Oxygen Analyzer (DTO2)



Product Overview

DKKI Oxygen and Temperature Analyzer is a robust, industrial-grade instrument engineered for the demanding environments of primary steelmaking and secondary metallurgy. It provides simultaneous measurement of dissolved oxygen and bath temperature in under 12 seconds, enabling real-time control for precise deoxidation and calculation of elements like aluminum (1-150 ppm) or carbon. Precision is ensured by a microprocessor performing real-time Nernst equation computation with automatic temperature compensation. The analyzer offers universal application for both Si-killed and Al-killed steel melts. Its integrated bath level sensing guarantees depth-certified immersion during automatic lance-based sampling. The industrial touchscreen displays real-time temperature and oxygen graphs for one-touch measurement. Built with rugged design for harsh mill environments, it offers connectivity options including Ethernet, USB, RS-232, RS-485, and Profibus, plus remote access for configuration and diagnostics. An integrated self-diagnostic system enables automatic malfunction detection. The device supports Type R, S, and B thermocouples, making it a versatile and reliable solution for modern steelmaking operations.

Key Features

- Measures dissolved oxygen and temperature within 12 seconds
- Executes real-time Nernst equation computation with thermocouple compensation
- Indicates dissolved aluminum content (1-150 ppm Oxygen) or carbon content for more than 150 ppm
- Features an industrial touchscreen for real-time display of temperature and oxygen graphs.
- Universal application for both Si-killed and Al-killed steel melts
- Bath level sensing for accurate process monitoring
- Remote connectivity for system diagnostics and configuration access
- Integrated self-diagnostic system for automatic malfunction detection
- Offers multiple connectivity: Ethernet, USB, RS-232, RS-485, Profibus
- Built with rugged industrial design for harsh mill environments
- Supports Type R/S/B thermocouples for flexible temperature measurement



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Monitoring & Conformity Assessment Iran
CERTIFIED
ISO 9001:2015
Certificate No. IR0190126055

Why DKKI

- Proven success for over three decades
- ISO 9001:2015 certified quality
- In-house testing under real operating conditions
- Free expert support and comprehensive training
- On-site consulting and troubleshooting
- Fast order processing with flexible logistics
- Standard products, customizable options
- Transparent partnerships that build trust
- Proactive customer engagement

Application Areas

- Electric Arc Furnace (EAF)
- Ladle Furnace (LF) treatment control
- Vacuum Degassing (VD, RH, VOD) endpoint control
- Tundish measurement for casting consistency
- Controlling deoxidation (in Al/Si killed Steel)

Technical Specifications

Parameter	Details
Measuring Parameters	Oxygen / Temperature / Al / C
Probe Compatibility	Standard ZrO2-based electrochemical oxygen sensors
Oxygen Range	1 ppm to 2000 ppm (typical)
Oxygen Resolution	1 ppm
Thermocouple Type	Temperature Range
Type S (Pt10)	up to 1740°C
Type R (Pt13)	up to 1740°C
Type B (Pt30/6)	up to 1820°C
Temperature Resolution	1 °C
Calculation Method (Real-time)	Nernst Equation with temperature compensation
Display Technology	High-Resolution Industrial Touchscreen TFT color
Display Resolution	800 X 600
Analog Inputs (mV and µV)	For Oxygen Cell and Thermocouple
Digital I/O	For External displays / Siren / 3-color traffic light
TTY Port	For Printer
RS-232/ RS-485 Port	For Wall-mount large display
PROFIBUS Port	For Level-2 integration with plant-wide PLC system
Ethernet LAN / WAN Port	For data transfer and remote diagnostic
USB Port	For mouse / keyboard
Bath Level Detection for automatic lance	Real-time bath level detection through temperature monitoring
Power Requirement	100 - 240 V AC 50/60 Hz , <100 VA
Operating Temperature	0 °C to plus 50 °C (Ambient)
Enclosure Material	3 mm thick aluminum rigid case
Protection Rating	Dust protected and splash resistant (IP50 protection)
Dimensions (WxDxH)	(310 mm X 482 mm X 178 mm)
Rack-Mount Space Requirement	4U Height in 19 inch rack
Weight	11 kg

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