

Måleinstrumenter:

► Testo 350-S / 350-XL



## UTVIDELSE



### Utvidelse:

Flere testo 350 enheter kan kobles sammen for å måle store anlegg, dette kan leses av på en pc.



**Testo 350 er et meget kraftig instrument beregnet på storindustri. Instrumentet har mange utbygningmuligheter og det er mulighet for sammenkobling av flere 350-enheter som kan styres fra en PC.**

Den måler alle de vanlige verdiene som temperatur, forbrenningsvirkningsgrad, røykgasstap, O<sub>2</sub>, CO<sub>2</sub> og trekk. Instrumentet kan også bygges ut med forskjellige andre sensorer så den kan måle: CO/H<sub>2</sub>, CO<sub>low</sub>/H<sub>2</sub>, NO<sub>2</sub>, SO<sub>2</sub>, m<sup>3</sup>/s, kg/h, qA, NO, NO<sub>low</sub>, HC, H<sub>2</sub>S, mA, mV, m/s, t/y.

Instrumentet leveres med internt printer for rask utskrift av målinger. Det kan også kobles til PC for å lagre målinger.

**Nyhet**



**NYHET!**

°C

O<sub>2</sub>

CO

CO<sub>Low</sub>

NO

NO<sub>xLOW</sub>

CO<sub>2</sub> (IR)

SO<sub>2</sub>

λ / qA  
CO<sub>2</sub>

HC

H<sub>2</sub>S

mA  
mV

hPa

m/s

m<sup>3</sup>/h

t/y

**VVPARTS**<sup>®</sup>

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## Technical data/testo 350 S/XL flue gas analyser

Probe type	Temperature measurement	O <sub>2</sub> measurement	CO (H <sub>2</sub> compensated)	CO (H <sub>2</sub> compensated)	CO <sub>2</sub>	NO measurement	NO <sub>low</sub> measurement	NO <sub>2</sub> measurement	SO <sub>2</sub> measurement
Meas. range	-40 to +1200 (+100 to +1200 °C) ±0.5 °C (-40 to +99.9 °C)	±0.1% Vol. % (0 to +25 Vol. % O <sub>2</sub> )	0 to +10000 ppm CO	0 to +500 ppm CO	0 to +500 ppm CO <sub>2</sub> max Vol. % CO <sub>2</sub>	0 to +3000 ppm NO	0 to +300 ppm NO	0 to +500 ppm NO <sub>2</sub>	0 to +5000 ppm SO <sub>2</sub>
Accuracy ±1 digit	±0.8% of mv (+100 to +1200 °C) ±0.5 °C (-40 to +99.9 °C)	±0.8% of mv (0 to +25 Vol. % O <sub>2</sub> )	±5% of mv (+200 to +2000 ppm CO) ±1% of mv (+200 to +10000 ppm CO) ±10 ppm CO (0 to +100 ppm CO)	±5% of mv (+40 to +500 ppm CO) ±2 ppm CO (0 to +39.9 ppm CO)	Calculated from O <sub>2</sub>	±5% of mv (+100 to +1999.9 ppm NO) ±1% of mv (+2000 to +3000 ppm NO) ±5 ppm NO (0 to +99.9 ppm NO)	±5% of mv (+40 to +300 ppm NO) ±2 ppm NO (0 to +39.9 ppm NO)	±5% of mv (+100 to +500 ppm NO <sub>2</sub> ) ±1% of mv (+200 to +5000 ppm SO <sub>2</sub> ) ±5 ppm SO <sub>2</sub> (0 to +99.9 ppm SO <sub>2</sub> )	±5% of mv (+100 to +5000 ppm SO <sub>2</sub> )
Resolution	0.1 °C (-40 to +1200 °C)	0.01 Vol. % O <sub>2</sub> (0 to +25 Vol. % O <sub>2</sub> )	1 ppm CO (0 to +10000 ppm CO)	0.1 ppm CO (0 to +500 ppm CO)	0.01 Vol. % CO <sub>2</sub>	1 ppm NO (0 to +3000 ppm NO)	0.1 ppm NO (0 to +300 ppm NO)	0.1 ppm NO <sub>2</sub> (0 to +500 ppm NO <sub>2</sub> )	1 ppm SO <sub>2</sub> (0 to +5000 ppm SO <sub>2</sub> )
Reaction time	20 s	40 s	40 s	40 s	20 s	30 s	30 s	40 s	30 s
Reaction type	t <sub>90</sub>	t <sub>90</sub>	t <sub>90</sub>	t <sub>90</sub>	t <sub>90</sub>	t <sub>90</sub>	t <sub>90</sub>	t <sub>90</sub>	t <sub>90</sub>

Probe type	Efficiency	Flue gas loss	Differential pressure 1	Differential pressure 2	Velocity	CO <sub>2</sub> meas. (H <sub>2</sub> compensated)	H <sub>2</sub> S measurement
Meas. range	0 to +120 %	-20 to +99.9 % qA	+200 to +200 hPa	-40 to +40 hPa	0 to +40 m/s	0 to +50 Vol. % CO <sub>2</sub>	0 to +300 ppm H <sub>2</sub> S
Accuracy ±1 digit			±1.5% of mv (+50 to -200 hPa) ±1.5% of mv (+50 to +200 hPa) ±0.03 hPa (-2.99 to +2.99 hPa)	±1.5% of mv (+50 to -200 hPa) ±1.5% of mv (+50 to +200 hPa) ±0.03 hPa (-2.99 to +2.99 hPa)	±0.1 m/s (0 to +40 m/s)	±0.1 Vol. % CO <sub>2</sub> (0 to +50 Vol. % CO <sub>2</sub> ) ±0.1 Vol. % CO <sub>2</sub> (0 to +50 Vol. % CO <sub>2</sub> )	±0.1 ppm (0 to +300 ppm)
Resolution	0.1 % (0 to +120 %)	0.1 % qA (-20 to +99.9 % qA)	0.1 hPa (-200 to +200 hPa)	0.1 hPa (-40 to +40 hPa)	0.1 m/s (0 to +40 m/s)	0.01 Vol. % CO <sub>2</sub> (0 to +50 Vol. % CO <sub>2</sub> ) 0.01 Vol. % CO <sub>2</sub> (0 to +50 Vol. % CO <sub>2</sub> )	0.1 ppm (0 to +300 ppm)
Reaction time						<10 s	35 s
Reaction type						t <sub>90</sub>	t <sub>90</sub>

### Measurement range extension

Single dilution with selectable dilution factor (option)

CO measurement (H <sub>2</sub> compensated)	Meas. range	Accuracy	Resolution
CO <sub>low</sub> meas. (H <sub>2</sub> compensated)	0 to 100 ppm	±2 % of mv (additional error)	1 ppm or 0.1 ppm at CO <sub>low</sub>

### Technical data for HC module

Parameter	Methane	Propane	Butane
Meas. range <sup>1</sup>	100 to 40,000 ppm	100 to 21,000 ppm	100 to 18,000 ppm
Accuracy	less than 400 ppm (100 to 4000 ppm) less than 10 % of mv. (greater than 4000 ppm)	less than 400 ppm (100 to 4000 ppm) less than 10 % of mv. (greater than 4000 ppm)	less than 400 ppm (100 to 4000 ppm) less than 10 % of mv. (greater than 4000 ppm)
Resolution	10 ppm	10 ppm	10 ppm
Min. O <sub>2</sub> req. in flue gas	2% + (2 x methane reading)	2% + (5 x propane reading)	2% + (6 x butane reading)
Reaction time 90	less than 40 s	less than 40 s	less than 40 s
Response factor <sup>2</sup>	1	1.5	2

<sup>1</sup> Lower explosion limit must be adhered to.  
<sup>2</sup> The HC module is adjusted to methane in the factory. It can be adjusted to another gas by the user.

### Additional Technical data

Dimensions: 395 x 275 x 95 mm  
Weight: 3200 g  
Storage temperature: -20 to +50 °C  
Operating temperature: -20 to +45 °C  
Housing material: ABS  
Memory: 250,000 readings  
Power supply: NiMH battery main unit (00 V to 260 V, 47 to 63 Hz) or exchangeable rechargeable batteries  
Electrical power consumption: 0.5 A (110 V AC), 0.3 A (230 V AC)  
Dewpoint calculation: 0 to 99 °C to Maximum positive pressure: 50 hPa (500 mm water column)  
Maximum negative pressure: 200 hPa (2000 mm water column)  
Pump flow: 1 l/min, with flow monitoring  
Max. dust load: 20 g/m<sup>3</sup> dust in flue gas  
Max. humidity load: +20 °C  
Dewpoint temperature at sample gas inlet of analyser box  
Trigger input: Voltage 5 to 12 Volt (rising or falling edge)  
Pulse width: > 1 s  
Load: 5 Vmax, 5 mA, 12 Vmax, 40 mA  
Warranty: Analyser 2 years (excluding working parts, e.g. measurement cell), CO/NO/NO<sub>2</sub>/SO<sub>2</sub>/H<sub>2</sub>C/H<sub>2</sub>S 1 year, O<sub>2</sub> measurement cell 1 1/2 years, CO/IR measurement module 2 years

## Differences between flue gas analysers

	testo 350 S	testo 350 XL
Maximum no. of measuring modules	6	6
O <sub>2</sub>	0 – 25 Vol. %	■
CO (H <sub>2</sub> )	0 – 10,000 ppm	○
CO <sub>low</sub> (H <sub>2</sub> )	0 – 500 ppm	○
NO	0 – 3,000 ppm (0.1 ppm resolution)	○
NO <sub>low</sub>	0 – 300 ppm (0.1 ppm resolution)	○
NO <sub>2</sub>	0 – 500 ppm (0.1 ppm resolution)	○
SO <sub>2</sub>	0 – 5,000 ppm	○
HC	0 – 4 Vol. % (0.001 % resolution)	○
H <sub>2</sub> S	0 – 300 ppm (0.1 ppm resolution)	○
CO <sub>2</sub> (NDIR)	0 – 50 Vol. %	○
Built-in gas preparation unit (is recommended with high humidity levels in flue gas and during long-term measurements >2 hrs measuring time)	○	■
Automatic fresh air rinse with valve (incl. measurement range extension with dilution factor 5 for all sensors)	○	■
Measurement range extension for CO measuring module (with selectable dilution factors)	○	○
CO measuring module switch-off via adjustable switch-off threshold	■	■
Trigger input – stops and starts measurement externally	○	○
Differential pressure measurement (-40 to +40 hPa / -200 to +200 hPa)	■	■
Built-in rechargeable battery	■	■
2 temperature probe sockets (Type K NiCr-Ni)	■	■
Data logger (250,000 readings)	■	■
Testo data bus connection	■	■

■ = Standard      ○ = option

## Differences between control units 350-S and 350-XL

	testo 350 S control unit	testo 350 XL control unit
Built-in printer	■	■
Differential pressure measurement (-40 to +40 hPa / -200 to +200 hPa)	■	■
1 user-defined probe socket (for e.g. temperature, relative humidity measurement, etc.)	■	■
Touchscreen	■	○
Connection from a flue gas analyser to the Testo data bus	■	■
Connection of several flue gas analysers, analog output boxes and testo 454 jiggers to the Testo data bus	■	■
NiMH rechargeable battery pack	■	○
Internal memory for 250,000 readings	■	■

■ = Standard      ○ = option      - = Not possible

Control unit testo 350-S



Testo databus connection

Connection RS232

Control unit testo 350-XL



Testo databus connection

Connection RS232

Connection differential pressure/velocity measurement additional probes

## Produkt:

Testo 350 XL Røkgassanalyser-enhet

Testo 350 S Røkgassanalyser-enhet

Testo 350 XL Kontroll-enhet

Testo 350 S Kontroll-enhet

2m datakabel

5m datakabel

20m datakabel

Nyinstallasjon eller oppgradering av celler: NO, NO<sub>2</sub>, CO<sub>low</sub>, SO<sub>2</sub>, HC, H<sub>2</sub>S

Utskifting av defekte celler: NO, NO<sub>2</sub>, CO<sub>low</sub>, SO<sub>2</sub>, HC, H<sub>2</sub>S

## Varenr:

0563 0350

0563 0368

0563 0353

0563 0369

0449 0042

0449 0043

0449 0044

## Kode:



## Pris: