

PRODUCT NOTE

ABB Ability™ MACHsense-R

Data acquisition unit for condition monitoring of high voltage motors



The ABB Ability™ MACHsense-R data acquisition unit is a premium solution to convert high voltage motors into smart, connected devices. It enables customers to monitor the health of their equipment, optimize efficiency and improve reliability and safety using distributed sensors and advanced algorithms for data analysis.

Intended use

- 3-phase AC induction motors
- Continuous or intermittent duty
- Fixed speed or variable speed
- For shaft heights of 355 mm and higher

Sensor configurations

The ABB Ability™ MACHsense-R data acquisition unit can be configured with different sensor setups depending on the application.

- Vibration accelerometers
- Magnetic field sensors
- Winding temperature measurements (if internal RTDs are available)

Parameters

- Bearing condition parameters
- Overall vibration (velocity RMS)
- Operating parameters (frequency, running speed, slip)
- Vibration spectrum
- Magnetic field spectrum
- Static eccentricity
- Dynamic eccentricity
- Broken rotor bar

SPECIFICATIONS	
Vibration measurements	
Frequency range	1 Hz to 50 kHz (configurable)
Resolution	24 bits
Sampling rate	Up to 102.4 KS/S
Vibration sensors	CTC M/AC192-1D 100 mV/g
Sensor positions (horizontal motor)	DE Horizontal, DE Vertical, NDE Horizontal, Body Horizontal
Communication	
Mobile network communication	Mobile GPRS 3G
WiFi	802.11 a/b/g
LAN connection	10/100 MBPS
Power	
External power supply	110 - 240 VAC
Environmental	
Temperature	-40 °C to +85 °C
IP class	IP65
Vibration	MIL810
Temperature measurements	
Winding temperature (spare RTD required)	2/3/4 wire PT100 inputs
Bearing temperature (external RTD required)	2/3/4 wire PT100 inputs
Certification/Standards	
	CE, RED, FCC, IC
	Safe areas only; no hazardous area certification
Physical	
Dimensions (WxHxD)	313x240x157 mm
Data acquisition unit mounting	On or near motor
Vibration sensor mounting	Bearing positions and motor body
Magnetic field sensor mounting	Motor body
Part information	
Part number	Description
3BSM045700-A	Hardware
3BSM045708-1	1 year subscription
3BSM045705-1	3 year subscription