

# Incyte Arc Expert - 220

Specification Sheet (Part/REF # 243950-0212)



Incyte Arc sensors provide a means for directly measuring viable cell density in real-time, meeting the increasing need for PAT in the biopharmaceutical industry. Achieve advanced process control with unprecedented data availability. Clear, instantly available information ensures critical events that could have been missed between off-line samples are now immediately recognizable.

## Product Specifications

<b>Sensor Family</b>	Incyte Arc Expert
<b>a-length</b>	220 mm
<b>Parameter</b>	Viable Cell Density
<b>Electrical Connector</b>	VP8
<b>Sensor Output</b>	Arc: Modbus
<b>Measurement Principle</b>	Permittivity
<b>Measuring Range</b>	0 to 700 pF/cm, equivalent to $5 \times 10^5$ to $8 \times 10^9$ cells/mL (mammalian)
<b>Accuracy at 25 °C</b>	Conductivity (at 0 pF): $\pm 25 \mu\text{S}$ or $\pm 1 \%$ Whichever value is greater over the entire measuring range
<b>Precision at 25 °C</b>	Permittivity (at 1 MHz): $\pm 1 \text{ pF}$ or $\pm 1 \%$ Whichever value is greater over the entire measuring range
<b>Temperature Sensor</b>	Yes
<b>Configurable Values</b>	VCD, Conductivity, Temperature
<b>Diameter</b>	12 mm
<b>Process Connection</b>	PG13,5
<b>Wetted Parts</b>	Platinum Stainless Steel 1.4435 PEEK (Polyetheretherketone) EPDM (Ethylene propylene elastomer)
<b>O-ring Material</b>	EPDM (Ethylene propylene elastomer)
<b>Surface Quality of Steel</b>	$R_a < 0.4 \mu\text{m}$ (N5)
<b>Digital Interface</b>	RS485 Modbus (max. 31 addresses)
<b>Baud Rate</b>	19200, 38400, 57600, 115200 Bd
<b>Operating Voltage</b>	24 V ( $\pm 10 \%$ )
<b>Serial Number</b>	Yes
<b>Certificate</b>	Yes
<b>Autoclavable</b>	Yes, max. Temperature 130 °C (Incyte Arc Revision 00) Yes, max. Temperature 140 °C (Incyte Arc Revision 01 and higher)
<b>CIP</b>	Yes
<b>Steam Sterilizable</b>	Yes, max. Temperature 140 °C
<b>Operating Temperature Range</b>	0 to 60 °C
<b>Conductivity Range</b>	1 to 80 mS/cm for firmware below CDCUM003

	0.5 to 80 mS/cm for firmware CDCUM003 and above (with Hamilton calibration)
<b>Pressure Range bar g</b>	0 to 12 bar
<b>Resolution at 25 °C</b>	0.1 pF/cm
<b>Max. Accuracy</b>	Conductivity (at 0 pF): $\pm 100 \mu\text{S}$ (for whole operating temperature range)
<b>Max. Precision</b>	Permittivity (over all frequencies): $\pm 1 \text{ pF}$ (for whole operating temperature range)