

# LW2120

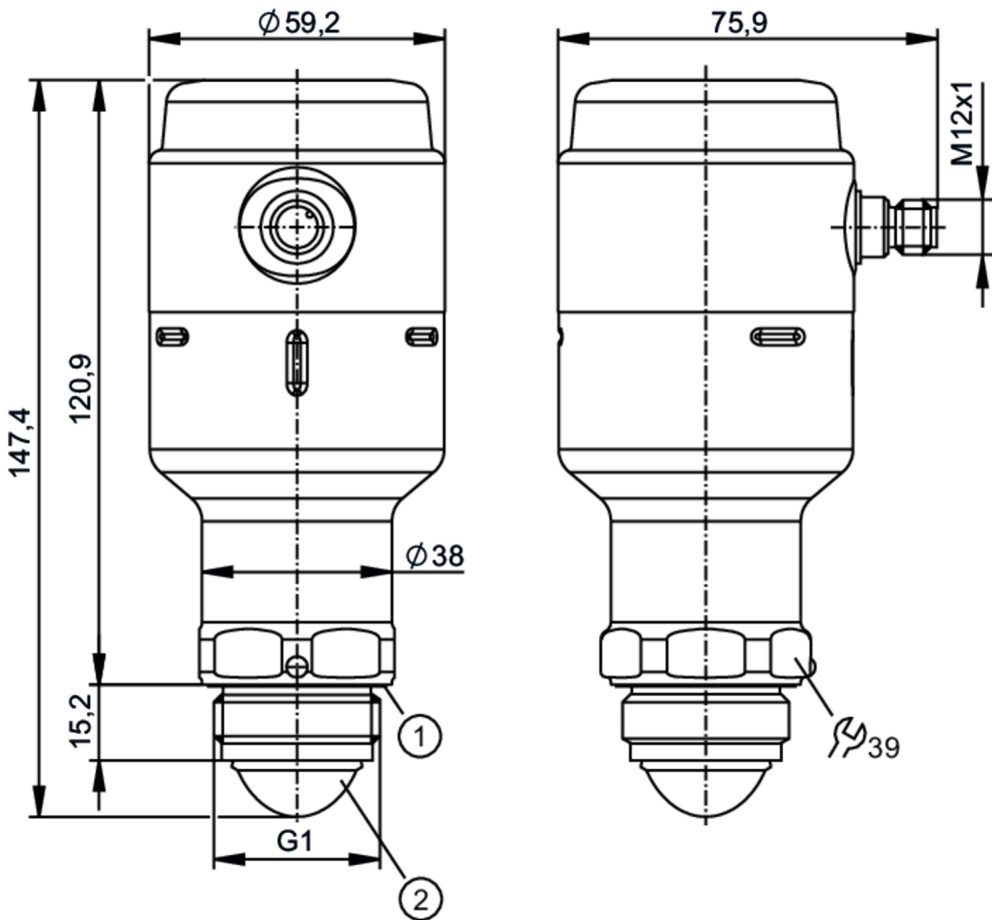


## Continuous level sensor

NON-CONTACT LEVEL TRANSMITTER

An IO-Link master and a parameter setting software (e.g. moneo or LR DEVICE) are required for initial set-up.

For high process temperatures: The temperature at the process connection is decisive. The actual medium temperature may be higher.  
use according to FDA compliance only in conjunction with a hygienic adapter



- 1 sealing
- 2 Antenna



### Product characteristics

|                              |                                                           |
|------------------------------|-----------------------------------------------------------|
| Number of inputs and outputs | Number of digital outputs: 1; Number of analog outputs: 1 |
| Process connection           | G 1 Aseptoflex Vario                                      |

### Application

|                                             |                                                 |
|---------------------------------------------|-------------------------------------------------|
| System                                      | gold-plated contacts                            |
| Dielectric constant of the medium           | $\geq 2$                                        |
| Recommended media                           | water; water-based media                        |
| Process temperature [°C]                    | -40...150; (see diagram and note under remarks) |
| Maximum speed of the change of level [mm/s] | 200                                             |
| Pressure rating [bar]                       | 8                                               |
| Note on pressure rating                     | 0 bar at medium temperature < - 20 C            |



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|                                                 |        |                                                                                                                                             |
|-------------------------------------------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------|
| Vacuum resistance                               | [mbar] | -1000                                                                                                                                       |
| MAWP (for applications according to CRN)        | [bar]  | 8                                                                                                                                           |
| Radio approval for                              |        | EU/RED; Great Britain; South Korea; USA; Canada; Australia; New Zealand; Vietnam; Singapore; Argentina; Brazil; Japan; Taiwan; South Africa |
| Note on radio approval                          |        | The list of countries applying the European Radio Equipment Directive 2014/53/EU (RED) can be found under "Downloads".                      |
| <b>Electrical data</b>                          |        |                                                                                                                                             |
| Operating voltage                               | [V]    | 18...30 DC                                                                                                                                  |
| Current consumption                             | [mA]   | < 80                                                                                                                                        |
| Protection class                                |        | III                                                                                                                                         |
| Reverse polarity protection                     |        | yes                                                                                                                                         |
| Power-on delay time                             | [s]    | < 15                                                                                                                                        |
| Measuring principle                             |        | FMCW (80 GHz technology); frequency range 77 - 81 Hz                                                                                        |
| <b>Inputs / outputs</b>                         |        |                                                                                                                                             |
| Number of inputs and outputs                    |        | Number of digital outputs: 1; Number of analog outputs: 1                                                                                   |
| <b>Outputs</b>                                  |        |                                                                                                                                             |
| Total number of outputs                         |        | 2                                                                                                                                           |
| Output signal                                   |        | switching signal; analog signal; IO-Link                                                                                                    |
| Electrical design                               |        | PNP/NPN                                                                                                                                     |
| Number of digital outputs                       |        | 1; (2 configurable)                                                                                                                         |
| Output function                                 |        | normally open / closed; (configurable)                                                                                                      |
| Max. voltage drop switching output DC           | [V]    | 2.5                                                                                                                                         |
| Permanent current rating of switching output DC | [mA]   | 50                                                                                                                                          |
| Number of analog outputs                        |        | 1                                                                                                                                           |
| Analog current output                           | [mA]   | 4...20, invertible; (scalable)                                                                                                              |
| Max. load                                       | [Ω]    | $43,5 \cdot (U_b - 18) + 600 \Omega$                                                                                                        |
| Short-circuit protection                        |        | yes                                                                                                                                         |
| Type of short-circuit protection                |        | yes (non-latching)                                                                                                                          |
| Overload protection                             |        | yes                                                                                                                                         |
| <b>Measuring/setting range</b>                  |        |                                                                                                                                             |
| Measuring range                                 | [m]    | 10; (see diagram:)                                                                                                                          |
| Sampling rate                                   | [Hz]   | > 3                                                                                                                                         |
| <b>Accuracy / deviations</b>                    |        |                                                                                                                                             |
| Accuracy                                        |        | ± 2 mm                                                                                                                                      |
| Resolution                                      | [mm]   | 1                                                                                                                                           |
| Zero signal (current)                           | [mA]   | 3.8                                                                                                                                         |
| Full signal (current)                           | [mA]   | 20.5                                                                                                                                        |
| Temperature drift per 10 K                      |        | ± 1 mm                                                                                                                                      |
| <b>Reaction times</b>                           |        |                                                                                                                                             |
| Response time                                   | [ms]   | 330                                                                                                                                         |



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| Interfaces                                        |                                                                                                                                                                                                                                                                                                                                |                                                                                              |
|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| Communication interface                           | IO-Link                                                                                                                                                                                                                                                                                                                        |                                                                                              |
| Transmission type                                 | COM2 (38,4 kBaud)                                                                                                                                                                                                                                                                                                              |                                                                                              |
| IO-Link revision                                  | 1.1                                                                                                                                                                                                                                                                                                                            |                                                                                              |
| SDCI standard                                     | IEC 61131-9                                                                                                                                                                                                                                                                                                                    |                                                                                              |
| Profiles                                          | Smart Sensor ED2: SSCs (0x8001), Measuring Sensor (0x000A)                                                                                                                                                                                                                                                                     |                                                                                              |
| SIO mode                                          | yes                                                                                                                                                                                                                                                                                                                            |                                                                                              |
| Required master port class                        | A                                                                                                                                                                                                                                                                                                                              |                                                                                              |
| Process data analog                               | 1                                                                                                                                                                                                                                                                                                                              |                                                                                              |
| Process data binary                               | 2                                                                                                                                                                                                                                                                                                                              |                                                                                              |
| Min. process cycle time [ms]                      | 6                                                                                                                                                                                                                                                                                                                              |                                                                                              |
| Supported DeviceIDs                               | Type of operation                                                                                                                                                                                                                                                                                                              | DeviceID                                                                                     |
|                                                   | default                                                                                                                                                                                                                                                                                                                        | 1532                                                                                         |
| Operating conditions                              |                                                                                                                                                                                                                                                                                                                                |                                                                                              |
| Ambient temperature [°C]                          | -40...80                                                                                                                                                                                                                                                                                                                       |                                                                                              |
| Note on ambient temperature                       | see diagram:                                                                                                                                                                                                                                                                                                                   |                                                                                              |
| Storage temperature [°C]                          | -40...90                                                                                                                                                                                                                                                                                                                       |                                                                                              |
| Protection                                        | IP 68; IP 69K                                                                                                                                                                                                                                                                                                                  |                                                                                              |
| Tests / approvals                                 |                                                                                                                                                                                                                                                                                                                                |                                                                                              |
| EMC                                               | DIN EN 61326-1                                                                                                                                                                                                                                                                                                                 | group 1: Class A (IO-Link active); B (IO-Link not active, with analog and switching outputs) |
| Shock resistance                                  | DIN EN 60068-2-27                                                                                                                                                                                                                                                                                                              | 50 g (11 ms) / 20 g (6 ms)                                                                   |
| Vibration resistance                              | IEC 61298-3                                                                                                                                                                                                                                                                                                                    | 2 g (10...1000 Hz)                                                                           |
| MTTF [years]                                      | 330                                                                                                                                                                                                                                                                                                                            |                                                                                              |
| Mechanical data                                   |                                                                                                                                                                                                                                                                                                                                |                                                                                              |
| Weight [g]                                        | 723.8                                                                                                                                                                                                                                                                                                                          |                                                                                              |
| Material                                          | stainless steel (1.4404 / 316L); PA; FKM; FVMQ                                                                                                                                                                                                                                                                                 |                                                                                              |
| Materials (wetted parts)                          | PTFE; EPDM; FVMQ when used without Aseptoflex Vario adapter                                                                                                                                                                                                                                                                    |                                                                                              |
| Process connection                                | G 1 Aseptoflex Vario                                                                                                                                                                                                                                                                                                           |                                                                                              |
| Surface characteristics Ra/Rz of the wetted parts | < 0.76                                                                                                                                                                                                                                                                                                                         |                                                                                              |
| Remarks                                           |                                                                                                                                                                                                                                                                                                                                |                                                                                              |
| Notes                                             | An IO-Link master and a parameter setting software (e.g. moneo or LR DEVICE) are required for initial set-up.; For high process temperatures: The temperature at the process connection is decisive. The actual medium temperature may be higher.; use according to FDA compliance only in conjunction with a hygienic adapter |                                                                                              |
| Pack quantity                                     | 1 pcs.                                                                                                                                                                                                                                                                                                                         |                                                                                              |

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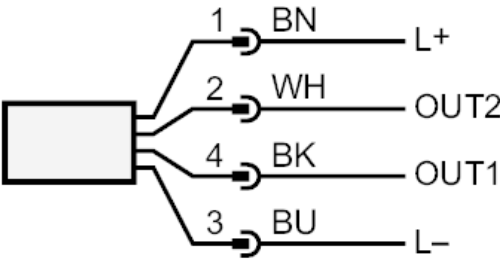
NON-CONTACT LEVEL TRANSMITTER

### Electrical connection

Connector: 1 x M12; coding: A; Contacts: gold-plated



### Connection



OUT1: Switching output IO-Link  
OUT2: Switching output analog output  
Colors to DIN EN 60947-5-2  
Core colors :  
BK = black  
BN = brown  
BU = blue  
WH = white

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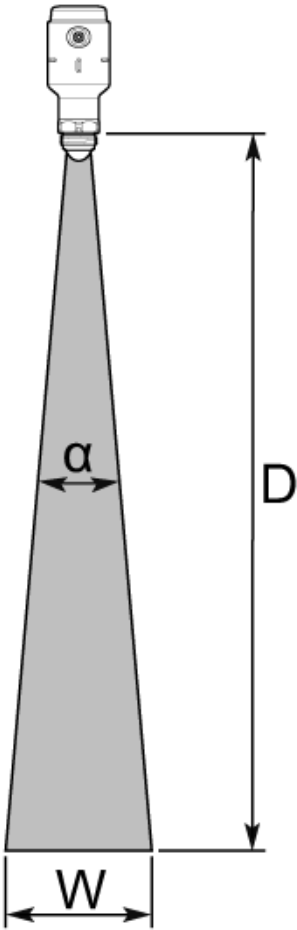


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### Diagrams and graphs

Angle of radiation

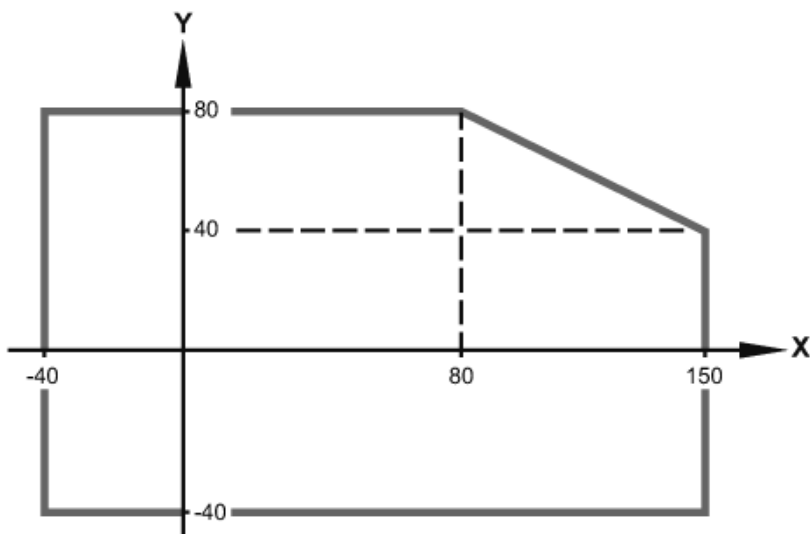


|          |                                                                              |
|----------|------------------------------------------------------------------------------|
| distance |                                                                              |
| (D)      | Beam width (W) 8° (with antenna extension) / 10° (without antenna extension) |
| 2 m      | 0.3 m / 0.4 m                                                                |
| 4 m      | 0.6 m / 0.7 m                                                                |
| 6 m      | 0.8 m / 1.1 m                                                                |
| 8 m      | 1.1 m / 1.4 m                                                                |
| 10 m     | 1.4 m / 1.8 m                                                                |

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X process temperature °C

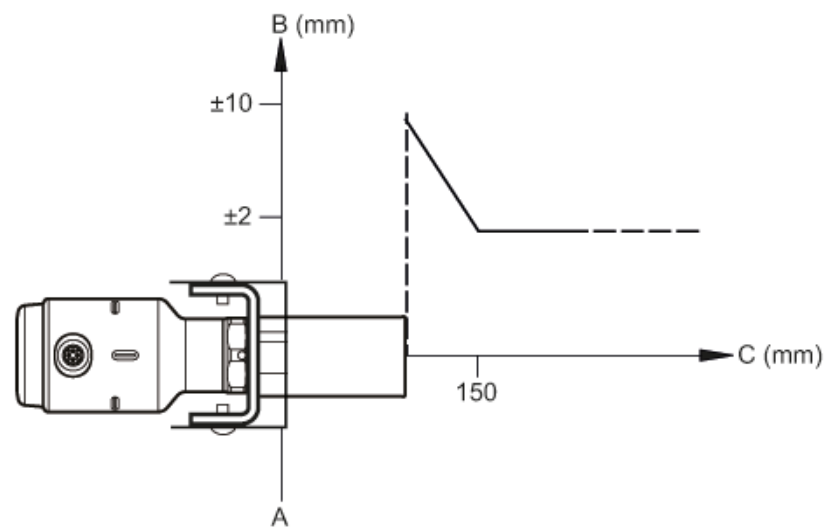
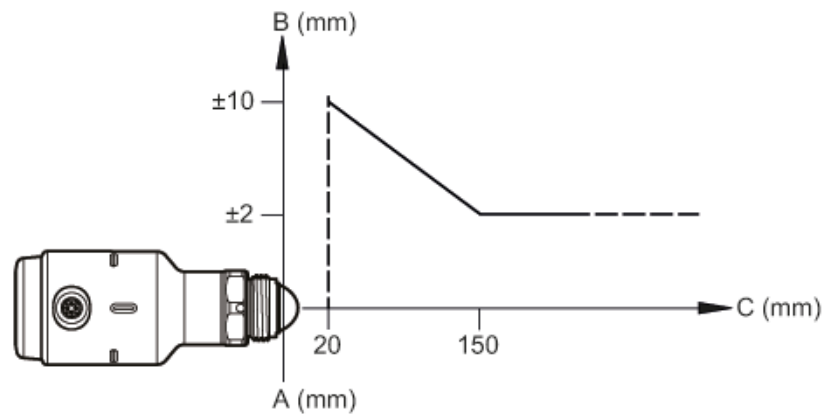
Y Ambient temperature °C

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- A device reference point
- B Accuracy
- C distance