

Certified according to DIN EN ISO 9001

Technical Datasheet



ZHM...CT Series

Gear Flow Meters in Cartridge Design

For paint applications, optimized with regard to flushing and to weight

Application

The products of the series ZHM CT (cartouche) are also suitable for media with fillers, clear varnishes, water-based varnishes and solvent-based varnishes. Similarly, the products ZHM CT can be used in equipment for cavity spraying with protective anticorrosion agents and for abrasive media. Short reaction times and accurate measurement while dosing and flow rate measuring allow applications in the field of automotive industry, such as painting facilities, preservation facilities and other equipment for coatings.

The painting version with optimized seal of dead space and free axes cares about the optimal possibility of flushing out. Short flushing cycles enable not only quick change of colour but they also contribute significantly to complying with VOC directives. This may also significantly influence the improvement of potential cost saving as well as optimize the painting processes.

For applications with electrostatic paint devices (ESTA) the impulse amplifier with fibre optic technology FOP 60 has been developed. The fibre optic technology principle guarantees trouble-free transmission of signals in the area with strong electric fields.

We offer a self-locking sensor and amplifier with the explosion suppression protection "Ex" for applications in the zones with explosion hazard EX – Zone 1.

Principle and Design

This series ZHM is characterized by numerous models for various applications, for example painting versions with optimized flat seals of dead spaces (dead space) and free axes for optimized option of flushing out. For critical varnishes there are available versions with special bearings and with special surface treatment. Connecting adapter is available to be supplied optionally.

The cartouche design reduces the weight compared to the standard versions up to 75 % and allows thereby mounting directly on the robot arm without limiting the dynamic characteristics.

The newly designed measuring insertion show high resolution and enables precise measurements to a large measuring extent which in the past could only be provided by two measuring cells.

Applications

- Paints, also water based
- Wax
- ESTA-Systems

Features

- High resolution
- Low weight
- Disturbance-free signal transmission
- Compact Design
- Short flushing cycles

Technical Data

| Type | Measuring range, l/min | K-Factor, pulses/l ¹⁾ | max. Pressure, bar | Frequency, in Hz ¹⁾ | Weight, kg |
|--------------|---------------------------|-------------------------------------|-----------------------|-----------------------------------|---------------|
| ZHM 01/1 CT* | 0,005 to 2 | 26.500 | 315 | 2,2 to 880 | 0,4 |
| ZHM 01/2 CT* | 0,02 to 3 | 14.000 | 315 | 4,6 to 700 | 0,5 |

1) Average values with single-pickup TYP VTE. Use twin-pickup for higher resolution.

* Detailed type code on request

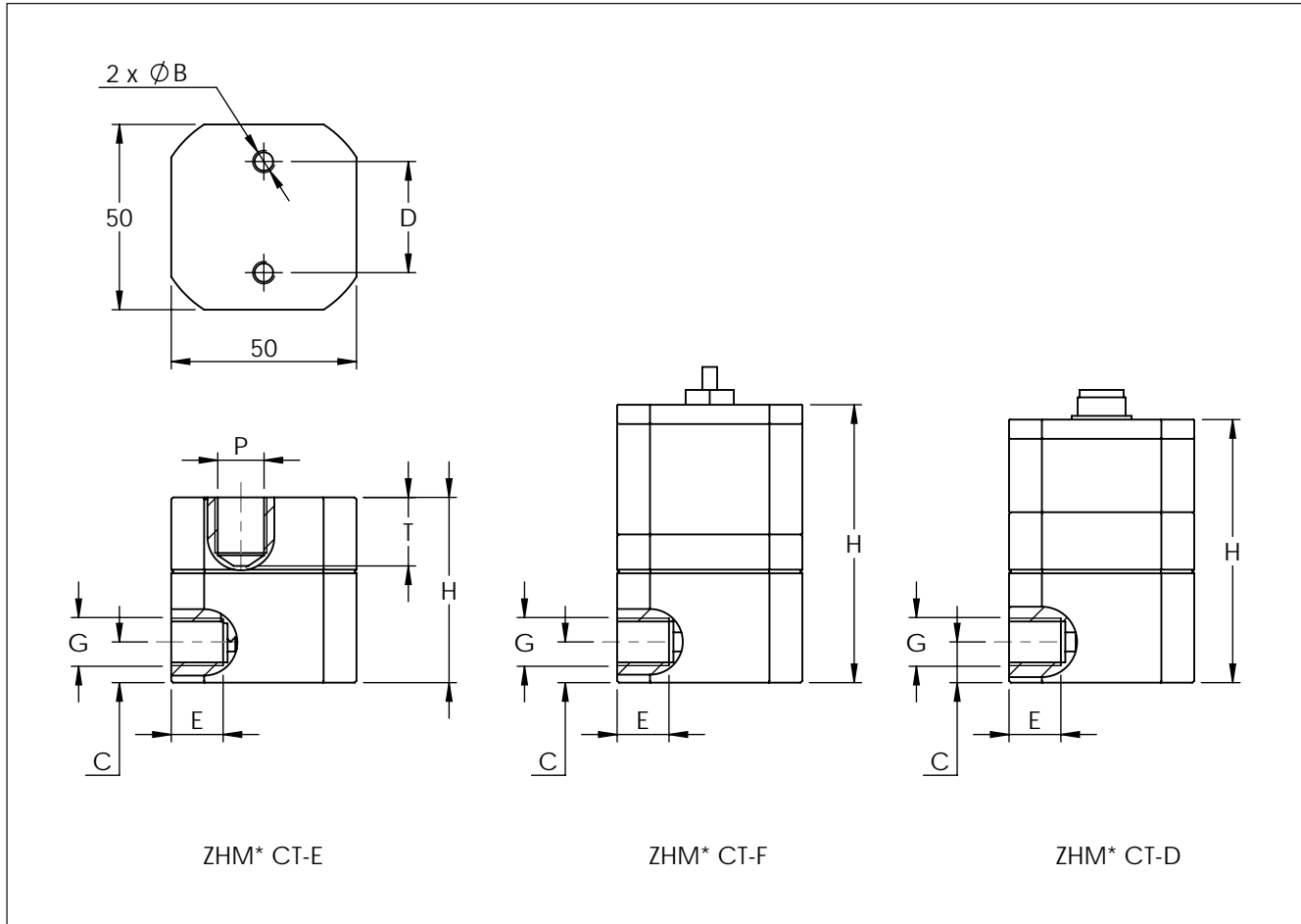
| General | |
|--------------------|--|
| Linearity | ± 0,5% of actual flow (≥ 30 mm ² /s) |
| Repeatability | ± 0,1% |
| Materials | Housing: as per DIN 1.4305 (SS303) / 1.4404 (SS316L) Gears: as per DIN 1.4122 / 1.4501 Bearing: Carbide, ball bearings Sealing: FKM, PTFE |
| Medium temperature | -20°C to +150°C (higher temperatures on request) |
| Dimensions | See drawing (page 4 to 5) |

Pickup Selection

| Criteria | Type | VTE * | WT */ WI* | VIE * | IF */ VIEG | VTC * | VTB * | TD * | VHE * | FOP * |
|--------------------------------|----------|-----------------------------|-----------|-------|------------|-------|-------|------|-------|-------|
| | | Drilling type ¹⁾ | E | E | E | E | E | E | D | E |
| Medium temperature | ≤ +70°C | | | | | | | ✓ | | |
| | ≤ +120°C | | | | | ✓ | ✓ | | ✓ | ✓ |
| | ≤ +150°C | ✓ | ✓ | ✓ | | | | | | |
| | ≤ +350°C | | | | ✓ | | | | | |
| EX-Approval | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ |
| Frequency output | ✓ | ✓ | ✓ | ✓ | ✓ | | | ✓ | ✓ | ✓ |
| Dual frequency output | | | | | | | | ✓ | | |
| Analogue output 4 - 20 mA | | ✓ | | | | ✓ | | | | |
| Forward / backward recognition | | | | | | | | ✓ | | |
| Display Vorort | | | | | | ✓ | ✓ | | | |
| Linearization | | ✓ | | | | ✓ | | | | |
| Supply 12 - 24 V | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | |
| Supply battery | | | | | | | ✓ | | | ✓ |
| Interface | | ✓ | | | | ✓ | | | | |

1) Drilling types: E: single pickup / D: dual pickup / F: FOP-pickup
* Ordering code (please see separate datasheet)

Dimensional Drawings (mm) - ZHM 01/1 to 01/2 with a side connecting thread

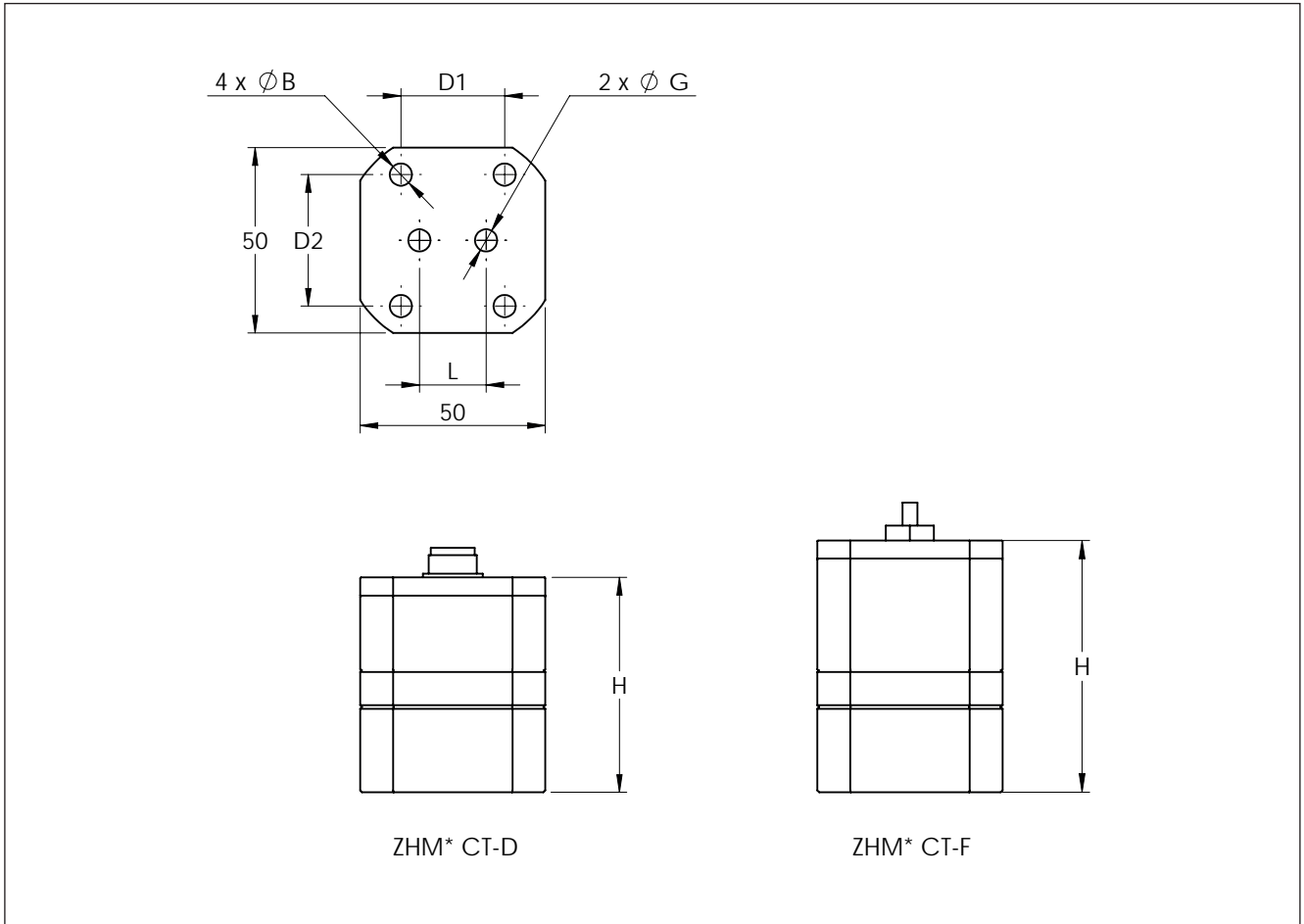


| ZHM Type | ØB | C | D | E | G | H | P ¹⁾ | T ²⁾ |
|---------------|---------|----|----|----------|-------|----|-----------------|-----------------|
| ZHM 01/1 CT-D | M6 ↓ 10 | 11 | 30 | 10 | G1/4" | 65 | - | - |
| ZHM 01/2 CT-E | M6 ↓ 10 | 11 | 30 | 14 | G1/4" | 50 | E | 18.5 |
| ZHM 01/1 CT-E | M6 ↓ 10 | 11 | 30 | 10 | G1/4" | 50 | E | 18.5 |
| ZHM 01/1 CT-F | M6 ↓ 10 | 11 | 30 | 14 10 | G1/4" | 75 | - | - |
| ZHM 01/2 CT-F | M6 ↓ 10 | 11 | 30 | 14 | G1/4" | 75 | - | - |

1) See "Pickup Selection" table (P. 3)

2) Please notice: total height is calculated by adding up the height (H) and the height of the pickup (separate data sheet) and subtract the bore hole depth (T)

Dimensional Drawings (mm) - ZHM 01/1 to 01/2 with bottom inlet

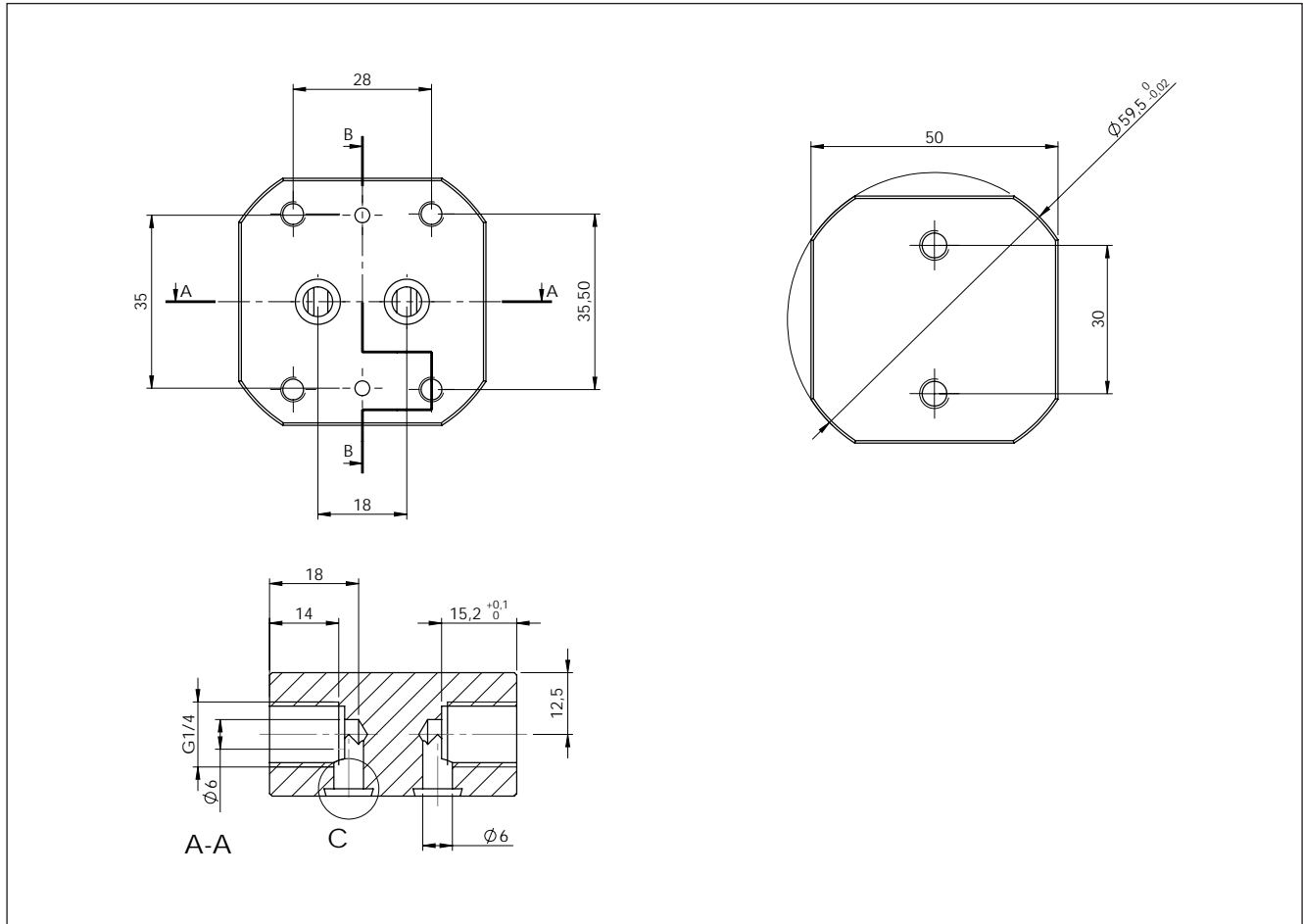


| ZHM Type | ØB | D1 | D2 | G | H | L |
|---------------|-----|----|------|----|----|----|
| ZHM 01/1 CT-D | 5.5 | 28 | 35.5 | Ø6 | 50 | 18 |
| ZHM 01/2 CT-D | 5.5 | 28 | 35.5 | Ø6 | 58 | 18 |
| ZHM 01/1 CT-F | 5.5 | 28 | 35.5 | Ø6 | 60 | 18 |
| ZHM 01/2 CT-F | 5.5 | 28 | 35.5 | Ø6 | 68 | 18 |

1) See "Pickup Selection" table (P. 3)

2) Please notice: total height is calculated by adding up the height (H) and the height of the pickup (separate data sheet) and subtract the bore hole depth (T)

Dimensional Drawings (mm) - adapter plate (optional)



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