

## 3D Sensor

### MLAS201

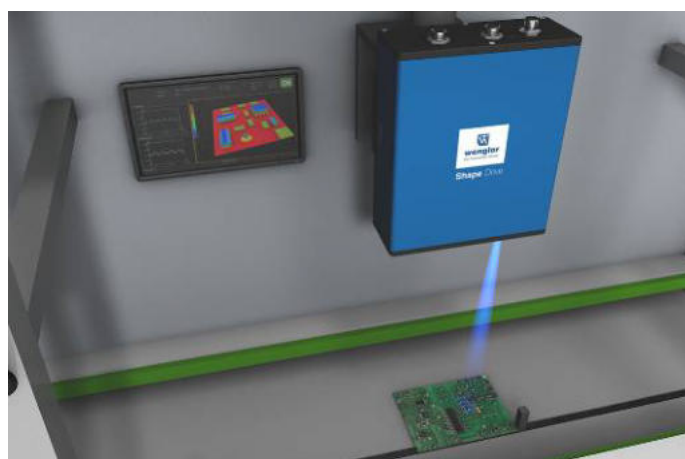
Part Number

ShapeDrive



- 10 Gbit/s interface for high speed data transfer
- 12 MP resolution
- Short recording times of up to 0.44 s

ShapeDrive MLAS 3D Sensors are distinguished by high precision for minimal measuring volumes. The ten models in this series are available in two performance classes with camera resolutions of 5 and 12 megapixels. All ShapeDrive sensors are ideally suited for use in industrial environments thanks to the rugged IP65 housing. With its 10 Gigabit Ethernet interface and five measuring ranges in each performance class, ShapeDrive is also distinguished by great diversity and high speed.



#### Technical Data

##### Optical Data

|                           |                   |
|---------------------------|-------------------|
| Working range Z           | 160...170 mm      |
| Measuring range Z         | 10 mm             |
| Measuring range X         | 30 mm             |
| Measuring range Y         | 22 mm             |
| Resolution Z              | 3 µm              |
| Resolution X/Y            | 9 µm              |
| Camera Resolution         | 4096 × 3000 Pixel |
| Light Source              | LED (blue)        |
| Wavelength                | 460 nm            |
| Service Life (T = +25 °C) | 20000 h           |
| Risk Group (EN 62471)     | 2                 |
| Max. Ambient Light        | 5000 Lux          |

##### Electrical Data

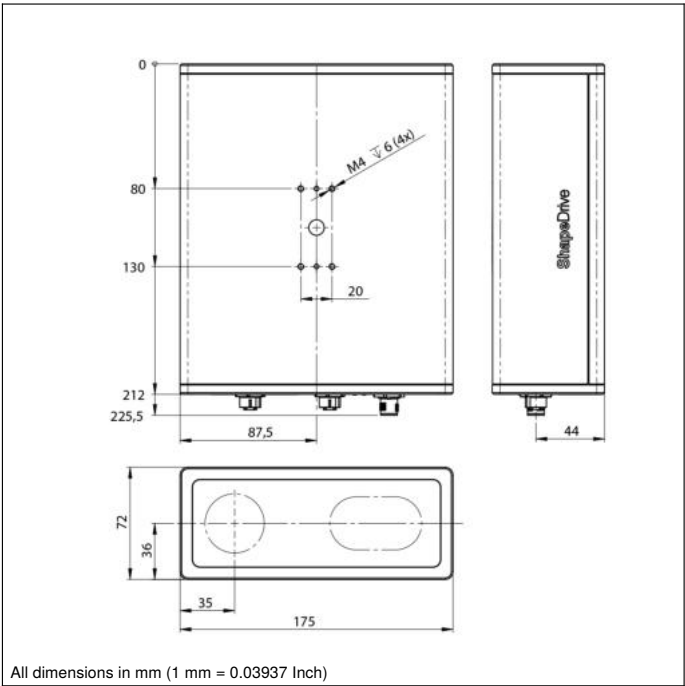
|                                      |                 |
|--------------------------------------|-----------------|
| Supply Voltage                       | 18...30 V DC    |
| Max. Current Consumption (Ub = 24 V) | 3,5 A           |
| Recording duration                   | 0,44...2,15 s   |
| Temperature Range                    | 0...35 °C       |
| Storage temperature                  | -5...70 °C      |
| Short Circuit Protection             | yes             |
| Reverse Polarity Protection          | yes             |
| Interface                            | Ethernet TCP/IP |
| Baud Rate                            | 100 Mbit/s      |
| Baud Rate (10 GbE)                   | 10 Gbit/s       |
| Protection Class                     | III             |

##### Mechanical Data

|                             |                        |
|-----------------------------|------------------------|
| Housing Material            | Aluminium; Plastic     |
| Degree of Protection        | IP65                   |
| Connection                  | M12 × 1; 12-pin        |
| Type of Connection Ethernet | M12 × 1; 8-pin, X-cod. |
| Optic Cover                 | Plastic                |
| Weight                      | 2500 g                 |

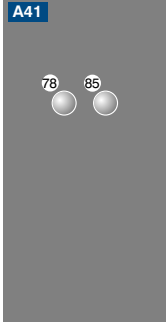
|            |     |
|------------|-----|
| Web server | yes |
|------------|-----|

|                                   |     |      |
|-----------------------------------|-----|------|
| Connection Diagram No.            | 238 | 1022 |
| Control Panel No.                 | A41 |      |
| Suitable Connection Equipment No. | 50  | 87   |
| Suitable Mounting Technology No.  | 343 |      |

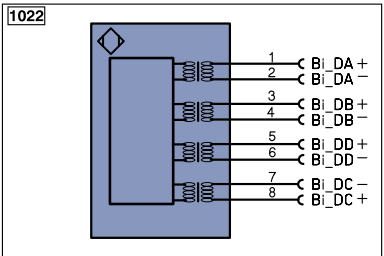
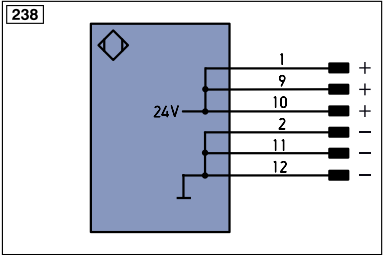


All dimensions in mm (1 mm = 0.03937 Inch)

### Ctrl. Panel



78 = Module status  
85 = Link/Act LED



### Legend

|          |                                            |       |                                |                                    |                     |
|----------|--------------------------------------------|-------|--------------------------------|------------------------------------|---------------------|
| +        | Supply Voltage +                           | PT    | Platinum measuring resistor    | ENAR5422                           | Encoder A/Ä (TTL)   |
| -        | Supply Voltage 0 V                         | nc    | not connected                  | ENB5422                            | Encoder B/B̄ (TTL)  |
| ~        | Supply Voltage (AC Voltage)                | U     | Test Input                     | ENA                                | Encoder A           |
| A        | Switching Output (NO)                      | U     | Test Input inverted            | ENB                                | Encoder B           |
| Ä        | Switching Output (NC)                      | W     | Trigger Input                  | AMIN                               | Digital output MIN  |
| V        | Contamination/Error Output (NO)            | W-    | Ground for the Trigger Input   | AMAX                               | Digital output MAX  |
| V̄       | Contamination/Error Output (NC)            | O     | Analog Output                  | AOK                                | Digital output OK   |
| E        | Input (analog or digital)                  | O-    | Ground for the Analog Output   | SY in                              | Synchronization In  |
| T        | Teach Input                                | BZ    | Block Discharge                | SY OUT                             | Synchronization OUT |
| Z        | Time Delay (activation)                    | AMV   | Valve Output                   | OLT                                | Brightness output   |
| S        | Shielding                                  | a     | Valve Control Output +         | M                                  | Maintenance         |
| RxD      | Interface Receive Path                     | b     | Valve Control Output 0 V       | rsv                                | reserved            |
| TxD      | Interface Send Path                        | SY    | Synchronization                | Wire Colors according to IEC 60757 |                     |
| RDY      | Ready                                      | SY-   | Ground for the Synchronization | BK                                 | Black               |
| GND      | Ground                                     | E+    | Receiver-Line                  | BN                                 | Brown               |
| CL       | Clock                                      | S+    | Emitter-Line                   | RD                                 | Red                 |
| E/A      | Output/Input programmable                  | ±     | Grounding                      | OG                                 | Orange              |
| IO-Link  | IO-Link                                    | SnR   | Switching Distance Reduction   | YE                                 | Yellow              |
| PoE      | Power over Ethernet                        | Rx+/- | Ethernet Receive Path          | GN                                 | Green               |
| IN       | Safety Input                               | Tx+/- | Ethernet Send Path             | BU                                 | Blue                |
| OSSD     | Safety Output                              | Bus   | Interfaces-Bus A(+)/B(-)       | VT                                 | Violet              |
| Signal   | Signal Output                              | La    | Emitted Light disengageable    | GY                                 | Grey                |
| BI_D+/-  | Ethernet Gigabit bidirect. data line (A-D) | Mag   | Magnet activation              | WH                                 | White               |
| EN0.5422 | Encoder 0-pulse 0-0 (TTL)                  | RES   | Input confirmation             | PK                                 | Pink                |
|          |                                            | EDM   | Contact Monitoring             | GNYE                               | Green/Yellow        |

### Measuring Volume

