

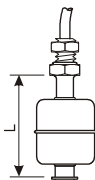
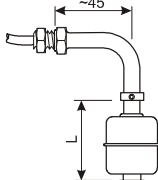
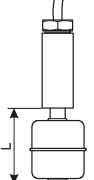
## Single-point Float Level Switch LCSF

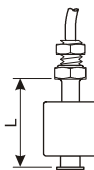
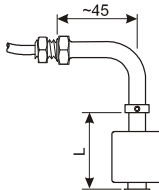
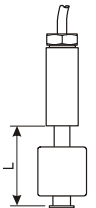
- ◆ Inside installation
- ◆ Low cost
- ◆ High reliability
- ◆ 135 °C maximum liquid temperature
- ◆ Various float and cable types
- ◆ Side and top mounting
- ◆ Submersible variant

The operation of the COMECO's level probe LCSF is based on the switching of a reed switch by a magnetic float, moving alongside a protective tube. Large variety of versions based on different floats is available. The float can be made of stainless steel or plastic; floats with various dimensions and specific gravity are available for use with different liquid density (down to 0.5 g/cm<sup>3</sup>) and liquid temperature up to 135 °C. Cable wiring is available with various insulations and lengths. The LCSF switch is available in variants designed for inside vessel mounting and in a special submersible variant with additional weight and forced cable insulation.



### Technical specifications

| Variant                           | w/ SS float                                                                                                                                                          |                                |            |                                                                                   |            |            |                               |                                                                                     |                                                                 |            |            |        |
|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|------------|-----------------------------------------------------------------------------------|------------|------------|-------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------|------------|------------|--------|
|                                   | straight                                                                                                                                                             |                                |            | angled                                                                            |            |            |                               | submersible                                                                         |                                                                 |            |            |        |
| Specifications                    |                                                                                     |                                |            |  |            |            |                               |  |                                                                 |            |            |        |
|                                   | Float type                                                                                                                                                           | S0                             | S1         | S2                                                                                | S3         | S4         | S11                           | S5                                                                                  | S6                                                              | S7         | S10        | S20    |
|                                   | Liquid density [g/cm³]                                                                                                                                               | > 0.72                         | > 0.70     | > 0.70                                                                            | > 0.65     | > 0.55     | > 0.45                        | > 0.65                                                                              | > 0.50                                                          | > 0.82     | > 0.82     | > 0.75 |
|                                   | Ext. tube diameter ('d')                                                                                                                                             | 8 mm                           | 8 mm       | 10 mm                                                                             | 14 mm      | 14 mm      | 14 mm                         | 16/18 mm                                                                            | 16/18 mm                                                        | 8 mm       | 8 mm       | 8 mm   |
|                                   | Contact type                                                                                                                                                         | reed contact: NO, NC, or NO/NC |            |                                                                                   |            |            |                               |                                                                                     |                                                                 |            |            |        |
| Contact ratings                   | '1': max. 120 VAC, max. 0.5 A, max. 10 W; '2': max. 230 VAC, max. 0.5 A, max. 10 W; '3': max. 230 VAC, max. 2 A, max. 50 W                                           |                                |            |                                                                                   |            |            |                               |                                                                                     |                                                                 |            |            |        |
| Probe length ('L')                | ≈ 33 mm                                                                                                                                                              | ≈ 38 mm                        | 50...55 mm | 65...70 mm                                                                        | 62...67 mm | 70...80 mm | 85...95 mm                    | 120...135 mm                                                                        | ≈ 38 mm                                                         | 40...45 mm | 50...55 mm |        |
| Process temperature               | PVC cable: -20...75 °C; silicone or Teflon® cable: -20...135 °C; PUR cable: -20...80 °C                                                                              |                                |            |                                                                                   |            |            |                               |                                                                                     |                                                                 |            |            |        |
| Ambient temperature               | PVC cable: -20...75 °C; silicone or Teflon® cable: -20...150 °C; PUR cable: -20...80 °C                                                                              |                                |            |                                                                                   |            |            |                               |                                                                                     |                                                                 |            |            |        |
| Max. process pressure             | 8 bar                                                                                                                                                                | 10 bar                         | 30 bar     | 12 bar                                                                            | 30 bar     | 15 bar     | 30 bar                        | 10 bar                                                                              | 30 bar                                                          | 50 bar     | 30 bar     |        |
| Process connection <sup>(1)</sup> | M10, M12, M14, M16, M18, M20, M27, 1/8", 1/4", 3/8", 1/2", 3/4"                                                                                                      |                                |            | M16, M18, M20, M27, M33, 1/2", 3/4", 1"                                           |            |            | M20, M27, M33, 1/2", 3/4", 1" |                                                                                     | M10, M12, M14, M16, M18, M20, M27, 1/8", 1/4", 3/8", 1/2", 3/4" |            |            |        |
| Wiring                            | up to 10 m flexible cable: PVC, silicone, or Teflon® (2...4 x 0.25 mm <sup>2</sup> , OD 4...5 mm) or PUR <sup>(2)</sup> (2...4 x 0.50 mm <sup>2</sup> , OD 6...8 mm) |                                |            |                                                                                   |            |            |                               |                                                                                     |                                                                 |            |            |        |
| Wetted parts                      | stainless steel                                                                                                                                                      |                                |            |                                                                                   |            |            |                               |                                                                                     |                                                                 |            |            |        |
| Protection                        | IP67 (IP68 for submersible variant for up to 10 m)                                                                                                                   |                                |            |                                                                                   |            |            |                               |                                                                                     |                                                                 |            |            |        |

| Variant                           | w/ plastic float                                                                                                                                                     |                                                     |                                                                                   |                                                |                                           |                                                                                     |                             |
|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------|-------------------------------------------|-------------------------------------------------------------------------------------|-----------------------------|
|                                   | straight                                                                                                                                                             | angled                                              |                                                                                   |                                                | submersible                               |                                                                                     |                             |
| Specifications                    |                                                                                     |                                                     |  |                                                |                                           |  |                             |
| Float type                        | P0                                                                                                                                                                   | N1                                                  | P1                                                                                | P10                                            | P2                                        | P3                                                                                  | P4                          |
| Float material                    | PP                                                                                                                                                                   | NBR                                                 | PP                                                                                | PP                                             | PP                                        | PP                                                                                  | PVDF                        |
| Liquid density [g/cm³]            | > 0.73                                                                                                                                                               | > 0.60                                              | > 0.60                                                                            | > 0.72                                         | > 0.60                                    | > 0.50                                                                              | > 0.70                      |
| Ext. tube diameter ('d')          | 6 mm                                                                                                                                                                 | 8 mm                                                | 8 mm                                                                              | 10 mm                                          | 12 mm                                     | 16 mm                                                                               | 16 mm                       |
| Contact type                      | reed contact: NO, NC, or NO/NC                                                                                                                                       |                                                     |                                                                                   |                                                |                                           |                                                                                     |                             |
| Contact ratings                   | '1': max. 120 VAC, max. 0.5 A, max. 10 W; '2': max. 230 VAC, max. 0.5 A, max. 10 W; '3': max. 230 VAC, max. 2 A, max. 50 W                                           |                                                     |                                                                                   |                                                |                                           |                                                                                     |                             |
| Probe length ('L')                | ≈ 24 mm                                                                                                                                                              | ≈ 33 mm                                             | ≈ 30 mm                                                                           | ≈ 19 mm                                        | 60...65 mm                                | 70...75 mm                                                                          | 70...75 mm                  |
| Process temperature               | -20...80 °C <sup>(3)</sup>                                                                                                                                           | -20...100 °C <sup>(3)</sup>                         | -20...80 °C <sup>(3)</sup>                                                        | -20...80 °C <sup>(3)</sup>                     | -10...80 °C <sup>(3)</sup>                | -10...80 °C <sup>(3)</sup>                                                          | -30...125 °C <sup>(3)</sup> |
| Ambient temperature               | PVC cable: -20...75 °C; silicone or Teflon® cable: -20...150 °C; PUR cable: -20...80 °C                                                                              |                                                     |                                                                                   |                                                |                                           |                                                                                     |                             |
| Max. process pressure             | 5 bar                                                                                                                                                                | 0 bar                                               | 5 bar                                                                             | 5 bar                                          | 3 bar                                     | 3 bar                                                                               | 2 bar                       |
| Process connection <sup>(1)</sup> | M8, M10, M12, M14, M16, M18, M20, 1/8", 1/4" 3/8", 1/2"                                                                                                              | M10, M12, M14, M16, M18, M20, M27, 1/8", 1/4", 3/8" | M10, M12, M14, M16, M18, M20, 1/8", 1/4", 3/8", 1/2"                              | M12, M14, M16, M18, M20, M27, 1/4", 3/8", 1/2" | M14, M16, M18, M20, M27, 1/4", 3/8", 1/2" | M20, M27, M33, 1/2", 3/4"                                                           | M20, M27, M33, 1/2", 3/4"   |
| Wiring                            | up to 10 m flexible cable: PVC, silicone, or Teflon® (2...4 x 0.25 mm <sup>2</sup> , OD 4...5 mm) or PUR <sup>(2)</sup> (2...4 x 0.50 mm <sup>2</sup> , OD 6...8 mm) |                                                     |                                                                                   |                                                |                                           |                                                                                     |                             |
| Wetted parts                      | stainless steel (except float)                                                                                                                                       |                                                     |                                                                                   |                                                |                                           |                                                                                     |                             |
| Protection                        | IP67 (IP68 for submersible variant for up to 10 m)                                                                                                                   |                                                     |                                                                                   |                                                |                                           |                                                                                     |                             |

<sup>(1)</sup> Includes stainless mounting nut and washer; none for the submersible variant

<sup>(2)</sup> Ask for compatibility with d=8/10 mm!

<sup>(3)</sup> Up to 75 °C with PVC cable

### Ordering code LCSF★ - G1.G2'2".G8.G9.G10.G14 - #1

| Code | Feature or option                 | Code values                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|------|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ★    | Variant                           | <b>I</b> - straight, <b>L</b> - angled, <b>U</b> - submersible                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| G1   | Float                             | <b>N1</b> - NBR, ø17.5x25, <b>P0</b> - PP, ø19x16, <b>P1</b> - PP, ø24x22, <b>P2</b> - PP, ø29x50, <b>P3</b> - PP, ø38x60, <b>P4</b> - PVDF, ø38x60, <b>P10</b> - PP, ø29x11, <b>S0</b> - stainless steel, ø25x24, <b>S1</b> - stainless steel, ø28x28, <b>S2</b> - stainless steel, ø41x38, <b>S3</b> - stainless steel, ø45x55, <b>S4</b> - stainless steel, ø52x52, <b>S5</b> - stainless steel, ø73x73, <b>S6</b> - stainless steel, ø75x108, <b>S7</b> - stainless steel, ø30x28, <b>S10</b> - stainless steel, ø30x32, <b>S11</b> - stainless steel, ø51x61, <b>S20</b> - stainless steel, ø22x40 |
| G2'  | Contact function (no float)       | <b>A</b> - NO (closes at float down), <b>AU</b> - NO (closes at float up), <b>B</b> - NC (opens at float down), <b>BU</b> - NC (opens at float up), <b>C</b> - NO/NC                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| G2"  | Contact ratings                   | <b>1</b> - 120 V / 0.5 A / 10 W, <b>2</b> - 230 V / 0.5 A / 10 W <sup>(4)</sup> , <b>3</b> - 230 V / 2 A / 50 W                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| G8   | Cable length 'k' [m] and type     | <b>1PV...10PV</b> - PVC, <b>1SL...10SL</b> - silicone, <b>1TF...10TF</b> - Teflon®, <b>1PU...10PU</b> - polyurethane                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| G9   | Process connection <sup>(1)</sup> | <b>X</b> - none, <b>Q0</b> - M16x1.5, <b>Q1</b> - M18x1.5, <b>Q2</b> - M20x1.5, <b>Q3</b> - G3/8", <b>Q4</b> - G1/2", <b>Q5</b> - M27x2, <b>Q6</b> - G3/4", <b>Q7</b> - M12x1.5, <b>Q8</b> - M14x1.5, <b>Q10</b> - 1/2" NPT, <b>Q11</b> - 3/4" NPT, <b>Q12</b> - G1", <b>Q15</b> - 1" NPT, <b>Q18</b> - G1/8", <b>Q19</b> - 1/8" NPT, <b>Q20</b> - M10x1, <b>Q23</b> - G1/4", <b>Q24</b> - 1/4" NPT, <b>Q25</b> - M33x2, <b>Q30</b> - M10x1.5, <b>Z</b> - other (specify!)                                                                                                                              |
| G10  | Sheath material                   | <b>M1</b> - 1.4301, <b>M2</b> - 1.4541, <b>M3</b> - 1.4571, <b>M9</b> - 1.4404                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| G14  | Grounding                         | <b>X</b> - none, <b>G</b> - grounded <sup>(5)</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| #1   | Options                           | <b>X</b> - none, <b>OP</b> - electrochemically polished sheath surface                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

<sup>(4)</sup> B2 and C2 are not available!

<sup>(5)</sup> Occupies 1 wire! Ask for availability!