



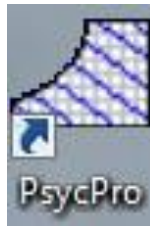
## PsycPro Software Instructions

<b>Version</b>	2.1		
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<b>Reviewed by</b>	Steve Steyn	<b>Date</b>	04/08/2014

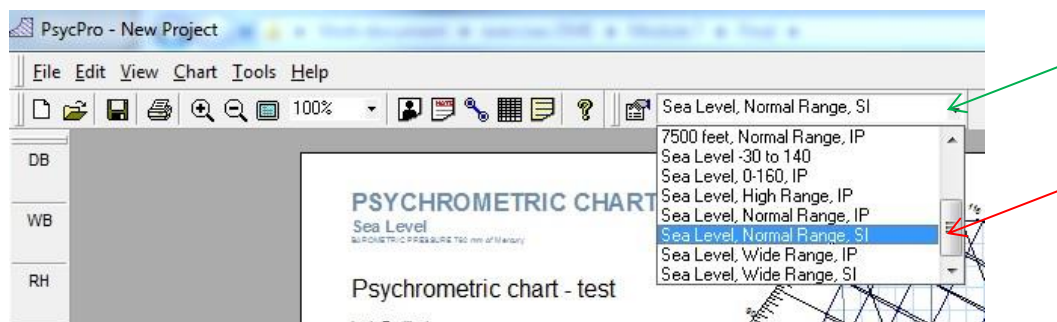
# Instructions for Using the PsycPro Software Program

## 1. Initial Setup:


- Log on to the remote labs:
  - PsycPro should be installed on RL 2, 4 and 8.
  - If you cannot access the software at this location, please contact your LSO for further assistance.
- Open PsycPro:
  - The PsycPro icon is located on the desktop.



- Make sure that you select the correct units:
  - Select 'Sea Level, Normal Range, SI' from the drop-down menu on the tool bar.



## 2. How to place a State Point:

- Select the icon for the 'Edit State Point'. 
- In the 'Choose Action' drop-down menu, select 'Add State Point'.
- Enter the point details.
- Click 'Apply' to confirm.

## 3. How to Connect Points:

- Select the icon 'Edit State Point'.

- In the 'Choose Action' drop-down menu, select 'Connect State Point'.
- Select the point and/or enter the details of the point you wish to enter.
- Click 'Apply' to confirm.
- Select the other options (mixing box, cooling coil, heating coil) if required and proceed in a similar way as described above.

#### 4. How to Delete a Point:

- Select the icon 'Edit State Point'.
  - Next to the 'Choose Action' drop-down menu, click delete.

#### 5. How to Add Notes:

- Right click where you want to add your note and select 'Add Note'.
- To edit the note:
  - Right click on the note.
  - Select edit and proceed to edit.
- Similarly, you can delete your note or proceed to more advanced editing.
- To move your note simply click and drag.

#### 6. How to Add Your Personal Details and Project Title to the Chart:

- Select 'Tool' from the top menu.
  - Under the general tab, select your personal details and make sure to select the option you wish to include on your chart.
  - Select the 'Chart' from the top menu.
  - Then, add personal information. Click and drag your personal information where you want it on the chart.
- Similarly, select the project information from the 'Chart' menu to place the title on the chart. Then edit the title.

#### 7. How to save as PDF:

- Select 'Save as PDF' from the File menu located on the top left-hand corner.

#### 8. Example:

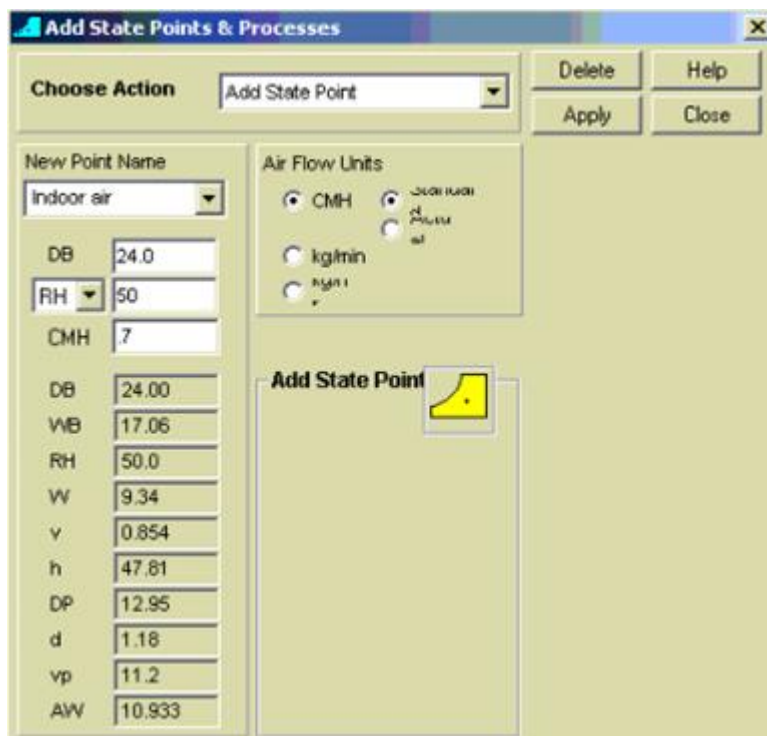
(Replace all values with values specific to the assignment) Set to: Sea Level, Normal Range, SI



### Create Points and Reactions of a System/Process:

Indoor air; Outdoor air; Mixed air (mixed box); Cooled air (cooling coil), and Supply (heating coil).

- Create **Indoor air point** using the “add State Point” action where (Apply when done):  
Dry Bulb (DB) Temp = 24°C | Relative Humidity (RH) = 50% | Air flow (CMH) = 0.7 of total (70% of mix):



- Create **Mixed Box** using the “Mixing Box” action. Enter the “Airstream 2 Name” as **Outdoor air** and “Mixed Point Name” as **Mixed air** - where:  
**Outdoor air** Dry Bulb (DB) Temp = 30°C | Relative Humidity (RH) = 80% | Air flow (CMH) = 0.3 of total (30% of mix):

Airstream 1 (Indoor air)		Mixed Point (Mixed air)		Airstream 2 (Outdoor air)	
CMH	1	CMH	1	CMH	3
DB	24.00	DB	25.4	DB	30.00
WB	17.06	WB	19.8	WB	27.09
RH	50.0	RH	59.7	RH	80.0
W	9.34	W	12.2	W	21.67
v	0.85	v	17.0	v	0.888
h	47.81	h	56.59	h	85.47
DP	12.95	DP	0.86	DP	26.17
d	1.182	d	1.1738	d	1.15
vp	11.197	vp	1.939	vp	25.5
AW	10.933	AW	14.132	AW	24.393

Create **Cooled air** using the “Cooling Coil” action. Enter the “End Point Name” as **Cooled air** - where:

**Cooled air** Dry Bulb (DB) Temp = 11°C | Humidity Ratio (W) = 7.9 g/kg  
(1000g/kg = kg/kg) | Air flow (CMH) = 719 kg/min (60 \* X kg/s):

Start Point (Mixed air)		End Point (Cooled air)	
CMH	1	CMH	719
DB	25.40	DB	11.00
WB	19.80	WB	10.69
RH	59.9	RH	96.4
W	12.22	W	7.90
v	0.86	v	0.815
h	56.60	h	30.98
DP	17.06	DP	10.46
d	1.174	d	1.24
vp	14.593	vp	9.5
AW	14.182	AW	9.696

Cooling Coil Energy Balance	
Total	307.01
Sensible	177.30
Latent	129.71
Dehumidificati	186.4
Sensible Heat	0.578
Enthalpy / Humidity Ratio	5,931

- Create **Supply** using the “Heating Coil” action. Enter the “End Point Name” as **Supply** - where:

**Supply** Dry Bulb (DB) Temp = 14°C | Humidity Ratio (W) = 7.9 g/kg  
 (1000g/kg = kg/kg) | Air flow (CMH) = 719 kg/min (60 \* X kg/s):

The screenshot shows a software window titled "Add State Points & Processes". It is configured for a "Heating Coil" process. The "Start Point Name" is "Cooled air" and the "End Point Name" is "Supply". The air flow units are set to "kg/min" with a value of 719. The process parameters are: Total = 37, Sensible = 37, Latent = 0, and Moisture Diff. = 0.00. The Sensible Heat is set to 1.00. The start point properties are: DB 11.00, WB 10.69, RH 96.4, W 7.90, v 0.81, h 30.90, DP 10.46, d 1.237, vp 9.496, and AW 9.696. The end point properties are: DB 14.00, WB 11.96, RH 79.2, W 7.90, v 0.823, h 34.04, DP 10.46, d 1.22, vp 9.5, and AW 9.594.

**PSYCHROMETRIC CHART**

SeaLevel  
BAROMETRIC PRESSURE: 1013 mb at Sea Level

