

Relative Humidity Monitor (from Wet + Dry Temperatures)

The USC is connected to a Pt100 probe on CH1, dry bulb temperature and Pt100 probe on CH2, wet bulb temperature.

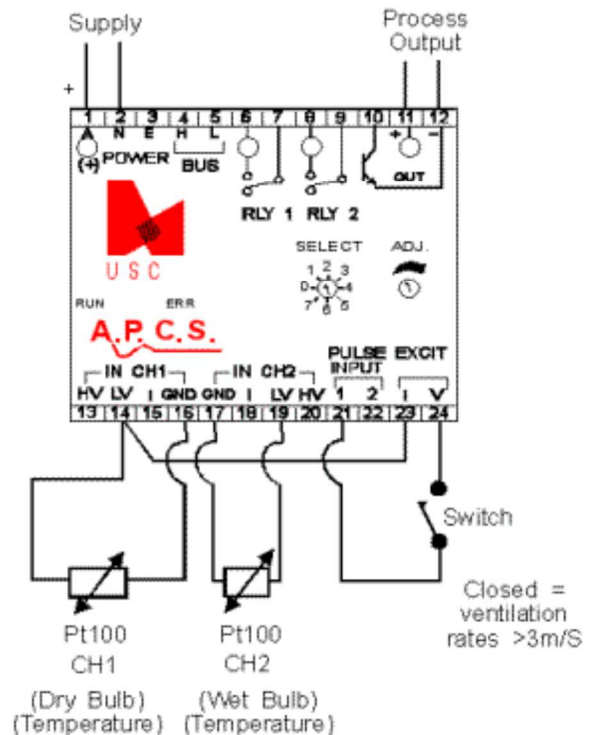
RH is equal to the ratio of actual vapour pressure of air (e) to the maximum possible vapour pressure at that temperature, ie the saturation vapour pressure (es).

$$RH = \frac{e}{e_{Ds}} \times 100\%$$

The basic RH Equation:

Declarations

Variable	Description/Value	Eng. Uni/Label	Use in USC Program
T	dry bulb temperature	Deg C	CH1
TW	wet bulb temperature	Deg C	Ch2
P1	high for ventilated unit		P1
Eds	sat vapour pressure at dry temp	SatVapDy	M4
Ews	sat vapour pressure at wet temp	SatVapWt	M5
E	actual vapour pressure	VapPress	M6
RH	Relative Humidity	RH	M7
Constant a	(1.8096)	EquCon	Con_a
Constant b	(17.26983882)	EquCon	Con_b
Constant c	(237.3)	EquCon	Con_c
Constant e	(-0.0007866)	EquCon	Con_e
Constant f	(-0.000666)	EquCon	Con_f
Constant g	atm pressure(1013 hpa)	atmPress	Con_g
Constant h	(100)	EquCon	Con_h
Constant i	(610)	EquCon	Con_i
Constant j	(1)	EquCon	Con_j



USC Programs

File



Help



UAP00011.usc



UAP00012.usc

Comment

If unexpected results occur when loading the .usc file press back and click on help for instructions.

First Issue

Convert to USC config 105 standard.