Our vertical vacuum insulated phase separator is used to condition 2-phase boiling cryogenic liquefied gasses by separating gas from liquid while regulating the outlet pressure. A complete integrated modular design basis with all standardized components, provides the possibility to cover wide ranges of use against short delivery times. Depending on the inlet and outlet conditionism, this phase separator can be assembled for a wide capacity variety with working pressures ranging from ambient up to 12 barg.

To allow easy standalone operation, each vertical phase separator is standardly delivered with a Demaco DC-LC-100 level controller programmed for its specific use which controls the functionality of the phase separator.

The liquid nitrogen level is clearly indicated between 0-100% of the internal volume and provides free programmable alarms, at low and high level.

Optionally the vacuum insulated pipe outlet for boil-off gas can be supplied with a PT100 overflow protection.

**FEATURES**
- Stainless steel inner and outer vessel
- Vertical orientation
- Universal in- and outlets with Demaco DN10-25 Johnston coupling
- Up to 16 bar design pressure
- Up to 12 barg working pressure
- Self-mechanical pressure control
- Integrated DC-LS-050 capacitive level sensor
- Open/Close or Regulating valve for filling
- Standard cleanliness: Process clean
- PED approved design with CE certificate

**APPLICATION**
Vertical phase separators are used when:
- Height is not of importance
- High quality liquid on application is required
- Fast reaction times for liquid consumption
- Short interval periods of large consumption
- Large amounts of boil-off are created in adherent piping
- Controlled pressure required for operation
# PRODUCT SHEET
## PHASE SEPARATOR - VERTICAL

### OPTIONS
- Custom made mounting facilities
- Overflow protection by PT100 in gas vent blow-off line
- Integration in Building Management System (BMS)
- Integration with Oxygen ($O_2$) detection system

### DESIGN SPECIFICATIONS
- Standard according Pressure Equipment Directive (PED)
- Design according AD2000
- Cleanliness level:
  - Cleaned oil and grease-free
  - Oxygen clean on request
- Static vacuum with Multi-Layer Insulation
- Standard testing for each Phase Separator:
  - Dimensional check
  - Pressure test
  - NDE by X-ray or PT
  - Helium leak test (<1x10^{-9} mbarL/sec)
  - Vacuum retention test after 24h at ambient temp (acceptance level <2x10^{-4} mbar)
  - Functional test at -196°C

### MATERIALS
- **Process part**: 1.4301/1.4306/1.4307 ~304/304L
- **Vacuum Jacket**: 1.4301/1.4306/1.4307 ~304/304L
- **Spacers**: Epoxy reinforced glass fiber
- **Multi-Layer Insulation**: Glass paper and Aluminum foil
- **Supporting bracket**: Stainless steel

### TECHNICAL DATA

<table>
<thead>
<tr>
<th><strong>Positioning</strong></th>
<th>Indoor/Outdoor</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ingress protection</strong></td>
<td>IP65</td>
</tr>
<tr>
<td><strong>Orientation</strong></td>
<td>Vertical</td>
</tr>
<tr>
<td><strong>Design pressure</strong></td>
<td>PN16</td>
</tr>
<tr>
<td><strong>Inlet pressure</strong></td>
<td>Max. 16 barg</td>
</tr>
<tr>
<td><strong>Working pressure</strong></td>
<td>Atmospheric till 12 barg</td>
</tr>
<tr>
<td><strong>Volumetric capacity</strong></td>
<td>41 litre</td>
</tr>
<tr>
<td><strong>Effective buffer volume</strong></td>
<td>15-30 litre</td>
</tr>
<tr>
<td><strong>Output volume O/C</strong></td>
<td>Up to 1600 litre</td>
</tr>
<tr>
<td><strong>Output volume Regulated</strong></td>
<td>Up to 2200 litre</td>
</tr>
<tr>
<td><strong>Level indication</strong></td>
<td>DC-LS-050</td>
</tr>
<tr>
<td><strong>Pressure indication</strong></td>
<td>Pressure gauge</td>
</tr>
<tr>
<td><strong>Safety precautions</strong></td>
<td>Pressure relief valve</td>
</tr>
<tr>
<td><strong>Dimension vessel</strong></td>
<td>850x406 (LxD)</td>
</tr>
<tr>
<td><strong>Minimum build-in dimensions</strong></td>
<td>1875 mm</td>
</tr>
<tr>
<td><strong>Power supply</strong></td>
<td>24/110/240VAC or 24VDC</td>
</tr>
<tr>
<td><strong>Pneumatic supply</strong></td>
<td>Minimum 6 barg</td>
</tr>
</tbody>
</table>

### DOCUMENTATION
- Standard manufacturer data book record is part of each project and contains:
  - As built isometrics (if applicable)
  - Safety guidelines
  - User manuals
  - Declaration of conformity