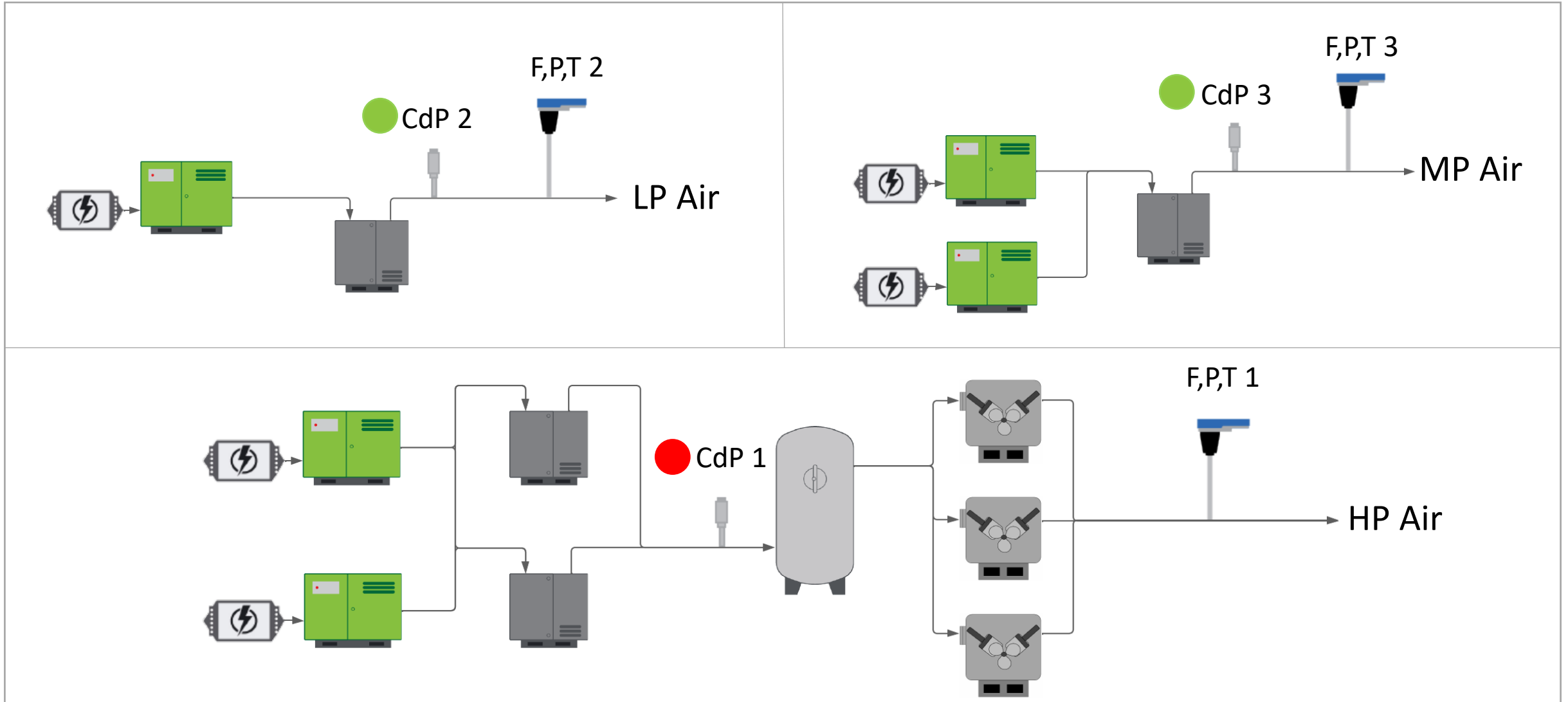




Get the moist out of your dew point measurements

VPI Instruments

Cosmetic factory Italy

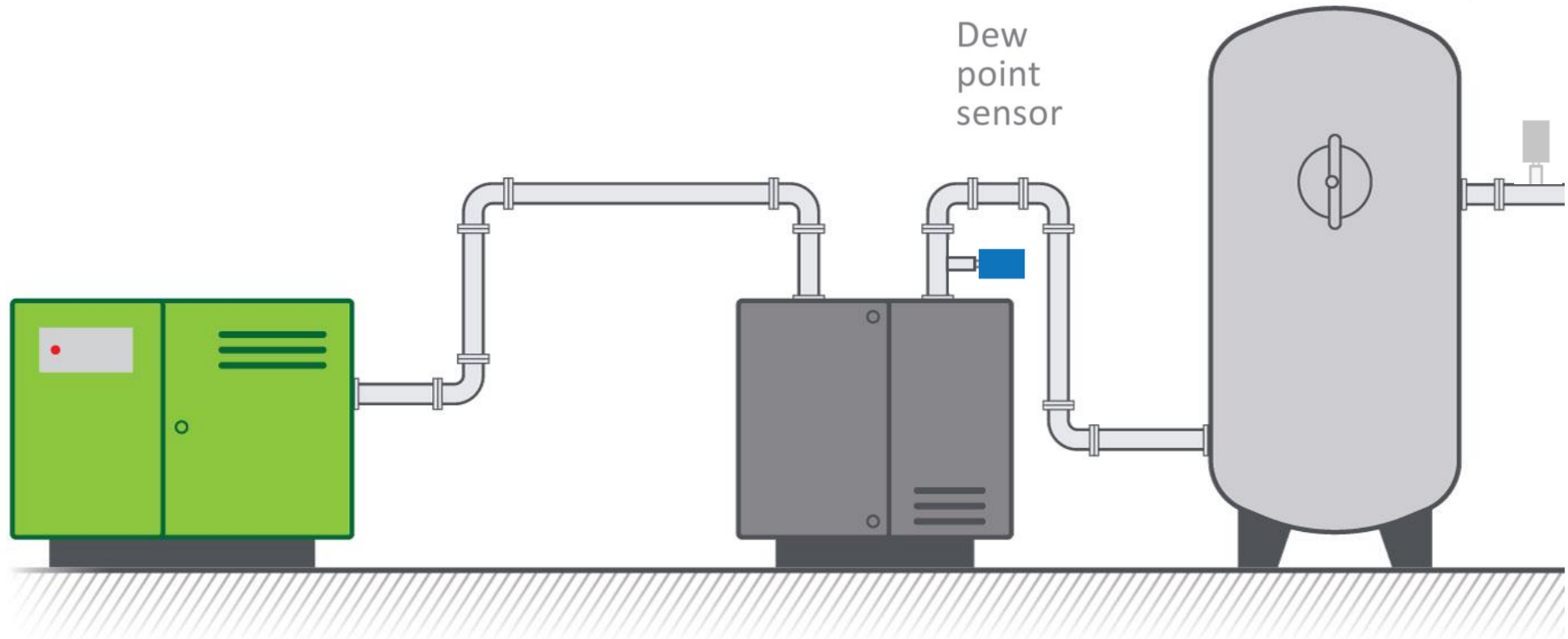


A dew point reveals
what is really going on

*"I am sure your dew
point sensor is broken"*

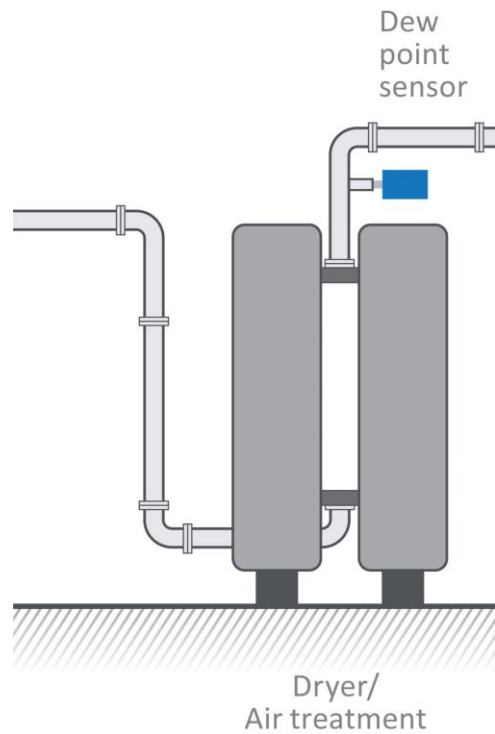


Measurement location

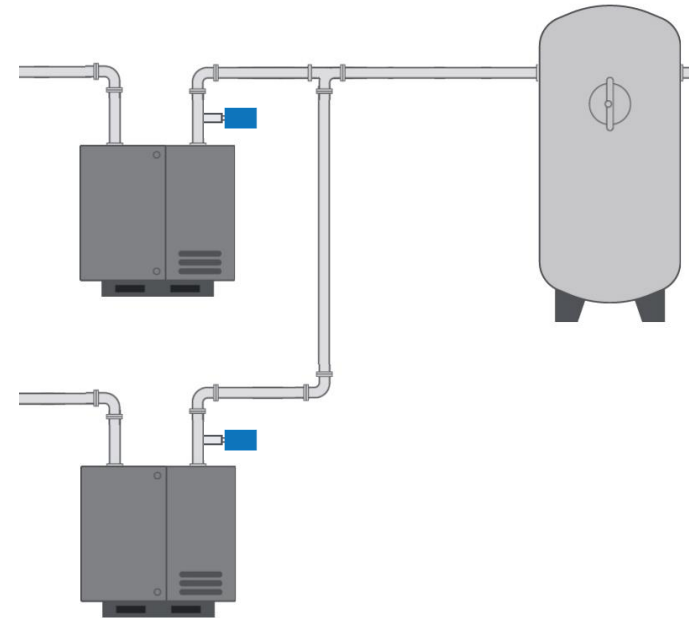


Measurement location

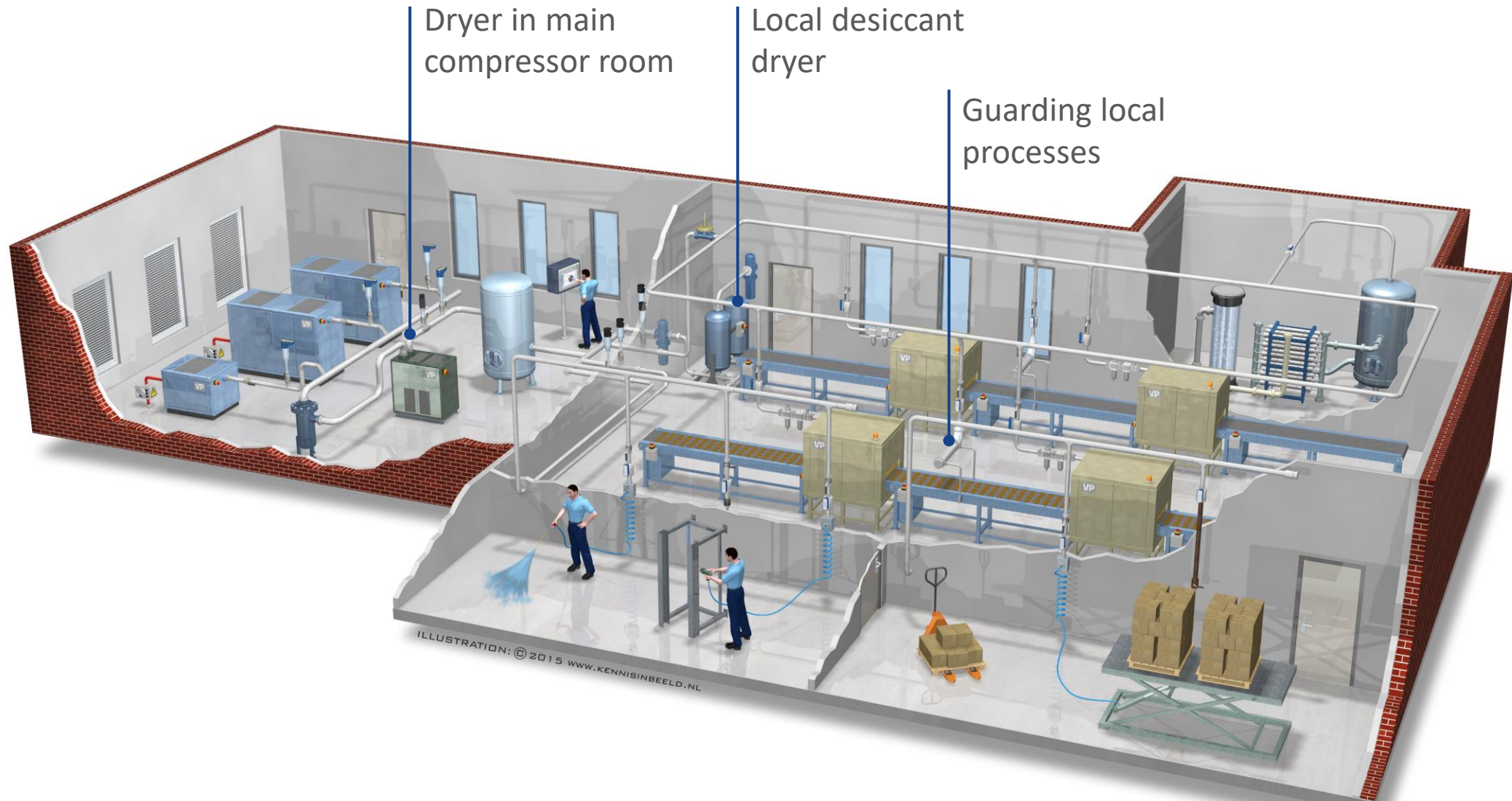
Adsorption dryers



Measure each dryer individually

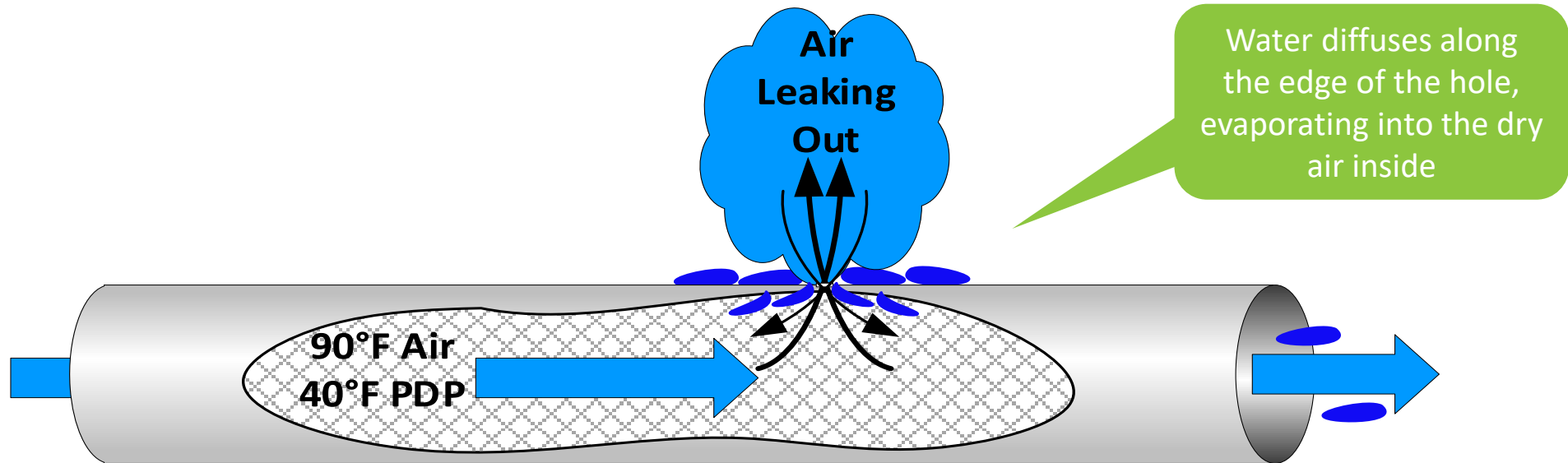


Measurement location



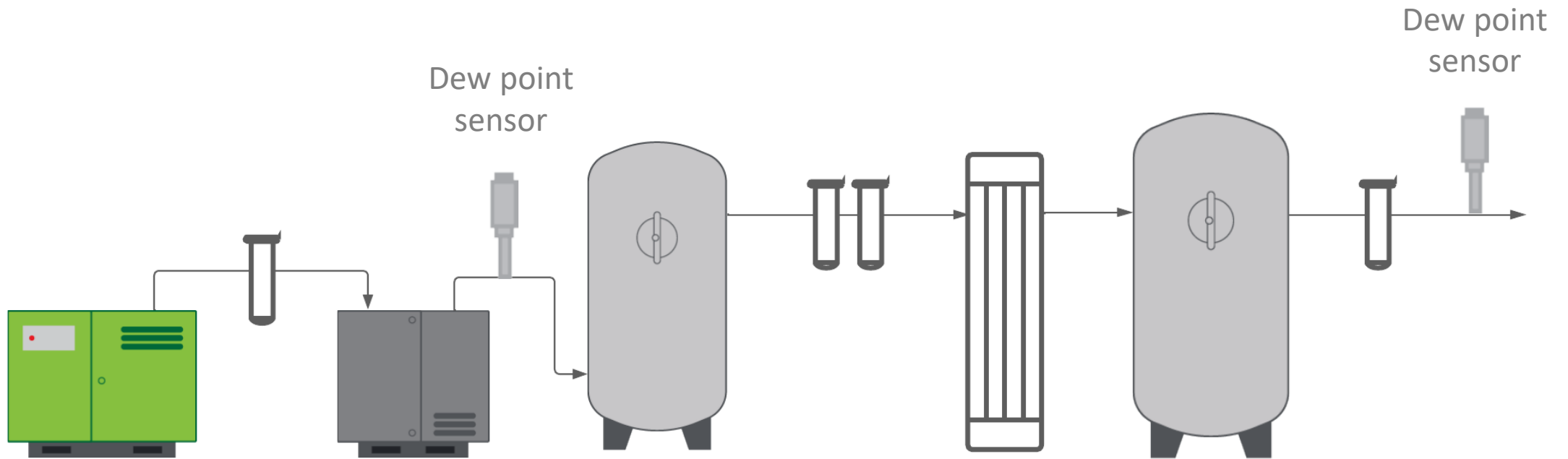
Downstream dew point measurements

- Guard local dryer functionality
- Deterioration of dew point trough leaks
- Monitor critical processes: the investment for a dew point sensor is a lot cheaper than loss of product



Nitrogen & Oxygen generators

- Monitor compressed air dryer performance: maintenance management
- Monitor dew point of nitrogen / oxygen outlet

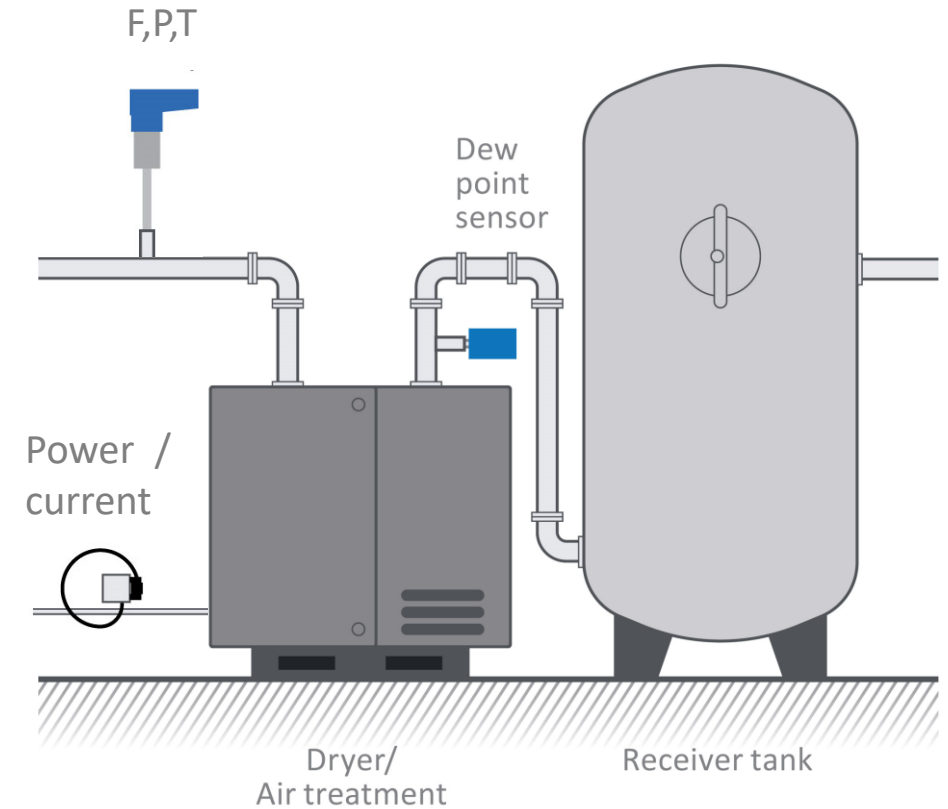


$$1 + 1 = 3$$

Combine data for better analysis

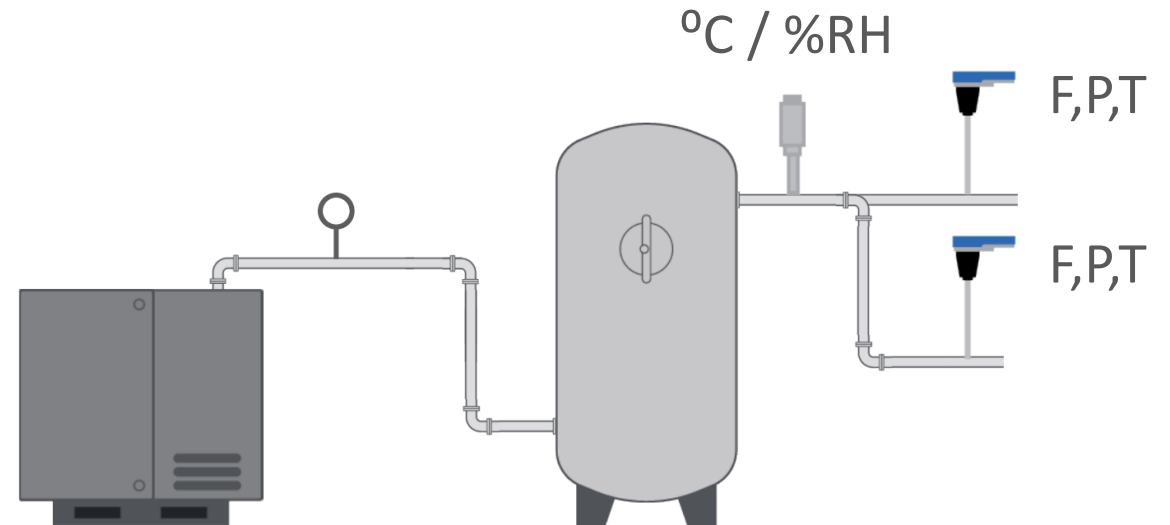
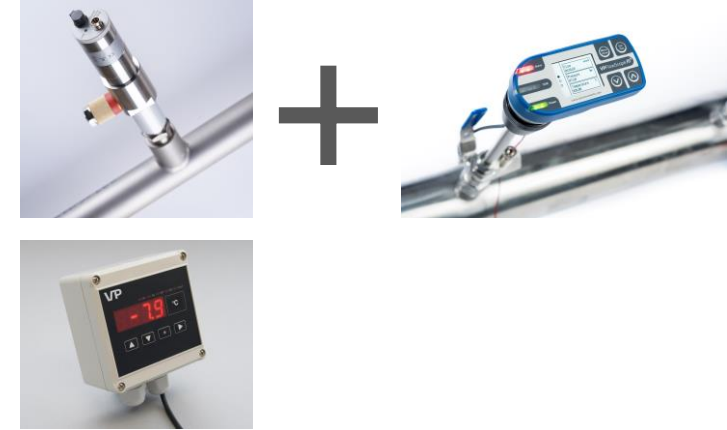
Combine dew point with 3-in-1 flow meters:
flow, pressure, temperature → see more:

- Too high inlet temperature or too large flow rate:
Undersized dryer
- Pressure drop: internal condition of dryer
- Power/ kW data for efficiency analysis



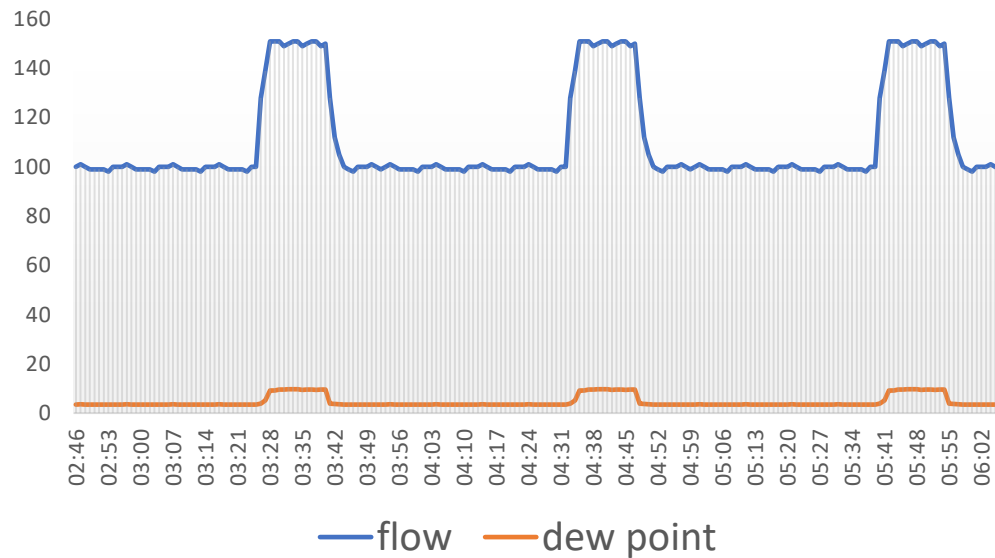
Power is in the combination

- Factory base load measurement
- Leak rate per main line
- Predictive maintenance measurement when using: °C / %RH together with Flow
- Is dryer malfunctioning due to:
 - Drying capacity
 - Saturated desiccant
 - Internal / external broken drains

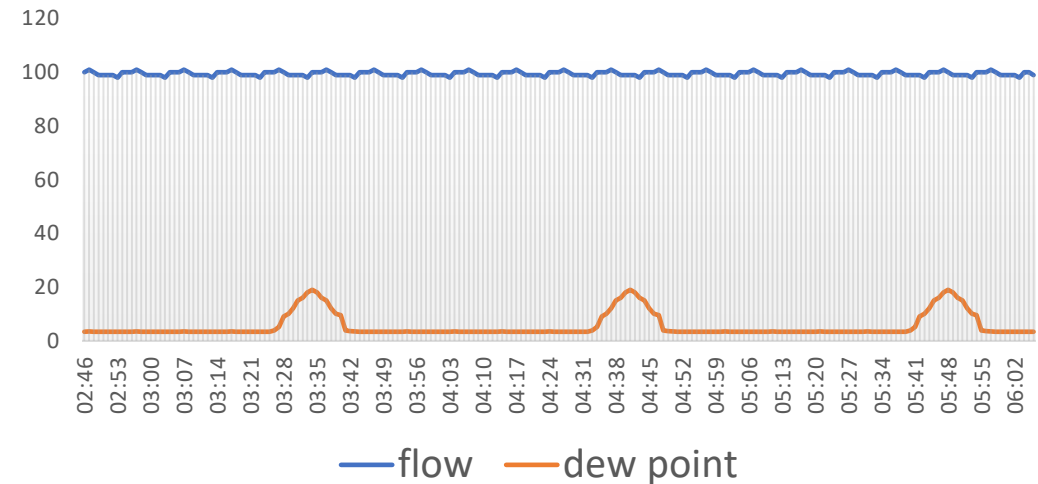


Power is in the combination

Flow and dew point go up



Flow the same,
dew point goes up



Compressed air drying and energy savings



The right dryer for the right application

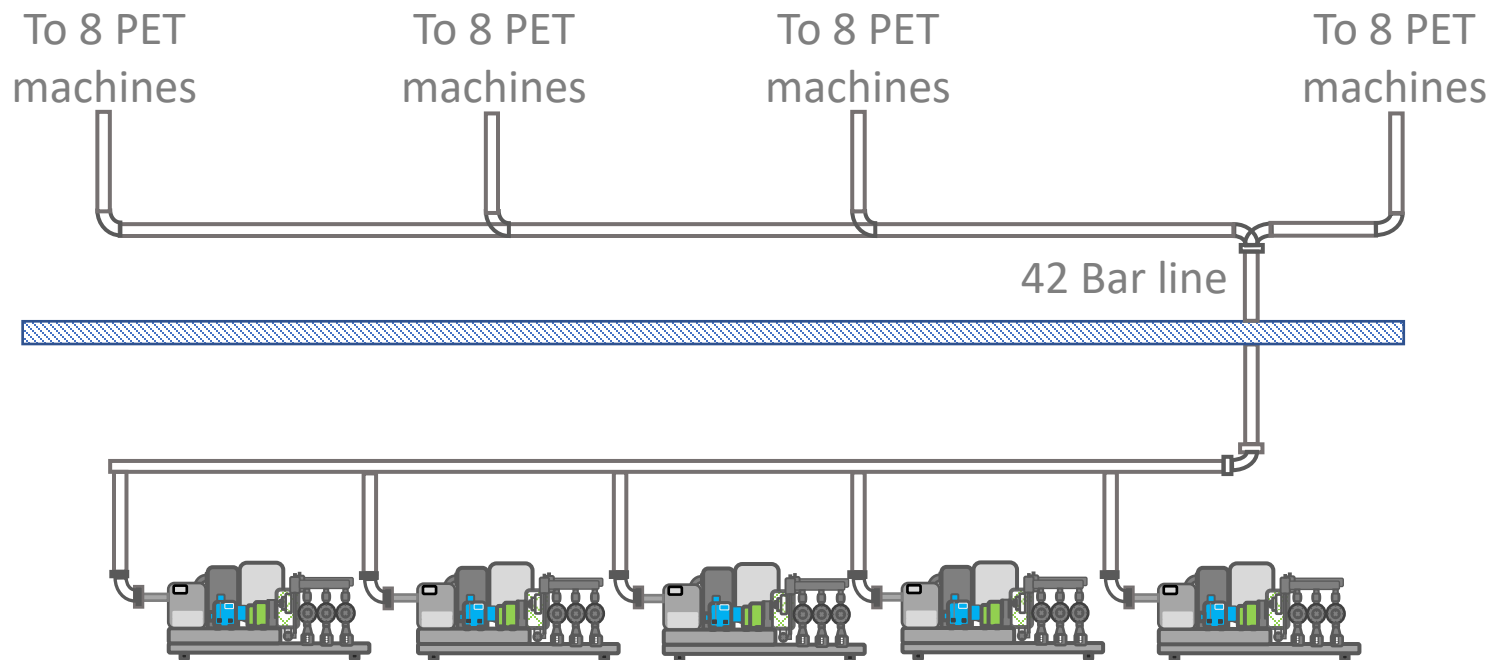
Consider:

- Entire system vs. local drying
- Do you need a low dew point all year round
- Can you prevent condensation by isolation

Type dryer	Typical dew point	kW/ 100 CFM
Refrigerate	5 °C 41 °F	0.8
Desiccant	-40 °C -40°F	3 - 4

User Case PET Bottle Plant - Mexico

- Too high inlet conditions compressors
- Compressor – dryer skid: difficult to do proper dryer maintenance
- Issues with quality @ PET machines



User Case PET Bottle Plant - Mexico

Solution customer:

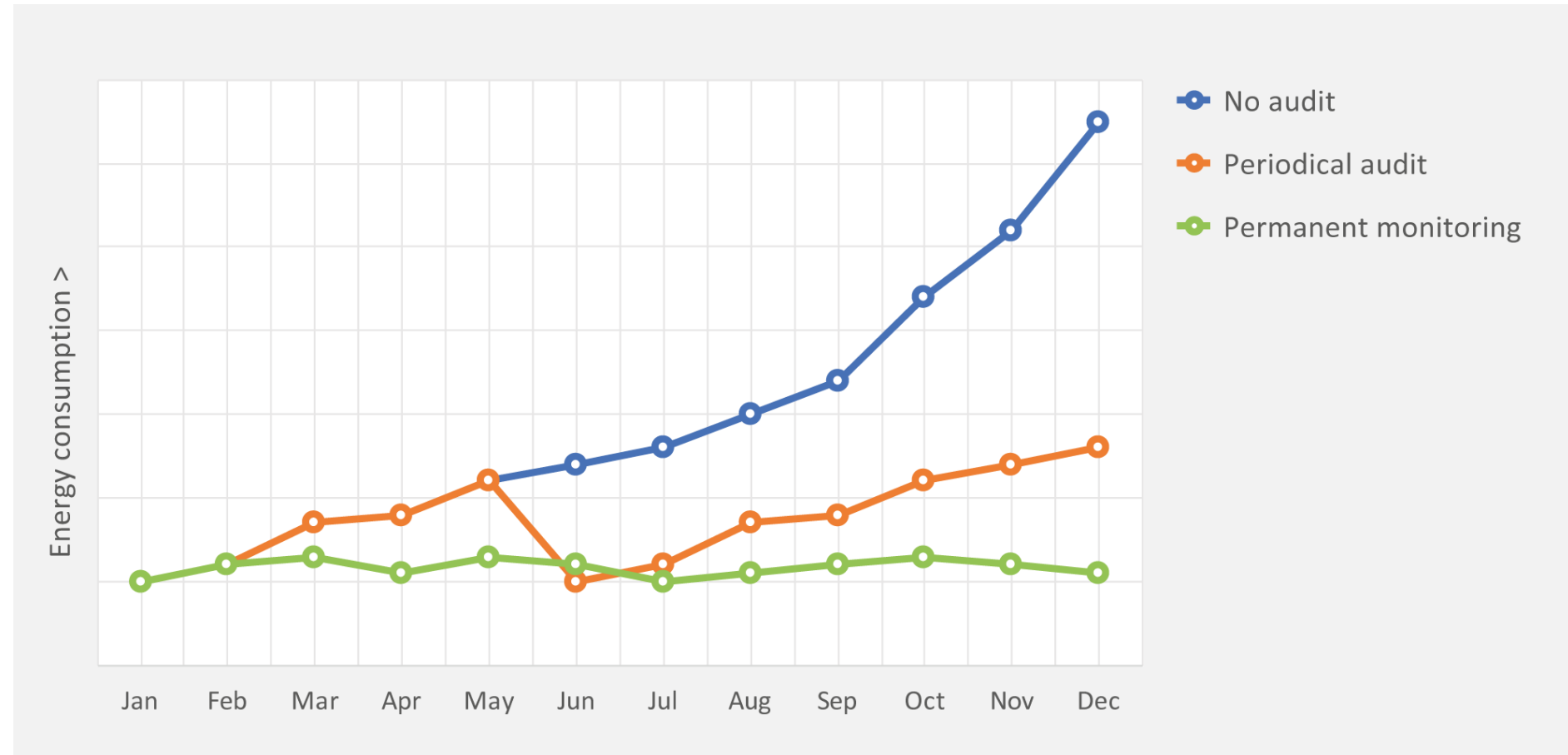
- Per PET machines a dryer: 24 local dryers!

Extra costs:

- Investment
- Electricity costs
- Maintenance costs

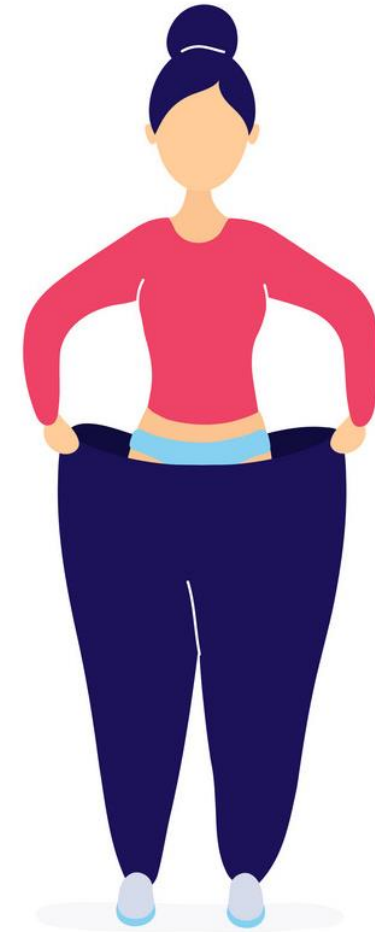


Why permanent monitoring?

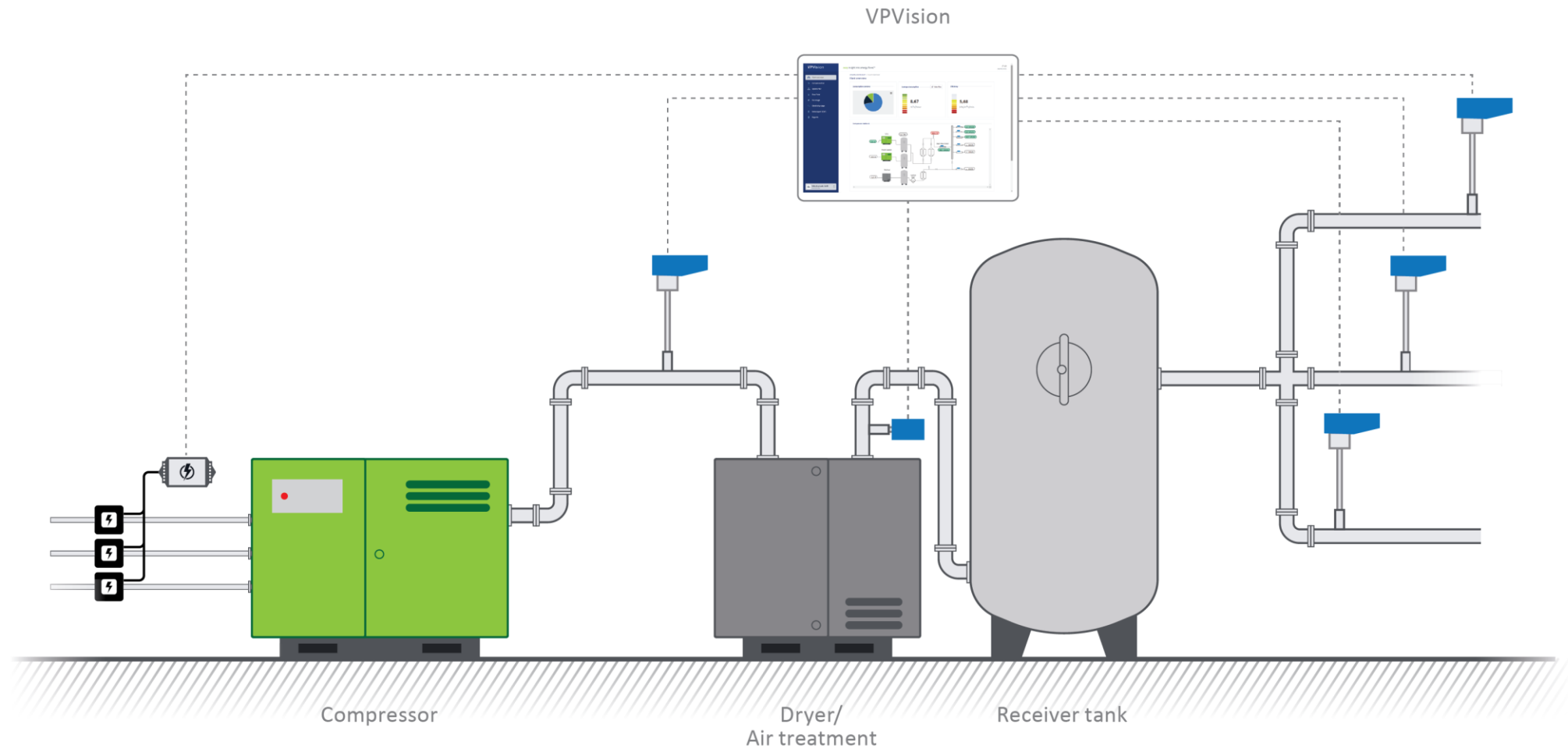


Why permanent monitoring?

- Get to know your **factory baseline**
- Keep a permanent eye on your system:
maintain the savings
- **Sizing of equipment** (compressors, pipework, downstream consumers)
- Monitor and **optimize the control system**
- **Maintenance** management & optimization
- Multi-site benchmarking
- Leakage management
- **Allocate costs**
- **Compliance** with energy directives (EED, ISO 50001)



Permanent monitoring is key to optimization



Alarms & Reports: Total peace of mind

> TITLE: Energy report
> PERIOD: 01-07-2018 08:00 - 01-08-2018 08:00
> LOCATION: VPI HQ

**VPVision
REPORT**

OVERVIEW AIR USAGE

PARAMETER	CURRENT PERIOD	LAST PERIOD	DELTA	YTD	
Production 1 [Totalizer]	33737	35786	-2049	25931	m3n
Production 2 [Totalizer]	-183745	626017	-799762	171900	m3n
Production 3 [Totalizer]	481316	471405	+9911	2541188	m3n
Production 4 [Totalizer]	132742	27902	+105140	642695	m3n
Production 5 [Totalizer]	44968	16392	+28596	132997	m3n
Total	509038	1367282	-858184	2304711	m3n

AIR DISTRIBUTION

> Production 1: 31412 m3n
> Production 2: 40292 m3n
> Production 3: 210408 m3n
> Production 4: 38131 m3n
> Production 5: 43126 m3n
> Total: 363371 m3n



ELECTRICITY USAGE

PARAMETER	CURRENT PERIOD	LAST PERIOD	DELTA	YTD	
Compressor 1 [Input 0]	2105	844	+1261	36643	kWh
Compressor 2 [Input 1]	94787	114759	-19972	327341	kWh
Compressor 3 [Input 2]	103669	100176	+3493	318100	kWh
Machine 1 [Input 3]	8248	2302	+5946	28741	kWh
Machine 2 [Input 4]	18205	7050	+11155	36180	kWh
Total	226974	224831	+2143	737205	kWh

KPIs

KPI	CURRENT PERIOD	LAST PERIOD	DELTA	UNIT	STATUS
Average usage	97.68	107.81	-10.13	m3n / hour	●
kWh today	679586453...	521431752...	+158152700...	kWh	●
Efficiency	112213.73	78010.86	+34202.87	kWh / m3n / min	●
Costs per m3n	37.40	26.00	+11.40	Euro / m3n	●
m3n today	363370.75	401047.03	-37676.28	m3n	●

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> TITLE: Energy report
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**VPVision
REPORT**

DRYER TEMPERATURE

PARAMETER	MIN	MAX	AVERAGE	
Analog (Temperature dryer)	3.06	12.96	5.29	deg C
Analog (Temperature dryer)	26.34	39.24	31.45	deg C

WATER USAGE

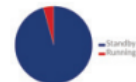
PARAMETER	CURRENT PERIOD	LAST PERIOD	DELTA	YTD	
Line 1 [1] WM1	13642	12854	+788	45603	ln
Line 2 [6] WM2 Hal16	135	0	+135	135	ln
Line 3 [7] WM3 Office	16779764	6325723	+10454041	23138341	ln
Line 4 [8] WM4 Fire water	1213	710	+503	2268	ln
Line 5 [9] WM5 Hall 1-2 ...	704232	625170	+78962	2512517	ln
Line 6 [10] WM6 Fire water	1890	65	+1825	2078	ln
Line 7 [11] WM7 Hal 3....	243190	532215	-289025	1412432	ln
Production 1 [Input 5]	66418	43778	+22640	110196	ln
Production 2 [Input 6]	11370	6348	+5022	37518	ln
Production 3 [Input 7]	206705	85849	+120856	292604	ln
Total	18048609	7632612	+10415997	27553682	ln

SUMMARY

PARAMETER	MIN	MAX	AVERAGE	
Analog (Dew Point)	3.24	29.79	9.40	deg C

COMPRESSOR 1

> Standby: 1.4 %
> Running: 18.8 %
> Total consumption: 2105 kWh
> Total starts: 680



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> TITLE: Energy report
> PERIOD: 01-07-2018 08:00 - 01-08-2018 08:00
> LOCATION: VPI HQ

**VPVision
REPORT**

COMPRESSOR 2

> Standby: 0 %
> Running: 3.2 %
> Total consumption: 94787 kWh
> Total starts: 959



COMPRESSOR 3

> Standby: 0 %
> Running: 2.7 %
> Total consumption: 103669 kWh
> Total starts: 688



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Alarms & Reports: Total peace of mind

Alarms history

<div> <div></div> <div>Excessive consumption</div> <div>High</div> </div>	<div>Started: May 11, 2022 — 19:47</div> <div>Ended: May 11, 2022 — 19:51</div>	<div></div> <div></div>
<div> <div></div> <div>Excessive consumption</div> <div>High</div> </div>	<div>Started: May 11, 2022 — 13:19</div> <div>Ended: May 11, 2022 — 13:46</div>	<div></div> <div></div>
<div> <div></div> <div>Pressure alarm</div> <div>Low</div> </div>	<div>Started: Mar 15, 2022 — 09:24</div> <div>Ended: Currently Active ⚠️</div>	<div></div> <div></div>
<div> <div></div> <div>Dryer malfunctioning</div> <div>High</div> </div>	<div>Started: Dec 23, 2021 — 14:21</div> <div>Ended: Currently Active ⚠️</div>	<div></div> <div></div>

Showing 4 of 4 events, 2 active events

Clear Ended Events

Summary:

- Maintain the dew point of your compressed air system:
 - Prolong the lifetime of equipment
 - Reduce maintenance costs
 - Prevent production losses
- Dry only where necessary and only to the pressure dew point required.
- Permanent dew point monitoring is key:
 - Prevent damage to equipment and products.
 - Make the right decisions on time.
- Operators of compressed air systems should address decaying dewpoint issues before it causes serious and costly issues.

Win a voucher of 500 Euros!

Can you calculate how much grains of moisture in our competition case? Follow the QR code and participate.

Out of the participant we will draw a lucky winner who gets a voucher of 500 Euros on the first order at VPInstruments. The winner will be announced on VPInstruments' LinkedIn on Nov 1, 2022.





THANK YOU!

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