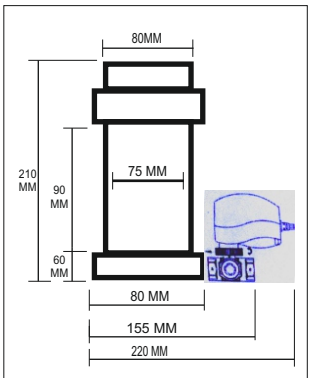
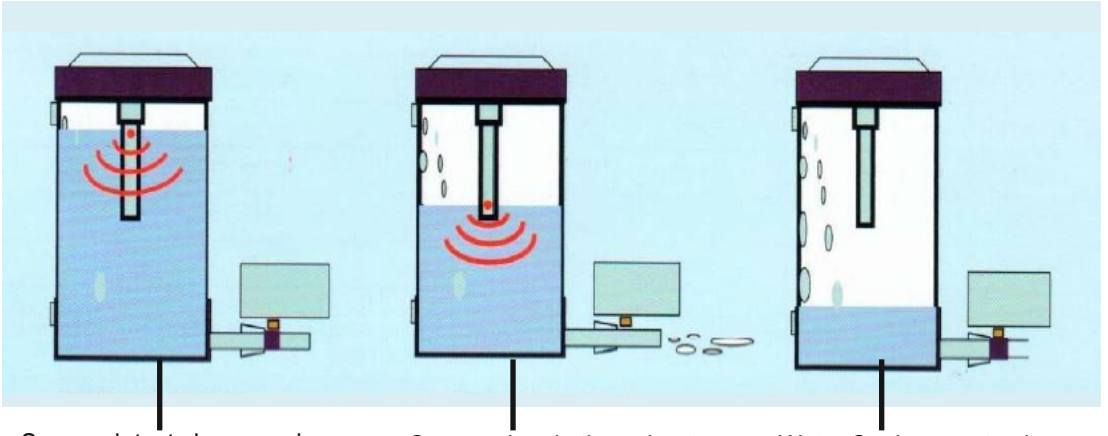
MOTORISED AUTO DRAIN VALVE
ZERO AIR LOSS **(ESMAD-161/401)**

Model - ESMAD-161



MODEL-ESMAD-161

At Side Installation



Sensor detects increased water level and automatically signals the ball valve to open.

Sensor signals the valve to close when condensation decreases.

Water Seal prevents air leakage when valve closed.

Comparison with Motorised Timer Drain (CMBV) Level Sensing Motorised Drain (ESMAD) and Level Sensing Solenoid Drain (ESSAD)

FEATURES	NO AIR LOSS MOTORISED AUTO DRAIN (ESMAD)	TIMER MOTORISED AUTO DRAIN (CMBV)	LEVEL SENSING SOLENOID AUTO DRAIN (ESSAD)
AIR LOSS	NO	YES	NIL
ORIFICE	FULL	FULL	SMALL
CLOGGING	NO	NO	POSSIBLE
ROI	YES	NO	YES
SUITABLE FOR RECEIVER CAPACITY	LOW-TO-HIGH	HIGH	LOW-TO- MEDIUM
PROGRAMMING	NOT REQUIRED	REQUIRED AND COMBURSOME	NOT REQUIRED
MAINTENANCE	VERY LOW	YES	LOW
REMOTE INDICATION	YES	NO	NO

ESMAD-161 / 401
TECHNICAL FEATURES

- Level Sensing 'NO AIR LOSS'.
- Full orifice 12 mm (½) and 24 mm (1").
- Condensate storage tank made in Aluminium.
- Operating pressure 2~16 bars.
- Operating pressure 2~40 bars.
- Ball valve Brass/SS-316/Brass Nickel Plated components.
- Ball of SS-316.
- Drain channel diameter 12 mm, no. clogging.
- Drain passage in straight line.
- Pilot Pressure 2.0 Kg/cm² (minimum)
- C/o Contacts 6A/230VAC for Remote indication/Alarm (optional)
- High torque motor 10 NM³.
- LED indication for.
  - -Drain
  - -Supply
- Test switch for manual operation.
- Easy installation.
- Indication LED when drain.
- Change over contacts for indication or alarm (optional).
- Supply voltage : 230VAC± 10% or 110VAC± 10% (optional).

AIR LOSS CALULATION
IN
MOTORISED TIMER / PROGRAMMABLE
AUTO DRAIN

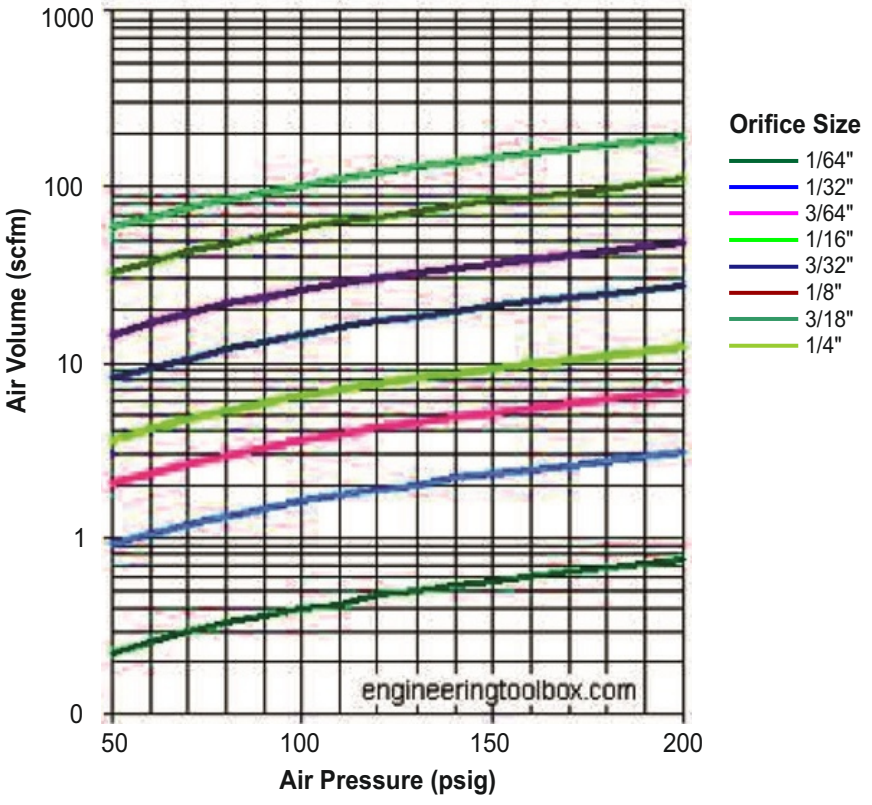
Refer Below graph for the AIR LOSS for various orifice of valve at different pressure.

Let's Assume

The Auto Drain of 1/2 inch having orifice of 12 mm is installed in the system having pressure 7 Kg/cm² and set for 15 sec. operation at every 15 minutes of interval and compressor is running for 8 Hrs. per shift only.

1. As per graph air loss from 1/4 inch orifice at pressure 7 Kg/cm² is approximately 100 cfm.
2. So the valve with ½ inch (12mm) orifice will have AIR LOSS of 200 CFM.
3. AIR LOSS per day per Shift (8 Hrs.) = 1600 CFM
4. Assuming 1HP compressor produce 4 CFM (FAD).
5. POWER LOSS will be = 1600/4 HP=400 HP=294 KW
6. Now let's assume that Air Loss is only 25% of above as some moisture will also we drained, so power loss will be 294/4=73.5 KW
7. Electricity Unit rate INR 7 per KWH, total loss 73.5x7= INR 514 per 8 Hrs shift
8. Loss per year=514x30x12=INR 1,85,040

The diagram below indicates the air leakage or air volume passing through orifices ranging size 1/64-1/4 inches. for well rounded nozzles multiply the values in the diagram with 0.97. for sharp edged nozzles multiply the values with 0.65.



- 1 psig = 6.9 kPa = 0.069 bar
- 1 inch = 25.4 mm
- 1 scfm = 0.472 n/s

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