

Dräger MSI Compact NT Flue Gas Analysis



ST-6345-2005

The Dräger MSI Compact NT is part of our new portable instrument concept and designed for both complex measurement tasks at MW boiler applications and emission measurement at industrial processes. The Dräger MSI Compact NT is available in two versions: version S and as version D. Version D is additionally equipped with a permeation-type gas dryer, that dehumidifies the sample gas and thereby produces even more exact measurement results.

Measurement and calculations

Each Dräger MSI Compact NT measures differential pressure and stack gas velocity, flue gas and combustion air temperature and the gas concentrations of O₂, CO and NO. As an option, the Dräger MSI Compact NT can be equipped with additional sensors for SO₂, NO₂, CO+ (up to 4 Vol.%) and HC. It is prepared to hold up to six gas sensors. Additionally it calculates CO₂, NO_x, stack losses, combustion efficiency and excess air. Measurement results are displayed and/or printed in Vol.% or ppm and in mg/Nm³, mg/kWh or mg/MJ. Additionally the O₂ reference calculation, with a selectable O₂ reference value can be made, displayed and printed.

Display and Documentation

The measured values can be displayed as table or graphic on the large illuminated graphic display. The built-in printer offers documentation also in free adjustable intervals from 10 sec. up to 30 min. The large data memory allows comfortable storage of all values in free adjustable intervals from 10 sec. to 30 min. This means 17 h of data logging at a 10 seconds interval, including all measured and calculated values, directly into the Dräger MSI Compact NT's data memory. Later, the instruments memory can be transferred to a computer

by means of the included PC-Software "Compact-Tools" for further evaluation.

Current values can be transmitted online via the built-in serial interface to a PC resp. send as 4 to 20 mA signals via 4 optional available analogue outputs.

Functions

The Dräger MSI Compact NT is operated by a lead-gel battery, which when fully charged allows mains independent operation for 12 h. The integrated charger (100 to 240 V) enables charging and operation directly on the mains. Automatic control of the gas pump ensures constant gas flow and results into perfect measurement results independent of pressure resp. draft conditions in the flue. In order to protect the sensors the Dräger MSI Compact NT is in addition to the gas pump equipped with a second pump for purging the endangered sensors. To ensure that the sensors are purged even before the measurement range is exceeded the Dräger MSI Compact NT is equipped with a gradient controlled precaution function as a standard. While the sensors (CO, NO, NO₂) are protected against poisoning by purging them with fresh air all other measurements and related calculations (e.g. O₂, SO₂, temperature, pressure) are still active, allowing adjustments on the combustion to be continued.



ST-6698-2005

Dräger MSI Compact NT:
In case with accessories.

TECHNICAL DATA

Experts report	Report M-BI 1028-00/04, regarding O ₂ , CO, CO+, NO, NO ₂ ; SO ₂ measuring channels
Display	Graphic display, manual and automatic controlled illumination
Interface	Serial, 2,400 up to 115,200 baud, 4 analogue outputs 4 to 20 mA, burden < 100 Ω (option)
Operating temperature	+ 5 °C to + 40 °C
Storage temperature	– 20 °C to + 50 °C
Power supply	Lead battery, 6 V / 6 Ah, capacity up to 12 h, AC power supply 100 to 240 V
Gas sampling	Membrane pumps for gas sampling, and purging of sensors with fresh air
Gas conditioning	Cartridge with water trap and filter, automatic condensate disposal (option), permeation gas dryer with purge pump (only Compact-D)
Dimensions	320 x 390 x 190 mm (H x W x D)
Weight	7.1 kg

Display	Principle	Range	Resolution	Accuracy
T-ambient	PTC	– 20 to + 100 °C	0.1 °C	≤ 1 °C
T-gas	Thermocouple	– 20 to 1,000 °C caution: probe	1 °C	0...400 °C: ≤ 2°C or < 1,5 % of MV
O ₂ , oxygen	El. chem. Sensor	0 to 25 Vol. %	0.1 Vol. %	0.3 Vol. %
CO, carbon monoxide	El. chem. Sensor H ₂ -compensated	0 to 4,000 ppm	1 ppm	0 - 2,000 ppm: ± 20 ppm or < 5 % of MV
CO+, (option), carbon monoxide	El.-chem. Sensor	0.3 to 4.000 %	0.001 %	< 10 % of MV
NO, nitrogen monoxide	El. chem. Sensor	0 to 2,000 ppm	1 ppm	± 5 ppm or < 5 % of MV
NO ₂ , (option), nitrogen dioxide	El. chem. Sensor	0 to 200 ppm	1 ppm	± 5 ppm or < 5 % of MV
SO ₂ , (option), sulphur dioxide	El. chem. Sensor	0 to 4,000 ppm	1 ppm	± 20 ppm or < 5 % of MV
HC, hydrocarbons	NDIR	0 to 5 Vol. %	0.01 Vol. %	
CO, undiluted	calculated	0 to 9,999 ppm	1 ppm	
CO ₂ , carbon dioxide	calculated	0 to CO _{2 max}	0.1 Vol. %	
Draft / pressure	semiconductor	– 10 to + 130 hPa	0.01 hPa	
Efficiency	calculated	0 to 199.9 %	0.1 %	
Stack loss	calculated	– 20 to + 100 %	0.1 %	
Excess air	calculated	1.00 to 9.99 %	0.01 %	

MV = Measuring Value

ORDER INFORMATION

Dräger MSI Compact S, incl. PC cable and software	56 00 676
Dräger MSI Compact D, like Compact S, w/built-in permeation-type gas dryer	56 00 683
Gas extraction probes and additional accessories	s. price list

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