



Temperature and water bottom measurement

The VITO family for temperature and water bottom measurement together with the outstanding Enraf tank gauges is the ultimate answer for your inventory control. The VITO-MTT is a robust and reliable device representing the leading edge in sensor technology, fully complying with all major industrial standards.

Its accuracy exceeds the requirements for Weights & Measures accepted temperature information. The VITO-MTT provides average temperature, temperature profiles and vapor temperature can be measured. This parameter can be used for mass calculations of the product in the gas phase, contributing to your loss-gain control. Optionally, a digital water bottom measurement can be integrated to ensure a high accuracy compared to analog probes. The system complies with safety requirements for use in hazardous areas.

VITO MTT Temperature probe

Measuring specifications

| | |
|----------------------|--|
| Temperature range | : See identification code 764 Pos. 2 |
| Accuracy | : $< \pm 0.1 \text{ }^{\circ}\text{C}$ ($0.18 \text{ }^{\circ}\text{F}$) ¹⁾ |
| Measuring resolution | : $0.01 \text{ }^{\circ}\text{C}$ ($0.01 \text{ }^{\circ}\text{F}$) |

Principle

| | |
|---------------------|--|
| Measuring principle | : 16 Temperature elements divided over the sensitive length. 15 Temperature elements divided over the sensitive length (If Pos 8 is C) |
| Reference RTD | : Pt100, accuracy $\pm 0.06 \text{ }^{\circ}\text{C}$ at $0 \text{ }^{\circ}\text{C}$ ($0.11 \text{ }^{\circ}\text{F}$ at $32 \text{ }^{\circ}\text{F}$) |
| Sensor | : Type T (Copper / Constantan), Class 2 according to IEC 584-2 |

VITO Water probe

Measuring specifications

| | |
|-----------------------|---|
| Operating temperature | : $0 \text{ }^{\circ}\text{C}$ to $+100 \text{ }^{\circ}\text{C}$ ($+32 \text{ }^{\circ}\text{F}$ to $+212 \text{ }^{\circ}\text{F}$) |
| Storage temperature | : -55°C to $+135 \text{ }^{\circ}\text{C}$ ($-67 \text{ }^{\circ}\text{F}$ to $+275 \text{ }^{\circ}\text{F}$) |
| Measuring resolution | : 0.1 mm |
| Minimum water level | : 25 mm above lowest part of probe |

VITO MTT Combi probe

Mechanical

| | |
|-----------------------|---|
| Dimensions | : Maximum outer diameter 40 mm |
| Operating temperature | : $0 \text{ }^{\circ}\text{C}$ to $+100 \text{ }^{\circ}\text{C}$ ($+32 \text{ }^{\circ}\text{F}$ to $+212 \text{ }^{\circ}\text{F}$) |
| Storage temperature | : -55°C to $+135 \text{ }^{\circ}\text{C}$ ($-67 \text{ }^{\circ}\text{F}$ to $+275 \text{ }^{\circ}\text{F}$) |
| Adjusting pipe | : Adjustable length $\pm 230 \text{ mm}$, $G\frac{1}{2}$ threaded |

VITO MTT Interface

Mechanical

| | |
|------------------|--|
| Housing material | : Coated aluminum |
| Cable entry | : $M20 \times 1.5$ (standard) $\frac{3}{4}$ " NPT or PG 16 via reducer (optional) |

General

Environmental

| | |
|---------------------|--|
| Ambient temperature | : $-40 \text{ }^{\circ}\text{C}$ to $+60 \text{ }^{\circ}\text{C}$ ($-40 \text{ }^{\circ}\text{F}$ to $+140 \text{ }^{\circ}\text{F}$) |
| Operating pressure | : 5 bar / 500 kPa (72 psi) hydrostatic pressure |
| Safety | : The VITO probe is a passive device and is i.s. for connection with VITO interface - II 1G EEx ia IIB T4 According to ATEX (probes) - Zone 0 Ex ia IIB T4 According to IECEx (probes) - II 1/2G EEx ia IIB T4 According to ATEX (interface) - Zone 0/1 Ex ia IIB T4 According to IECEx (interface) - Class I, Division 1, Groups B 3), C and D, in acc. to NFPA 70 (FM, USA) |

Materials

| | |
|-----------------------------|--|
| Sheathing | : Stainless Steel AISI 316L (Werkstoff 1.4404) corrugated tube |
| Fittings and adjusting pipe | : AISI 316L (Werkstoff 1.4404) Stainless Steel |

Electrical

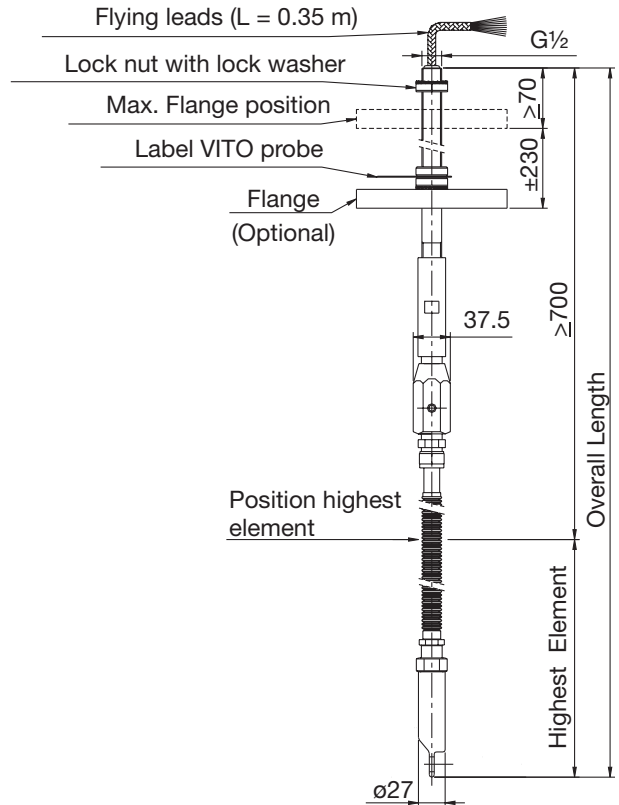
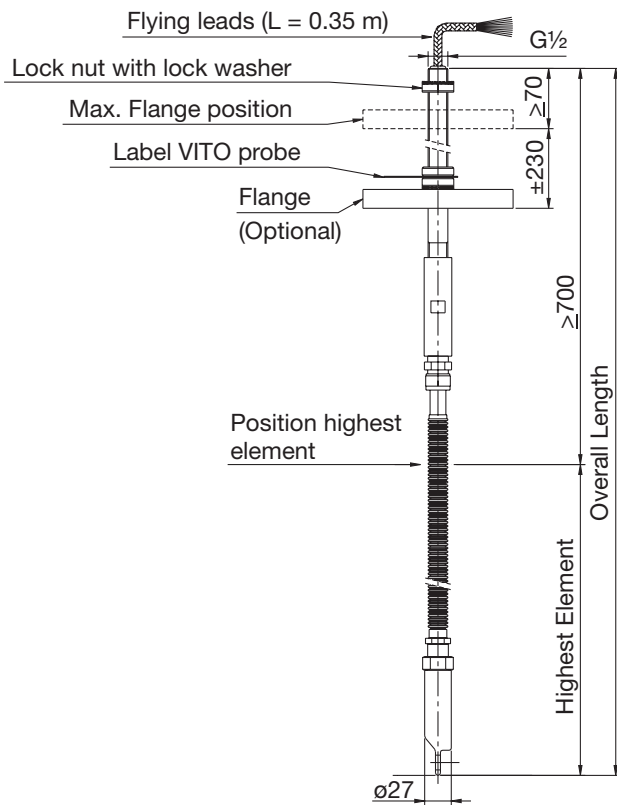
| | |
|------------------|---|
| Connection leads | : PTFE isolated, standard length 0.35 m |
|------------------|---|

Options

| | |
|-----------------|--|
| Mounting flange | : $2"$ 150 lb r.f. with $G\frac{1}{2}$ threaded mounting hole. For other flanges please contact an Enraf office |
| Anchor weight | : max. 23 kg |

¹⁾ Under reference conditions

VITO MTT Temperature probe

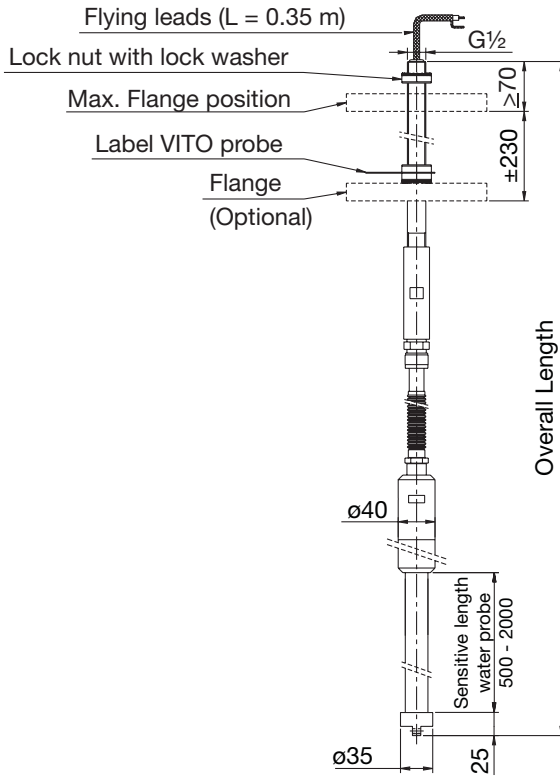


Low temperature version

Identification code 764

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|--|--|---|--|----------------------------|--|------------------------------------|--|---|--|---|--|---|--|---|--|---|--|---|--|---|--|---|--|---|--|---|--|---|--|
| Pos 1 Application | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| U | | General purpose | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| X | | W&M version (additional verification) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pos 2 Temperature range probe | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| S | | Standard : -55 °C to +135 °C (-67 °F to + 275 °F) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C | | Low temperature : -200 °C to +70 °C (-328 °F to + 158 °F) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| H | | High temperature : -55 °C to +200 °C (-67 °F to + 392 °F) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| V | | Very high temperature : -55 °C to +250 °C (-67 °F to + 482 °F) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pos 3 Safety approvals | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A | | ATEX / IECEx Europe / Global | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| F | | FM / CSA USA / Canada | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pos 4 Length of flying leads | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| N | | 35 cm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pos 5, 6, 7 Instrument designation | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | | 6 | | 4 | | VITO MTT temperature probe | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pos 8 Position of lowest temperature element | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C | | Lowest element at 1 meter from bottom of probe | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D | | Lowest element at bottom of probe | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pos 9, 10, 11, 12 Overall length in cm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| * | | * | | * | | 0 | | 0370 to 9990 in steps of 10 cm | | | | | | | | | | | | | | | | | | | | | | | |
| Pos 13, 14, 15, 16 Position of highest temperature element | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| * | | * | | * | | 0 | | 0300 to 9920 in steps of 10 cm | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | (at least 70 cm from top of probe) | | | | | | | | | | | | | | | | | | | | | | | |
| Typical identification code | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| U | | S | | A | | N | | 7 | | 6 | | 4 | | D | | 0 | | 3 | | 7 | | 0 | | 0 | | 3 | | 0 | | 0 | |
| Your identification code | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | N | | 7 | | 6 | | 4 | | | | | | | | 0 | | | | | | | | 0 | | | | | |

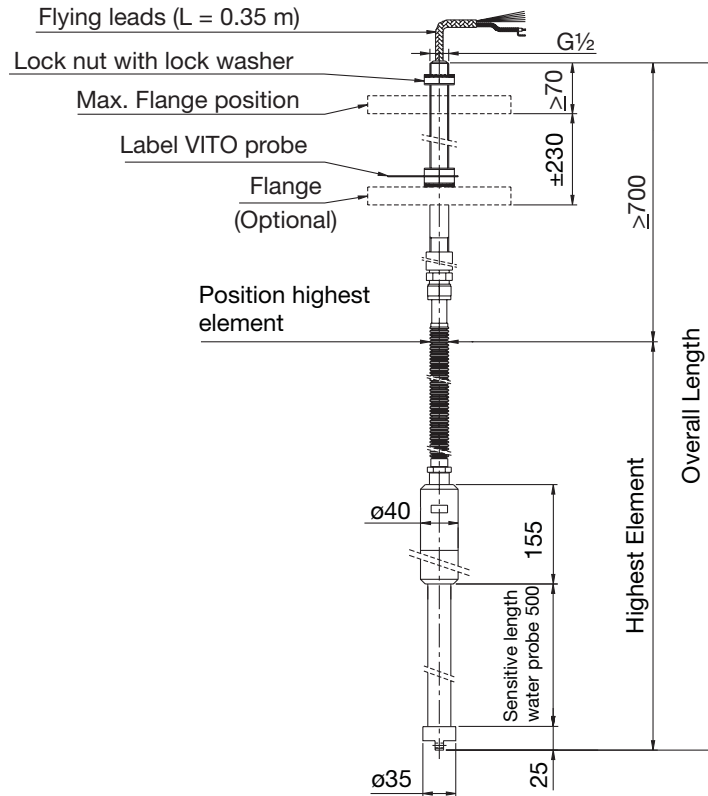
VITO Water probe



Identification code 765

| | | | | | | | | | | | | |
|---|------------------------------|---|------------------|--|---|---|---|---|---|---|---|-----------------------------|
| Pos 1 Application | | | | | | | | | | | | |
| U | General purpose | | | | | | | | | | | |
| Pos 2 Sensitive length for water bottom measurement | | | | | | | | | | | | |
| A | 50 cm (standard) | | | | | | | | | | | |
| B | 100 cm | | | | | | | | | | | |
| C | 200 cm | | | | | | | | | | | |
| Pos 3 Safety approvals | | | | | | | | | | | | |
| A | ATEX / IECEx Europe / Global | | | | | | | | | | | |
| F | FM / CSA USA / Canada | | | | | | | | | | | |
| Pos 4 Length of flying leads | | | | | | | | | | | | |
| N | 35 cm | | | | | | | | | | | |
| Pos 5, 6, 7 Instrument designation | | | | | | | | | | | | |
| 7 | 6 | 5 | VITO water probe | | | | | | | | | |
| Pos 8 Not used | | | | | | | | | | | | |
| * | Position not used | | | | | | | | | | | |
| Pos 9, 10, 11, 12 Overall length in cm | | | | | | | | | | | | |
| * | * | * | 0 | 0260 to 3390 in steps of 10 cm (4") (if Pos 2 = A) | | | | | | | | |
| * | * | * | 0 | 0310 to 3390 in steps of 10 cm (4") (if Pos 2 = B) | | | | | | | | |
| * | * | * | 0 | 0410 to 3390 in steps of 10 cm (4") (if Pos 2 = C) | | | | | | | | |
| | | | | | | | | | | | | |
| U | A | A | N | 7 | 6 | 5 | * | 0 | 2 | 6 | 0 | Typical identification code |
| | | | | | | | | | | | | |
| U | | | N | 7 | 6 | 5 | * | | | | 0 | Your identification code |

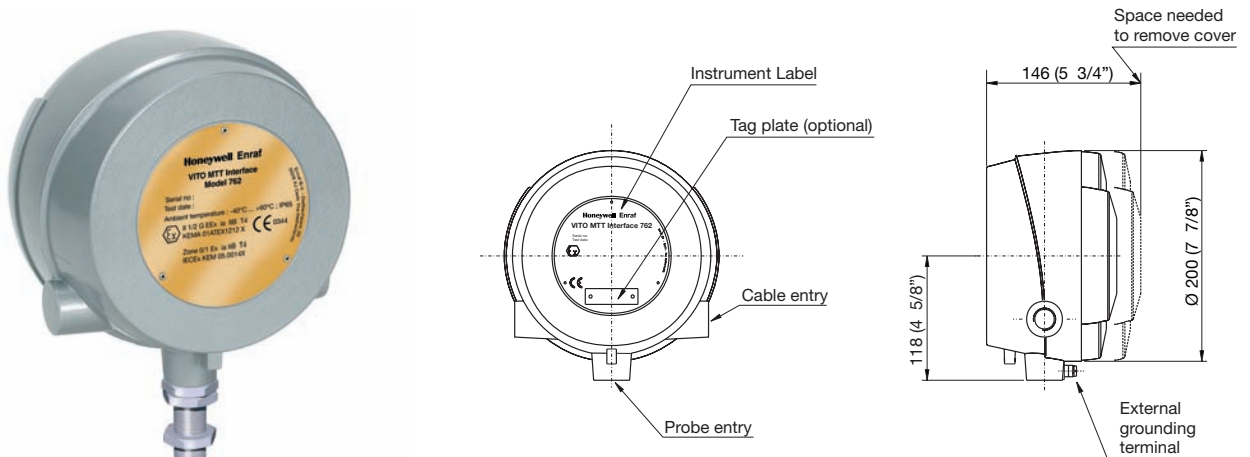
VITO MTT Combi probe



Identification code 766

| | | | | | | | | | | | | | | | |
|--|---|--|---|---|---|----------------------|---|------------------------------------|---|---|---|---|---|---|---|
| Pos 1 Application | | | | | | | | | | | | | | | |
| U | | General purpose | | | | | | | | | | | | | |
| X | | W&M version (additional verification) | | | | | | | | | | | | | |
| Pos 2 Sensitive length for water bottom measurement | | | | | | | | | | | | | | | |
| A | | 50 cm | | | | | | | | | | | | | |
| Pos 3 Safety approvals | | | | | | | | | | | | | | | |
| A | | ATEX / IECEx Europe / Global | | | | | | | | | | | | | |
| F | | FM / CSA USA / Canada | | | | | | | | | | | | | |
| Pos 4 Length of flying leads | | | | | | | | | | | | | | | |
| N | | 35 cm | | | | | | | | | | | | | |
| Pos 5, 6, 7 Instrument designation | | | | | | | | | | | | | | | |
| 7 | | 6 | | 6 | | VITO MTT combi probe | | | | | | | | | |
| Pos 8 Position of lowest temperature element | | | | | | | | | | | | | | | |
| C | | Lowest element at 1 m from bottom of probe | | | | | | | | | | | | | |
| D | | Lowest element at bottom of probe | | | | | | | | | | | | | |
| Pos 9, 10, 11, 12 Overall length in cm | | | | | | | | | | | | | | | |
| * | | * | | * | | 0 | | 0370 to 3390 in steps of 10 cm | | | | | | | |
| Pos 13, 14, 15, 16 Position of highest temperature element | | | | | | | | | | | | | | | |
| * | | * | | * | | 0 | | 0300 to 3320 in steps of 10 cm | | | | | | | |
| | | | | | | | | (at least 70 cm from top of probe) | | | | | | | |
| Typical identification code | | | | | | | | | | | | | | | |
| U | A | A | N | 7 | 6 | 6 | D | 0 | 3 | 7 | 0 | 0 | 3 | 0 | 0 |
| Your identification code | | | | | | | | | | | | | | | |
| A | N | 7 | 6 | 6 | | | | | 0 | | | | | 0 | |

Dimensional drawing VITO Interface



Identification code 762

| | | | | | | | | | | |
|------------------------------------|---|---|--------------------|---|-----------------|---|---|---|---|---|
| Pos 1 Application | | | | | | | | | | |
| U | General purpose | | | | | | | | | |
| X | W&M version (additional verification) | | | | | | | | | |
| Pos 2 Version | | | | | | | | | | |
| T | VITO interface (for VITO probe or 864 MTT) | | | | | | | | | |
| Pos 3 Not used | | | | | | | | | | |
| * | Position not used | | | | | | | | | |
| Pos 4 Not used | | | | | | | | | | |
| * | Position not used | | | | | | | | | |
| Pos 5, 6, 7 Instrument designation | | | | | | | | | | |
| 7 | 6 | 2 | VITO MTT Interface | | | | | | | |
| Pos 8 Not used | | | | | | | | | | |
| * | Position not used | | | | | | | | | |
| Pos 9 Probe entry | | | | | | | | | | |
| A | G 1/2 standard in box | | | | | | | | | |
| Pos 10 Cable entry | | | | | | | | | | |
| G | M20 x 1.5 standard in box (not if Pos 11 = F) | | | | | | | | | |
| N | 3/4" NPT via reducer | | | | | | | | | |
| S | PG 16 via reducer (not if Pos 11 = F) | | | | | | | | | |
| Pos 11 Safety approvals | | | | | | | | | | |
| A | ATEX / IECEx | | | | Europe / Global | | | | | |
| F | FM / CSA | | | | USA / Canada | | | | | |
| U | T | * | * | 7 | 6 | 2 | * | A | G | A |
| Typical identification code | | | | | | | | | | |
| T | * | * | 7 | 6 | 2 | * | A | | | |
| Your identification code | | | | | | | | | | |

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