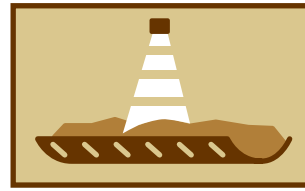


iBelt™



2D Radar
Belt Volume
Scanner



World's most reliable Belt Volume Radar Scanner

- Contact-free and real-time volume measurements
- Worry-free technology for all environmental conditions
- Built-in analysis functions and production totalizer
- Versatile uses for all types of conveyors, belts, mobile crushers and feeder systems


The Industrial Radar Company

THE iBelt™ CUTTING EDGE SOLUTION

“Counting coal is counting cash“

“No wrong bills through drifting and inaccurate belt scales“

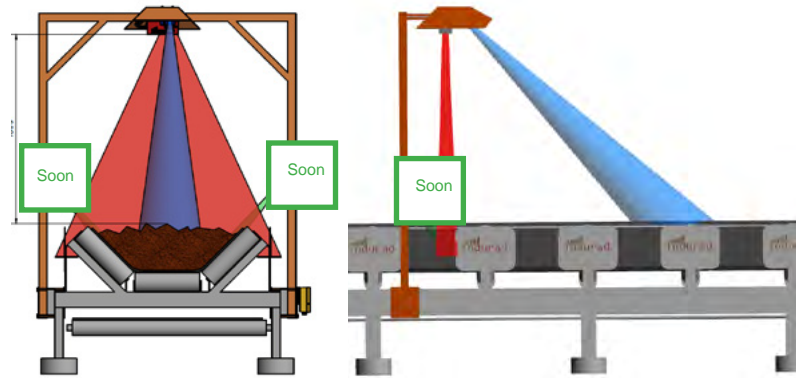
“No more paying for weight of rainwater“

The iBelt™ – Contact-less Belt Volume Measurement

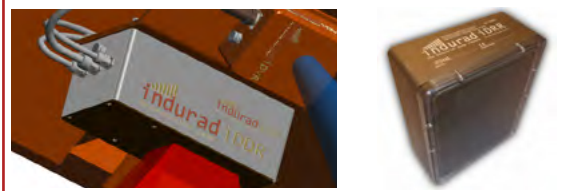


iBelt™ is a unique combination of various radars:

- The iDRR™ scans the material cross section
- The iDVR™ measures the belt speed
- The iLDR™ measures
 - a) the belt misalignment
 - b) gaps between cord rim and material on belt



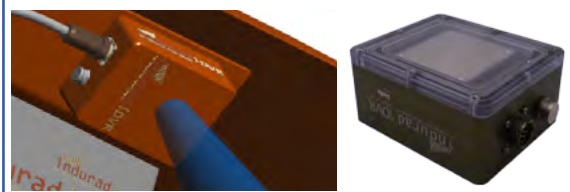
iBelt™ VOLUME



iDRR™ – indurad DualRangeRadar

- Industrial grade, 77 GHz volume detection radar sensor
- High-resolution measurements results between 0 to 150 m
- Detects volume not mass, as storage and transport facilities like belts are limited by volume, not by mass
- Integrates easily in any hard- and software infrastructure

iBelt™ SPEED



iDVR™ – indurad DopplerVelocityRadar

- Slippage-free, safe and stable contact-less measurements
- Real material speed as data output – not pulley speed
- Replaces maintenance-intensive measurement wheels
- Detects slow-moving objects < 0.1 m/s
- Guaranteed one-time calibration, no further maintenance

iBelt™ ALIGN

iLDR
Update
coming soon

iLDR™ – indurad LinearDynamicRadar

- Detect belt slippage long before switches will react
- Contact-free 400 Hz measurements
- Measures freeboard for optimizing material flow rates
- Supreme accuracy level in mm area
- Guaranteed one-time calibration, no further maintenance

vibration

steam

dust

rain


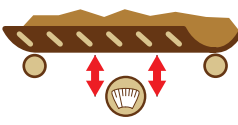


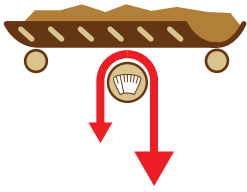



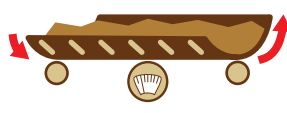





STATE OF THE ART TECHNOLOGY

Contact Free Measurement Belt scales as stand-alone technology are highly critical for applications where inaccurate measurement cause economic damage. They need to be re-calibrated constantly, as they lose in precision over time. Drift, intermittent or static offset remain undetected without a second independent physical technology. iBelt™ is the solution for detecting errors instantly and safely.

BELT SCALES – ERROR SOURCES

MEASUREMENT ERRORS OF 5-10 % ▪ FREQUENT CALIBRATION ▪ TIME-CONSUMING INSTALLATION

STATIC ERROR					
	Scale manipulation	False scale mounting	Belt thickness	Belt inclination	
	DRIFT ERROR				
		Rolling resistance	Scale dirt adherence	Belt dirt adherence	Belt tension
INTERMITTENT ERROR					
		Belt skewing	Scale vibration	Belt vibration	Bulk water content

LASER SCANNERS

- Sensitive to dust and weather/climate
- Low refresh rates (one point measurement)
- Frequent cleaning required
- Maintenance of moving parts

RADIOMETRIC MEASUREMENTS

- High acquisition costs
- Complex hardware
- Point detector configuration
- Radiation protection required
- Import/export bureaucracy

iBelt™ CUSTOMER BENEFITS

Reliable data	Process control	Easy installation	High accuracy
<ul style="list-style-type: none"> ■ Tough environments ■ Inclined belts ■ Short belts ■ Apron feeders 	<ul style="list-style-type: none"> ■ Maximize throughput, avoid overloading ■ Fair intra-division accounting 	<ul style="list-style-type: none"> ■ No software installation ■ One-time calibration ■ No maintenance ■ No cleaning 	<ul style="list-style-type: none"> ■ Typical accuracy 99% ■ Contact free measurement ■ Remote calibration audit service

snow



fog



wind



temperature





Specification	Value
Installation height	recommended: 1.8 m
Sampling rate	15 Hz
Temperature range	-40°C to +80°C
Housing	6800 g full metal body IP66 protection class
Options	ATEX IECEX 21,22
Health, safety & compliance	non critical ISO 62479:2011 FCC and ETS

Typical iBelt™ Installations



Available Interfaces for iBelt™

■ 4...20 mA	■ Modbus TCP/IP
■ Ethernet webserver	■ Ethernet IP
■ WLAN webserver	■ Profibus DP
■ CAN-Bus	■ DeviceNet

Where to use iBelt™?

- Material handling (various types of material)
- Power plants and steel sector (coal, ore)
- Mining, stone and soil (rock, sand, gravel)
- Paper and pulp (wood chips, cellulose)
- Chemical industry (fertilizer, salt)



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