

# Online Continuous Syngas Monitoring

## System SYN-600 R

### I. Introduction

Online Continuous Syngas Monitoring System SYN-600 R consists of online continuous syngas analyser, gas conditioning system, washing system, PLC system, industrial computer system(optional). It can measure CH<sub>4</sub>, CO<sub>2</sub>, CO, C<sub>n</sub>H<sub>m</sub>, O<sub>2</sub> and H<sub>2</sub> at the same time in one unit, and calculating heating value in MJ/M<sup>3</sup> or Kal/m<sup>3</sup>. It has water bubbler washing system to remove tar, and gas cooler as well as two precise filters to remove moisture and dust. All the measurement data and system status can be transited the centre control system by 4-20mA, RS485 or PLC system.

### II. Features

- Using 5" TFT LCD touch screen
- Measurement value display/real-time curve display
- Calibration menu and alarm setting with password protection
- One set back to factory setting
- PLC automatically control sampling, water washing, diagnosis
- Two precise gas filter and gas cooler to remove dust and moisture
- Optional with industrial computer to realize remote data transmission.

### III. Specifications

Measurement	CO, CO <sub>2</sub> , CH <sub>4</sub> , C <sub>n</sub> H <sub>m</sub> , O <sub>2</sub> , H <sub>2</sub> and gas calorific value calculation
Calculation	High Heating Value or Low Heating Value in MJ/m <sup>3</sup> or kcal/m <sup>3</sup>
Technology	CO, CO <sub>2</sub> , CH <sub>4</sub> , C <sub>n</sub> H <sub>m</sub> : proprietary dual beam NDIR detectors O <sub>2</sub> : industrial electrochemical cell H <sub>2</sub> : MEMS thermal conductivity detector
Ranges	CO/ CO <sub>2</sub> :/CH <sub>4</sub> / H <sub>2</sub> : 0-100%, C <sub>n</sub> H <sub>m</sub> : 0-10%, O <sub>2</sub> : 0-25% Other ranges customizable on request without price increase
Resolution	0,01%
Accuracy	CO/CO <sub>2</sub> /C <sub>n</sub> H <sub>m</sub> /CH <sub>4</sub> : ±2%FS; H <sub>2</sub> /O <sub>2</sub> : ±3%FS
Repeatability	≤ 1%
Gas conditions	Flow:0.7L-1.2/min, internal gas sampling pump, external flow meter with needle valve Pressure:2kPa≤ inlet pressure≤ 50kPa Quality: No dust, moisture, tar (external safety filter and optional gas washing unit)

Operating conditions	Tamb : -5°C to 50°C / Pamb : 86 to 108 kPa / RH : 0-90% non-condensing
Response time (T90)	≤ 15 sec (NDIR)
Communication interface	4-20mA; RS232/RS485
Power supply	External 11V-220 VAC-50Hz
Dimensions and weight	Gas analysis system :1800(L) x 800 (H) x 800 (W) mm /200-250kg Water bubble washing system: 1200 (L) x 800 (H) x 300 (W) mm / 75-100kg

#### IV. Applications

- coal chemical process
- steel making process as blast furnace, converter, coking, direct iron ore smelting reduction
- syngas production from Biomass and coal gas gasification processes

**TEVHA**

