEC 79-14 (CEI EN 60079-14) and sited in a non-dangerous area meeting standard IEC 79-10 (CEI EN 60079-14): that is, an area in which there is no potentially explosive quantity of gas requiring special measures for the construction, installation and use of electrical plant.
It can be installed on DIN rail and housed in a DIN modular enclosure.

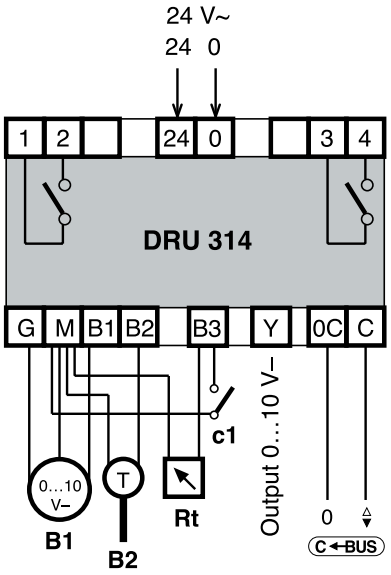
8. WIRING

Proceed as follows :
• Separate base and cover (remove securing screws)
• Mount base on DIN rail and check that securing elements (5.4) hold it firmly in place.
• Carry out wiring according to the diagram and in observance of the relevant regulations in force, and using cables of:
– 1.5 mm² for power and relay control outputs
– 1 mm² for detector and set-point adjuster
– 1 mm² for the C-Bus. For length limits, see data sheet T 021
• Switch on power (24V~) and check voltage across terminals 24 and 0
• Switch off power, replace cover on base and secure it with the two screws supplied (5.3).

Warning!

The regulator must be energised using a dedicated transformer 230/24 V~. Do not use the operating voltage of the auxiliary circuits in the electrical panel should these be available.
You are advised not to insert more than two cables in a single teminal of the controller. If necessary use external junction boxes.

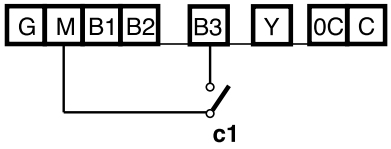
9. WIRING DIAGRAMS



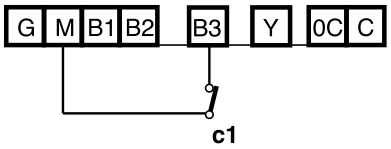
B1 – Active detector 0...10 V– (as an alternative to B2)
B2 – Temperature detector NTC 10 kΩ (as an alternative to B1)
Rt – Set-point adjuster

c1 – On-Off remote control

1) input switch c1 open = controller ON

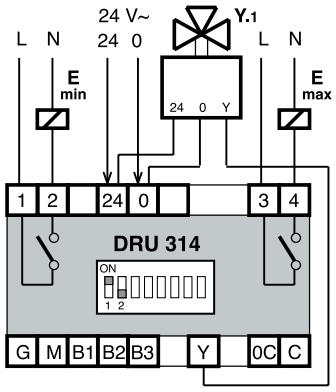


2) input switch c1 closed = controller OFF; controller OFF
control outputs to zero

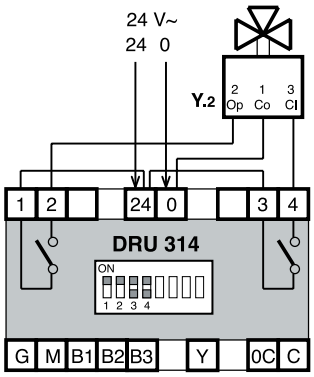


9.1 Examples of control outputs

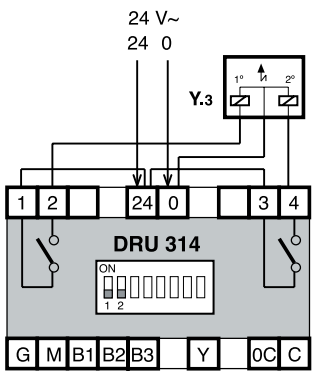
Progressive 0…10 V–



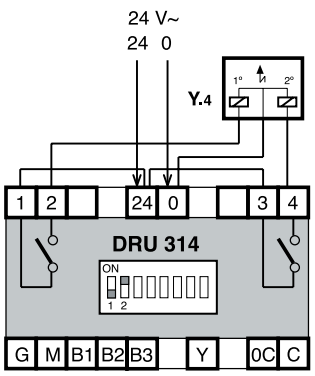
Three-wire modulating



Two stage On-Off (1 ; 1+2)



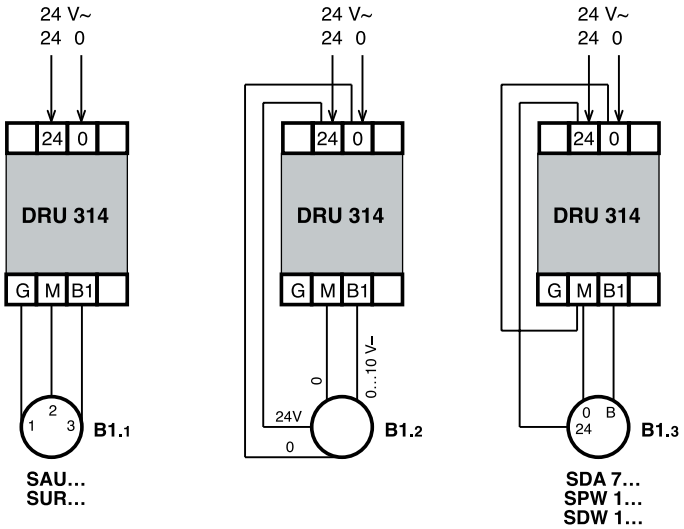
Three-stage On-Off (1 ; 2 ; 1+2)



Y.1 – Invertor or valve with control 0…10 V–
Y.2 – Three-wire modulating actuator
Y.3 – Two-stage load (two equal charges)
Y.4 – Three-stage load (two uneven charges)

Emin – On-Off control lower limit range or output load
Emax – On-Off control upper limit range or output load

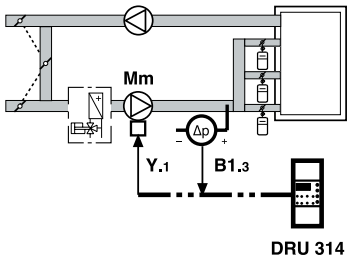
9.2 Examples of active detectors wiring

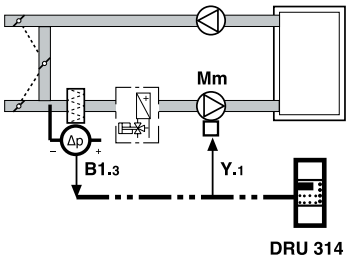


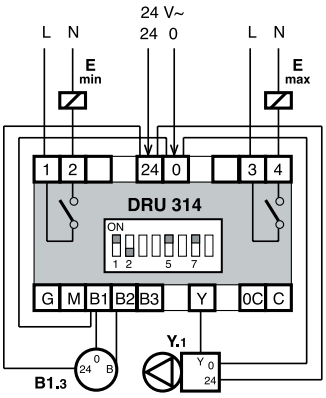
B1.1 – Active detector 0...10 V– with internal power 12 V– / 5mA
(eg. : SAU… ; SUR…)
B1.2 – Active detector 0...10 V– with external power 24 V~
B1.3 – Active detector 0...10 V– with shared power 24 V~
(eg. : SDA 7… ; SPW 1… ; SDW 1…)

10. EXAMPLES OF INSTALLATION

10.1 Flow pressure control or filter depression at fixed point via progressive fan speed control

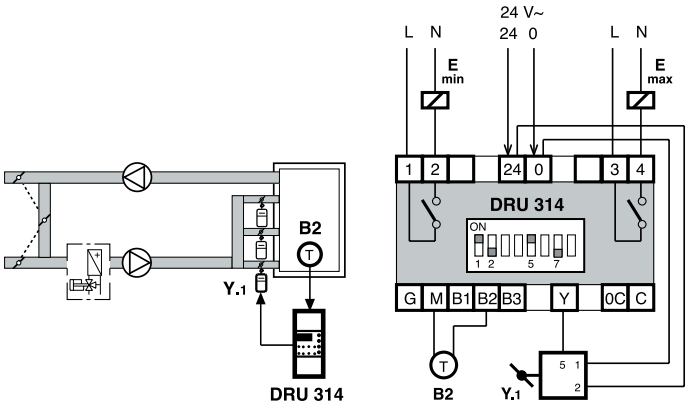






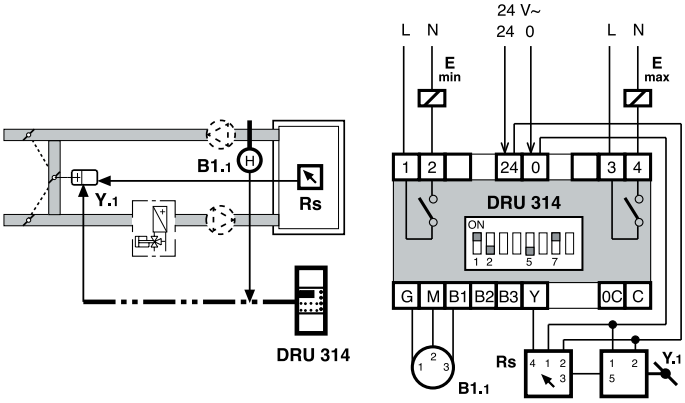
B1.3 – Differential air pressure detector SDA 7...
Y.1 – Invertor
Emin – On-Off control lower limit range or output load
Emax – On-Off control upper limit range or output load

10.2 Ambient temperature control via progressive air dampers control of heating/cooling coils



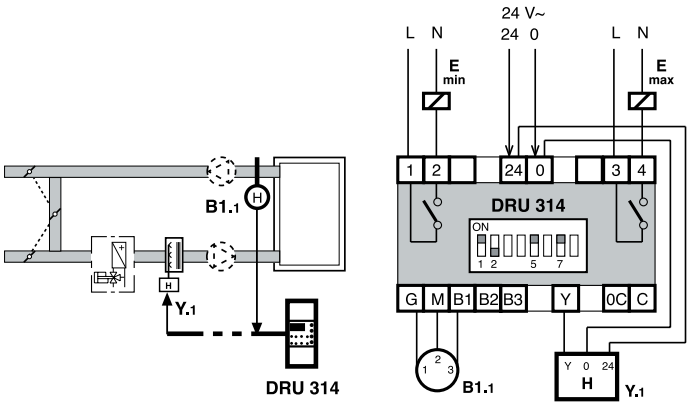
B2 – Ambient temperature detector SAB 010
Y.1 – Invertor
Emin – On-Off switch for lower limit
Emax – On-Off switch for upper limit

10.3 Dehumidification control via progressive air dampers control external air



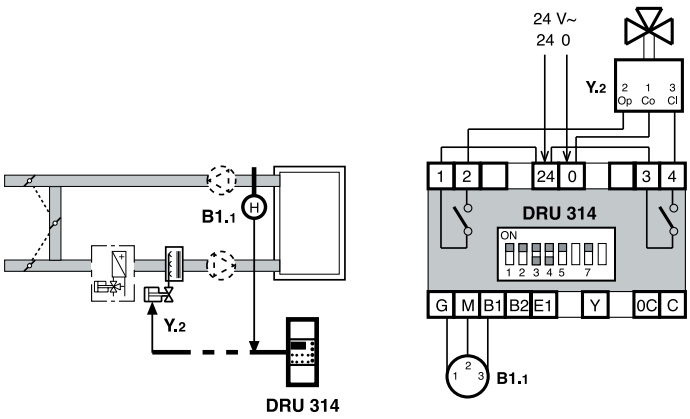
B1.1 – Humidity detector SAU...; SUR ...
Y.1 – Air-dampers actuator
Rs – Positioner minimum external air
Emin – On-Off switch for lower limit
Emax – On-Off switch for upper limit

10.4 Humidification control via progressive control of steam humidifier



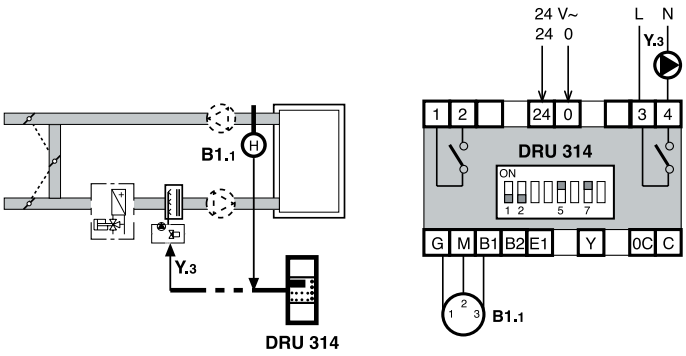
B1.1 – Humidity detector SAU... ; SUR ...
Y.1 – Steam humidifier

10.5 Humidification control via three-wire modulating control of steam valve



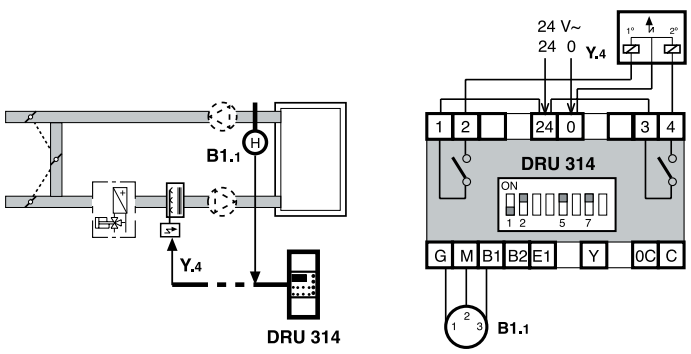
B1.1 – Humidity detector SAU... ; SUR ...
Y.2 – Three-wire modulating steam valve

10.6 Humidification control via On-Off switch for adiabatic humidifier (pump or solenoid valve)



B1.1 – Humidity detector SAU...; SUR...
Y.3 – Pump or solenoid valve humidifier

10.7 Humidification control via three-stage On-Off switch for steam humidifier (two uneven charges)



B1.1 – Humidity detector SAU... ; SUR ...
Y.4 – Steam humidifier resistances

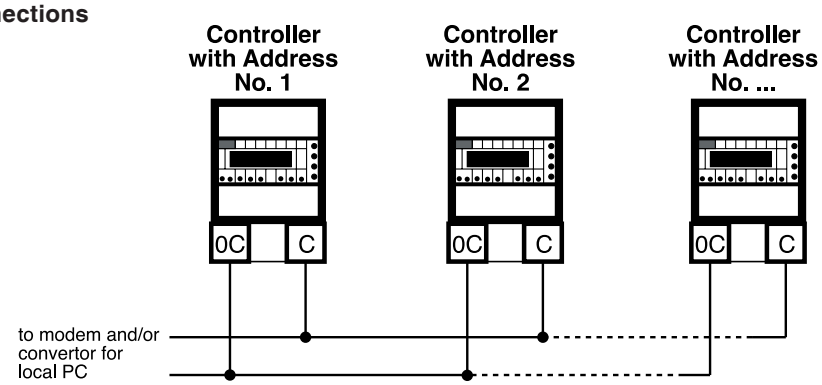
11. COMMUNICATION

11.1 C-Bus communication for telemanagement (for detailed information please see data sheet T 021)

Via C-Bus output DRU 314 can be telemanaged (two-way transmission of data) using one or more local PCs and /or a central PC via telephone landlines.
From the PC(s) you can:

- see and/or modify the DRU 314 setting data
- read the value measured by the detector
- status of the control outputs.

11.2 C-Bus electrical connections



11.3 Telemanagement address

In telemanagement, in order for the controllers to be identified by the central PC and/or by the local PCs, they must be assigned progressive address numbers:

– Press → key until all the LEDs ash
– Use + or – keys to enter the address
– Press at the same time → and ← keys to return to the first page.

To cancel the values, keep + and – keys pressed at the same time
If the telemanagement password has been enabled (from PC), it is possible to disable it by switching on the PC and keeping the → and ← keys pressed at the same time until on the display appears “dic”.
In this way it is possible to connect directly to a PC and manage the controller without knowing the password.

12. OPERATION

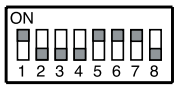
DRU 314 is a microprocessor - based digital controller for controlling at a fixed point a physical variable determinad by the type of detector used: active (0...10 V–) or passive (NTC 10KΩ).
With control output having PI control mode:

- **Progressive 0...10 V–**
- **Three-wire modulating**
- **On-Off in 1 or 2 stages** (2 equal electric charges: 1; 1+2)
- **On-Off in 3 stages** (2 unequal electric charges: 1; 2; 1+2)

With action:

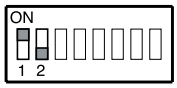
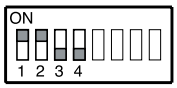
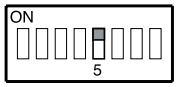
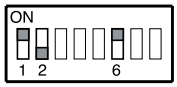
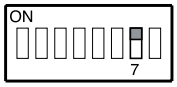
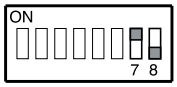
- **Normal**
- **Inverted**

12.1 Configuration



It is necessary to configure the controller according to its use by means of the DIP switches in the base. The dark parts show the position of the dipswitches. (white on the actual controller)

Default configurations are written in bold charaters.

DIP switches	Function	Description	Position of dipswitches
	Type control output	Three-wire modulating **Progressive 0 ... 10 V –** On - Off in 1 or 2 stages (1 ; 1+2) On - Off in 3 stages (1 ; 2 ; 1+2)	1 On and 2 On **1 On and 2 Off** 1 Off and 2 Off 1 Off and 2 On
	Valve actuator run time (only if 1 and 2 are On)	60 seconds **90 seconds** 120 seconds 180 seconds	3 On and 4 On **3 Off and 4 Off** 3 On and 4 Off 3 Off and 4 On
	Output action	**Normal**: increase measured value → decrease output load (eg. : heating) **Inverted** : increase measured value → increase output load (eg. : summer air-conditioning)	**5 On** 5 Off
	Action limits (Only with progressive output - 1 On and 2 Off)	**For measurement range** For output load	**6 On** 6 Off
	Type of detector connected	**Active detector 0 ... 10 V – (B1)** Detector NTC 10 KΩ (B2)	**7 On** 7 Off
	Position decimal point on display (only with active detector B1 - 7 On)	Two digits after point (e.g. 0.00) **One digit after point (e.g. : 00.0)**	8 On **8 Off**

12.2 Control output

The controller compares the desired value **X** with the value **x** of the magnitude measured by detector B and calculates the load value of output **Y** according to the difference and the parameters set.

• 3-wire modulating output with PI control mode

Output 1-2 : valve opening; Output 3-4 : valve closing

Setting dipswitches :

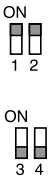
– Modulating Output : 1 and 2 On

– Actuator run time: :

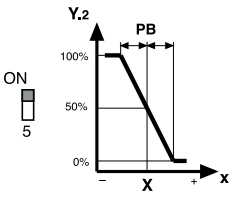
3 On and 4 On = 60 s
3 Off and 4 Off = 90 s
3 On and 4 Off = 120 s
3 Off and 4 On = 180 s

– Output action :

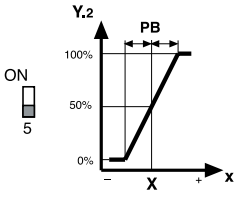
5 On = Normal
5 Off = Invertited



Normal action



Inverted action



• Progressive output with PI control mode

Output Y : signal 0…10 V–

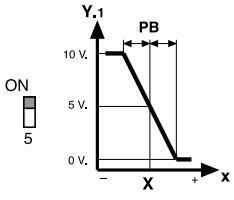
Setting dipswitches :

– Progressive output : 1 On and 2 Off

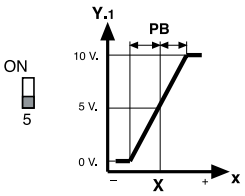
– Output action :

5 On = Normal
5 Off = Inverted

Normal action



Inverted action



• On-Off output in one or two stages with PI specification

Relay 1 : 1st stage ; Relay 1 + 2 : 2nd stage

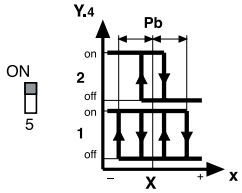
Setting dipswitches:

– On-Off output in 1 or 2 stages : 1 and 2 Off

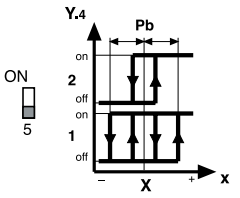
– Output action :

5 On = Normal
5 Off = Inverted

Normal action



Inverted action



• To change the On-Off PI mode into On-Off differential, set the Integral Time value to 0

• 3-stage On-Off output with PI control mode

Relay 1 : 1st stage ; Relay 2 : 2nd stage ; Relay 1 + 2 : 3rd stage

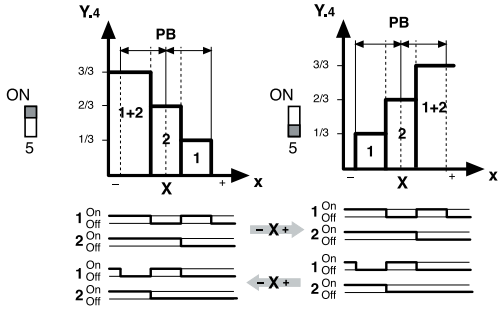
Setting dipswitches :

– On-Off output in three stages: 1 Off and 2 On

– Output action :

5 On = Normal
5 Off = Inverted

Normal action



Inverted action

• To change the On-Off PI mode into On-Off differential, enter the value of Integral Time = 0.

Y.1 – 0…10 V– progressive output
Y.2 – Modulating output
Y.3 – 2-stage On-Off output
Y.4 – 3-stage On-Off output

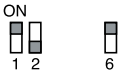
PB –Proportional Band
x – Magnitude controlled
X – Desired value

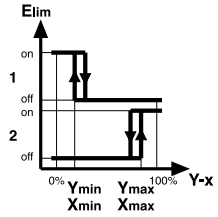
12.3 Limit controls

When the output is Progressive, DRU 314 can control the two relay outputs as minimum limit (1) On-Off and maximum limit (2) with reference to:

– Action limits for :

6 On = measurement range of magnitude controlled x
6 Off = output load for control Y.





13. SETTING PARAMETERS

The setting parameters must be entered after having completed the electric wiring and configured the dipswitches (12.1 Configuration).
Each time DRU 314 is switched on its display shows, for a few seconds, the version number of the controller. At the same time, the LEDs on the facia show the configuration of the dipswitches (the four upper LEDs are for dipswitches 1 to 4, whereas those below are for dipswitches 5 to 8):
– ashing = dipswitches Off
– lit = dipswitches On.
The display normally shows the magnitude measured.
The ⊖ and ⊕ keys permit viewing the setting parameters (display ashing).
The ⊕ and ⊖ keys permit changing the parameters shown on the display.
The type of parameter shown on the display is indicated by the lighting or ashing of the corresponding LED (see section 6. FACIA)
If for 15 seconds no key is pressed the display returns to showing the magnitude measured
To retrieve default data switch on the controller whilst keeping pressed ⊖ and ⊕ keys

13.1 External remote control c1 (see wiring diagram section 9)

DRU 314 can be controlled by an external remote control c1 (e.g. a timer) for:
- switch **c1** open: controller "**OPERATIONAL**";
- switch **c1** closed: controller "**NON OPERATIONAL**". The value of the measured quantity, which normally appears on the display, alternates with the word **"Off"**.

In both cases it is possible to carry out the settings described below.

13.2 Setting data with temperature detector B2 (ON 7) and On-Off control in 1, 2 (ON 1 2) or 3 stages (ON 1 2)

Display fixed with temperature value measured by B2.

Press ⊕: Display ashing with desired value **X** (0…99.9 °C).
Adjust with ⊕ or ⊖ (resolution 0.5°C)
If remote control **Rt** connected and a variation greater than ±0.5°C is set, the value **X** includes the adjustment value by the remote control and it alternates with the symbol " □□□".

Keep pressed ⊕ until the display shows **– – –** (about 3 seconds); release the key :
Display ashing with Proportional Band **PB**.
LED "PB" (6.5) ashing.
Adjust with ⊕ or ⊖ (ashing 0.5 °C).

Press ⊕: Display ashing with Integral Time **IT**.
LED "IT" (6.6) ashing.
Adjust with ⊕ or ⊖ (resolution 1 minute).

Press ⊕: Display ashing with telemanagement address.
All LEDs ashing.
Adjust with ⊕ or ⊖ .

Press ⊕: Display fixed with value of temperature measured by B2; this appears in any event if for 60 seconds no key is pressed.

13.3 Setting data with temperature detector B2 (ON 7) and 3-wire modulating control (ON 1 2)

Display fixed with temperature value measured by B2.

Press ⊕: Display ashing with desired value **X** (0…99.9 °C).
Adjust with ⊕ or ⊖ (resolution 0.5 °C).
If remote control **Rt** connected and a variation greater than ±0.5 °C is set, the value **X** includes the adjustment value by the remote control and it alternates with the symbol " □□□ ".

Keep pressed ⊕ until the display shows **– – –** (about 3 seconds); release the key :
Display ashing with Proportional Band **PB**.
LED "PB" (6.5) lampeggiante.
Adjust with ⊕ or ⊖ (resolution 0,5 °C).

Press ⊕: Display ashing with Integral Time **IT**.
LED "IT" (6.6) ashing.
Adjust with ⊕ or ⊖ (resolution 1 minute).

Press ⊕: Display fixed with value of insensitivity to input signal (0…50.0 °C).
LEDs "Min limits" (6.9) and "Max limits" (6.10) ashing.
Adjust with ⊕ or ⊖ (resolution 0.5°C).

Press ⊜: Display ashing with type of control :

PI = Proportional Integral"; **Int** = Integral
LEDs "PB" (6.5) and "IT" (6.6) ashing.
Adjust with **+** or **–** (PI ; int).

Press ⊜: Display ashing with telemanagement address.
All LEDs ashing.
Adjust with ⊕ or ⊖ .

Press ⊜: Display fixed with value of temperature measured by B2; this appears in any event if for 60 seconds no key is pressed.

13.4 Setting with temperature detector B2 (ON 7) and with progressive control 0…10 V– (ON 1 2)

Display fixed with temperature value measured by B2.

Press ⊜: Display ashing with desired value **X** (0…99.9 °C).
Adjust with ⊕ or ⊖ (resolution 0.5 °C).
If remote control **Rt** connected and a variation greater than ±0.5 °C is set, the value includes the adjustment value of the remote control and it alternates with the symbol " □□□ ".

Keep pressed ⊜ until the display shows **– – –** (about 3 seconds); release the key :
Display ashing with Proportional Band **PB** (0.5…99 °C).
LED "PB" (6.5) ashing.
Adjust with ⊕ or ⊖ (resolution 0.5 °C).

Press ⊜: Display ashing with Integral Time **IT** (0…255 minutes).
LED "IT" (6.6) ashing.
Adjust with ⊕ or ⊖ (resolution 1 minute).

Press ⊜: Display ashing with minimum limit of measurement **Xmin** (dipswitch 6 on On, 0…99 °C) or output load **Ymin** (dipswitch 6 in Off, 0…100 %).
LED "Max limits" (6.9) ashing.
Adjust with ⊕ or ⊖(resolution 0.5).

Press ⊜: Display ashing with maximum limit of measurement **Xmax** (dipswitch 6 on On, 0…99 °C or output load **Ymin** (dipswitch 6 on Off, 0…100%).
Led "Max limits" (6.10) ashing.
Adjust with ⊕ or ⊖ (resolution 0.5).

Press ⊜: Display ashing with value of insensitivity to input signal (0…50.0 °C).
LED "Min limits" (6.9) and "Max limits" (6.10) ashing.
Adjust with ⊕ or ⊖ (resolution 0.5 °C).

Press ⊜: Display ashing with type of control :
Pi = Proportional Integral"; **Int** = Integral
LED "PB" (6.5) and "IT" (6.6) ashing.
Adjust with ⊕ or ⊖ (Pi ; int).

Press ⊜: Display ashing with value of progressive control for testing output (0…100 %).
LED "Opens/Closes valve" (6.4) ashing.
Adjust with ⊕ or ⊖ (resolution 1 %).

Press ⊜: Display ashing with telemanagement address.
All LEDs ashing.
Adjust with ⊕ or ⊖.

Press ⊜: Display fixed with value of temperature measured by B2; this appears in any event if for 60 seconds no key is pressed.

13.5 Setting with active detector B1 (ON 7) and On-Off control in 1, 2 (ON 1 2) or 3 stages (ON 1 2)

Display fixed with magnitude measured by B1.

Press ⊜: Display ashing with desired value **X**.
Adjust with ⊕ or ⊖ (resolution 0.5).
If remote control **Rt** connected and a variation greater than ±0.5 °C is set, the value **X** includes the adjustment value of the remote control and it alternates with the symbol " □□□ ".

Keep pressed ⊜ until the display shows **– – –** (about 3 seconds); release the key :
Display ashing with value of measurement when the input signal is 0 V–.
LED "Min. measurement range"(6.7) ashing.
Adjust with ⊕ or ⊖ (resolution 0.5).

Press ⊜ : Display ashing with value of measurement when input signal is 10 V–.
LED “Max. measurement range” (6.8) ashing.
Adjust with ⊕ or ⊖ (resolution 0.5).

Press ⊜ : Display ashing with Proportional Band **PB**.
LED "PB" (6.5) ashing.
Adjust with ⊕ or ⊖ (resolution 0.5).

Press ⊜ : Display ashing with Integral Time **IT**.
LED "IT" (6.6) ashing.
Adjust with ⊕ or ⊖ (resolution1 minute).

Press ⊜ : Display ashing with telemanagement address.
All LEDs ashing.
Adjust with ⊕ or ⊖ .

Press ⊜ : Display fixed with value of magnitude measured by B1; this appears in any event if for 60 seconds no key is pressed.

13.6 Setting with active detector B1 (ON 7) and 3-wire modulating control (ON 1 2)

Display fixed with magnitude measured by B1.

Press ⊜ : Display ashing with desired value **X**.
Adjust with ⊕ or ⊖ (resolution 0.5 °C).
If remote control **Rt** connected and a variation greater than ±0.5°C is set, the value **X** includes the adjustment value of the remote control and it alternates with the symbol " □□□ ".

Keep pressed ⊜ until the display shows **– – –** (about 3 seconds); release the key :
Display ashing with value of measurement when the input signal is 0 V–.
LED “Min. measurement range” (6.7) ashing.
Adjust with ⊕ or ⊖ (resolution 0.5 °C).

Press ⊜ : Display ashing with value of measurement when input signal is 10 V–.
LED “Max. measurement range” (6.8) ashing.
Adjust with ⊕ or ⊖ (resolution 0.5 °C).

Press ⊜ : Display ashing with Proportional Band **PB**.
LED "PB" (6.5) ashing.
Adjust with ⊕ o ⊖ (resolution 0.5 °C).

Press ⊜ : Display ashing with Integral Time **IT**.
LED "IT" (6.6) ashing.
Adjust with ⊕ o ⊖ (resolution 1 minute).

Press ⊜ : Display ashing with value of insensitivity to input signal (0…50.0 °C).
LEDs “Min limits” (6.9) and “Max limits” (6.10) ashing.
Adjust with ⊕ o ⊖ (resolution 0.5 °C).

Press ⊜ : Display ashing with type of control :
PI = Proportional Integral”; **Int** = Integral
LEDs "PB" (6.5) and "IT" (6.6) ashing.
Adjust with ⊕ or ⊖ (PI ; Int).

Press ⊜ : Display ashing with telemanagement address.
All LEDs ashing.
Adjust with ⊕ or ⊖ .

Press ⊜ : Display fixed with magnitude measured by B1; this appears in any event if for 60 seconds no key is pressed.

13.7 Setting with active detector B1 (ON 7) and with progressive 0…10 V– (ON 1 2) signal

Display fixed with magnitude measured by B1.

Press ⊜ : Display ashing with desired value **X**.
Adjust with ⊕ or ⊖ (resolution 0.5 °C).
If remote control **Rt** connected and a variation greater than ±0.5 °C is set, the value **X** includes the adjustment value of the remote control and it alternates with the symbol " □□□ ".

Keep pressed ⊜ until the display shows **– – –** (about 3 seconds); release the key :
Display ashing with value of measurement when the input signal is 0 V–.
LED “Min. measurement range”(6.7) ashing.
Adjust with ⊕ or ⊖ (resolution 0.5 °C).

Press ⊜ : Display ashing with value of measurement when input signal is 10 V–.
LED “Max. measurement range" (6.8) ashing.
Adjust with ⊕ or ⊖ (resolution 0.5 °C).

Press ⊜ : Display ashing with Proportional Band **PB** (0.5…99 °C).
LED "PB" (6.5) ashing.
Adjust with ⊕ or ⊖ (resolution 0.5 °C).

Press ⊜ : Display ashing with Integral Time **IT** (0…255 minutes)
LED "IT" (6.6) ashing.
Adjust with ⊕ or ⊖ (resolution 1 minute).

Press ⊜ : Display ashing with minimum limit of measurement **Xmin** (dipswitch 6 on On, 0…99 °C) or output load **Ymin** (dipswitch 6 on Off, 0…100%).
LED “Min limits” (6.9) ashing.
Adjust with ⊕ or ⊖ (resolution 0.5 °C).

Press ⊜ : Display ashing with maximum limit of measurement **Xmax** (dipswitch 6 on On, 0…99 °C) or output load **Ymin** (dipswitch 6 on Off, 0…100%).
LED "Max limits" (6.10) ashing.
Adjust with ⊕ or ⊖ (resolution 0.5 °C).

Press ⊜ : Display ashing with value of insensitivity to input signal (0…50.0 °C).
LEDs “Min limits”(6.9) and “Max limits” (6.10) ashing.
Adjust with ⊕ or ⊖ (resolution 0.5 °C).

Press ⊜ : Display ashing with type of control :
PI = Proportional Integral” ; **Int** = integral
LED "PB" (6.5) and "IT" (6.6) ashing.
Adjust with ⊕ or ⊖ (Pi ; int).

Press ⊜ : Display ashing with value of progressive control for testing output (0…100 %).
LED “Opens/Closes valve” (6.4) ashing.
Adjust with ⊕ or ⊖ (resolution 1 %).

Press ⊜ : Display ashing with telemanagement address.
All LEDs ashing..
Adjust with ⊕ or ⊖ .

Press ⊜ : Display fixed with magnitude measured by B1; this appears in any event if for 60 seconds no key is pressed.

Amendment from 16.09.03 version

Page	Section	Amendments
1	3	Updated 2 detectors models (Detector for air duct relative humidity)
4	10.1	Updated wiring diagram dipswitch number 7 position.

LB 16.09.03; Rev.: LB 09.11.05

COSTER
CONTROLLI TEMPERATURA ENERGIA
COSTER TECNOLOGIE ELETTRONICHE S.p.A.
Sede Legale: 20132 Milano - Via San G.B. De La Salle, 4/a

Head Office & Sales
Via San G.B. De La Salle, 4/a — Tel. +39 022722121
20132 - Milano — Fax +39 022593645
Orders — Fax +39 0227221239
Reg. Off. Central & Southern
Via S. Longanesi, 14 — Tel. +39 065573330
00146 - Roma — Fax +39 065566517
Shipping
Via Gen. Treboldi, 190/192 — Tel. +39 0364773200
25048 - Edolo (BS) — Tel. +39 0364773202

E-mail: info@coster.eu — Web: www.coster.eu

ISO 9001:2000
IQNet
THE INTERNATIONAL CERTIFICATION NETWORK
Registration Number: IT - 34674
CSQ - Certificate N. 9115.COEE

D 33158