

## Viewline Rudder Gauges

### Description

Gauge to indicate rudder angle (rudder position).

### Features

- \_ LED illumination
- \_ Integrated Warning LED
- \_ Changeable bezels
- \_ Backlit technology
- \_ Antifog and splash protection
- \_ Panel and flush mount possibility



Picture: Rudder Gauge 52mm

### Concept

|              |                                                                                                   |
|--------------|---------------------------------------------------------------------------------------------------|
| Housing      | Polycarbonat (PC)                                                                                 |
| Bezel        | PC (black, white) or ABS (chrome); several colors and shapes (see table)                          |
| Lens         | PMMA; double lens                                                                                 |
| Dial         | backlit; different colors (black, white)                                                          |
| Pointer      | backlit, white on black dials; red on white dials                                                 |
| Illumination | Dial: LED amber (605nm)<br>Pointer: LED red (632nm)                                               |
| Warning LED  | red (632nm)                                                                                       |
| Mounting     | Spinlock Nut; locking height 0.5mm – 20mm,<br>Optional Studs and Bracket; locking height 2 – 15mm |
| Connection   | 8 pin MQS connector system                                                                        |
| Sensor       | 440-102-001-001 D                                                                                 |

| Technical Data                                            |                                                                                                                                                                                                                                                |                                                                           |
|-----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|
| Installation depth                                        | 50mm                                                                                                                                                                                                                                           |                                                                           |
| Installation diameter                                     | 52mm                                                                                                                                                                                                                                           |                                                                           |
| Deflection angle                                          | 90°                                                                                                                                                                                                                                            |                                                                           |
| Operating Voltage                                         | 10 – 16 Volt                                                                                                                                                                                                                                   |                                                                           |
| Accuracy                                                  | < 3.6 angular degrees                                                                                                                                                                                                                          |                                                                           |
| Current consumption                                       | < 140 mA, incl. Warn LED                                                                                                                                                                                                                       |                                                                           |
| Operating temperature                                     | -30°C to +80°C; plated bezels (chrome) -30°C to +70°C                                                                                                                                                                                          |                                                                           |
| Storage temperature                                       | -30°C to +80°C for 48h; plated bezels (chrome) -40°C to +70°C +90°C for 1h                                                                                                                                                                     |                                                                           |
| Temperature shock                                         | Range<br>Transformation time<br>Retention time                                                                                                                                                                                                 | -40°C to +85°C; plated bezels (chrome) -40°C to +70°C<br>10 seconds<br>2h |
| Climatic test                                             | Range<br>Rel. Humidity                                                                                                                                                                                                                         | +25°C to +55°C<br>95%                                                     |
| EMC in conformity with<br>(Electromagnetic compatibility) | DIN_EN 61000-6-2<br>DIN_EN 61000-6-3<br>DIN_EN 61000-6-4                                                                                                                                                                                       |                                                                           |
| Standards                                                 | EN 60945<br>GL, Category C, F (under preparation)<br>CE                                                                                                                                                                                        |                                                                           |
| Vibration                                                 | Sinus 2g; 10-500Hz; duration 16h<br>Noise 3g; 10-1000Hz, duration 8h                                                                                                                                                                           |                                                                           |
| Mechanical shock                                          | continuous<br>Single shock<br>Free fall                                                                                                                                                                                                        | 25g; 6ms; 1Hz<br>100g; 11ms<br>1m; 3 times                                |
| Chemical resistance<br>against                            | <ul style="list-style-type: none"> <li>- preservative agent</li> <li>- preservative agent remover</li> <li>- cold cleaner</li> <li>- methylated spirit</li> <li>- interior cleaner</li> <li>- drinks containing caffeine and tannin</li> </ul> |                                                                           |
| Nominal position                                          | NL 0 to NL 85 (DIN16257)                                                                                                                                                                                                                       |                                                                           |
| Protection class                                          | according to IEC 60529<br>Front: IP67 (in nominal position)<br>Rear: IP52 (in nominal position)                                                                                                                                                |                                                                           |
| Reverse polarity protection                               | yes, 5 minute                                                                                                                                                                                                                                  |                                                                           |
| Over voltage protection                                   | yes, 1 minute                                                                                                                                                                                                                                  |                                                                           |

**Available Gauges:**

| No. unpacked * | Dial color | Measurement range        | ISO Symbol | Voltage | Sensor            |
|----------------|------------|--------------------------|------------|---------|-------------------|
| A2C53192577    | black      | 45°Port to 45° Starboard | Ship       | 12 Volt | VDO Rudder sensor |
| A2C53192578    | white      | 45°Port to 45° Starboard | Ship       | 12 Volt | VDO Rudder sensor |

\* "No. unpacked" is not a order number.

**Accessories:**

|                    |                                                              |
|--------------------|--------------------------------------------------------------|
| A2C59510221        | VL Dropping resistor 24V without connector (for 52mm Gauges) |
| A2C59510886        | VL Make point switch 12V (for 52mm Gauges)                   |
| A2C59510854        | VL Mounting Kit (studs and brackets) 52, 85, 110mm           |
| A2C59510864        | VL Mounting bracket flush mount                              |
| A2C53215640        | VL Sealing Ring 52mm flush mount                             |
| A2C59510847        | Bush housing, 8-pin                                          |
| A2C53324664        | Protective connector cap, 8-pin                              |
| Tyco No. 539635-1  | Hand pliers                                                  |
| Tyco No. 539682-2  | Tool for hand pliers.                                        |
| Tyco No. 1355718-1 | Single contacts 0.14 – 0.22 mm <sup>2</sup> tin plated       |
| Tyco No. 963729-1  | Single contacts 0.5 – 0.75 mm <sup>2</sup> tin plated        |
| Tyco No. 1355717-1 | Strip 0.14 – 0.22 mm <sup>2</sup> tin plated                 |
| Tyco No. 928999-1  | Strip 0.25 – 0.5 mm <sup>2</sup> tin plated                  |
| Tyco No. 963715-1  | Strip 0.5 – 0.75 mm <sup>2</sup> tin plated                  |

**Bezels 52mm**

|                 | Black       | Chrome      | White       |
|-----------------|-------------|-------------|-------------|
| <b>Flat</b>     | A2C53186040 | A2C53186023 | A2C53186022 |
| <b>Round</b>    | A2C53186027 | A2C53186029 | A2C53186028 |
| <b>Triangle</b> | A2C53186024 | A2C53186026 | A2C53186025 |

**Bezels 85mm**

|                 | Black       | Chrome      | White       |
|-----------------|-------------|-------------|-------------|
| <b>Flat</b>     | A2C53192911 | A2C53192910 | A2C53192912 |
| <b>Round</b>    | A2C53192913 | A2C53192914 | A2C53192916 |
| <b>Triangle</b> | A2C53192917 | A2C53192918 | A2C53192920 |