

# ABB DRS2170 Dynamic reflux sampler datasheet

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The DRS is essentially a fixed temperature distillation derived from the need to remove water as a condensable component from low boiling point gases. Cooling is provided by way of a vortex cooler controlled by an electronic temperature controller.

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# DRS2170

## Dynamic reflux sampler

Measurement made easy

Clean samples for your  
process analyzer



### Features

- High sample throughput
- Provides clean sample to the analyzer
- Self-cleaning
- Precise temperature control
- Set-point tunable for optimum control
- Certified for hazardous areas

### Application

- Naphtha cracker furnace gas
- Fluidized cat crackers
- Ethylene furnace measurements
- Acetylene
- Ammonia production

# DRS 2170

## Dynamic reflux sampler

### Application

#### Usage

Primary sample conditioning occurs in a virtually in-situ fashion with the DRS approach. Condensable components are removed and are used to support particulate removal before they can present problems in the sample transport system's downstream components and the analyzer.

#### Description

The DRS is essentially a fixed temperature distillation derived from the need to remove water as a condensable component from low boiling point gases. Cooling is provided by way of a vortex cooler controlled by an electronic temperature controller.

- High sample throughput
- Provides clean sample to the analyzer
- Uniform representative sample
- Self cleaning
- Precise temperature control
- Set-point tunable for optimum control
- Certified for hazardous areas

#### Physical

Ambient temperature range: 32°F to 140°F (0°C to 60°C)  
Sample inlet 2 inches ANSI class 150# standard.

#### Materials

Also available in ANSI class 300, 600, 900, 1500 inlet connection with certification All 316SS class 3000 fittings standard  
All welded column 316SS construction certified to ASTM pressure vessel requirements to meet CE / CSA / CRN requirements.  
PTFE, Viton, Glass

#### Safety area classification

NEC



#### Service suitability

Class I; gas groups B,C,D; division 1; T3C (160°C)  
Zone 1: CE II 2G, EEx dm [ia] ia IIB+H2 T4 (135°C)  
Ethylene furnace (GC, MS, Photometer)  
Naphtha cracker furnace gas (GC, MS, Photometer)  
Ammonia production (MS)  
Fluidized cat crackers (O2, GC, MS, Photometer)  
Acetylene (O2, GC)

#### Electrical & control (hot, neutral, ground)

Power requirement

120 VAC or 240 VAC, 50-60 Hz

Controller

Electronic PID, self tuning  
Local manual adjust, 4-20mA input, remote PC monitoring and setup with RS485 communications, and software available

Temperature set point

### Cooling

|                     |   |
|---------------------|---|
| Air supply          | 1/2" tube, Swagelok   |
| Connection fittings | Coolant: air, vortex cooling,                                   |
| Pressure            | 60 -100 psig (412 - 689 kPa)                                    |
| Volume              | 10-15 SCFM  |
| Quality             | Plant grade; clean, oil free<br>Liquid cooled version available |

### Sample section

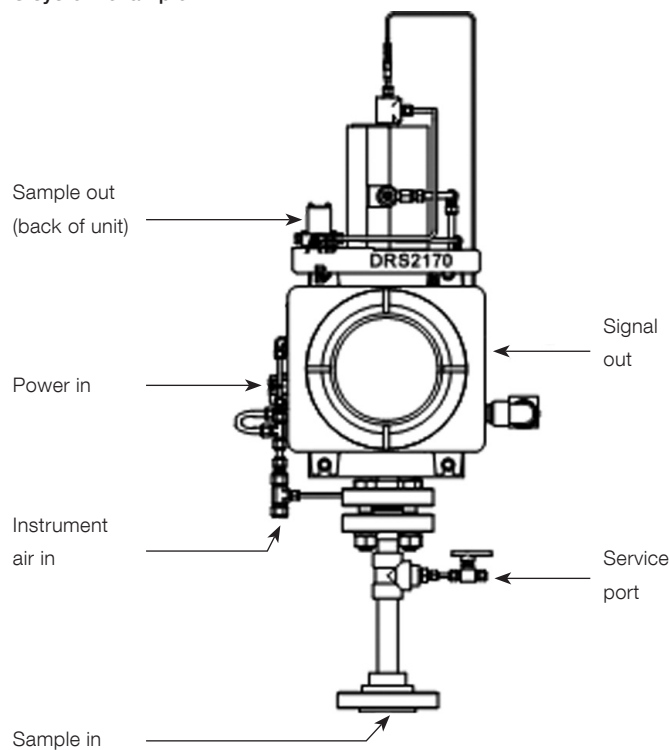
|                        |  |
|------------------------|--|
| Sample outlet fittings | 1/4" tube  |
| Flow rate              | 2-5 LPM @ 50%<br>condensable 37°F (3°C)  |
| Temperature            | Sample gas temperature control $\pm 0.5^\circ\text{F}$<br>Minimum outlet sample temperature of 3°F<br>50 to 1000°F class 150# flange; 1000 to 1500°F class 300# up |
| Pressure               | Standard 150# flange; ASME certified 80 psig at 800°F (550 kPa at 426°C) -20 to 1000°F (-28 to 537°C)<br>Up to 3600 psig at 50°F and 205 psig at 1500°F            |

### Dimensions

Height: 45"(1143 cm),  
width: 15"(381 mm),  
depth: 25"(636 mm)

Specifications subject to change without notice.

DRS system example



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