

Overview Conveyor Belt Scales

FMS Conveyor Belt Scales Compact, durable measuring roller with robust electronics

- **Compact and totally maintenance-free measuring roller with longest lifetime**
Direct measurement on the roller, encapsuled components, integrated, contact-less speed detection, safe up to 20-times overload
- **Easy and versatile to retrofit**
Sophisticated concept with multiple installation possibilities
- **Intuitive Operation and configuration, best readability**
Graphical display, taring and calibration via free App and any mobile device
- **Legal-for-trade version**
Basis for direct billing to customers



FMS Conveyor Belt Scales

The robust measuring rollers from FMS are suitable for the highest loads and permanent stress in mobile and stationary conveying systems for heavy bulk materials of all kinds, such as gravel, crushed stone, chalk, coal, fertiliser, building rubble, etc. A wide range for different belt widths, troughing angles and a calibratable version offer solutions for many applications.

The associated electronics have been designed for the same requirements. The illuminated graphic display shows the current conveying capacity, the daily quantity, the total quantity and the belt speed. Additional display devices and control systems can be connected via configurable analogue and digital outputs. The web browser, which is also integrated as standard, allows the electronics to be configured quickly using any PC or laptop or, for example. Ethernet interfaces are available as an option. For even more convenient operation via a mobile device, we provide a free app.

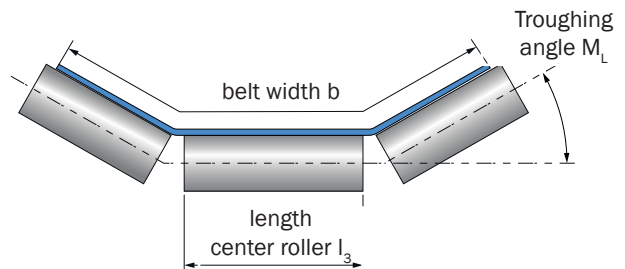
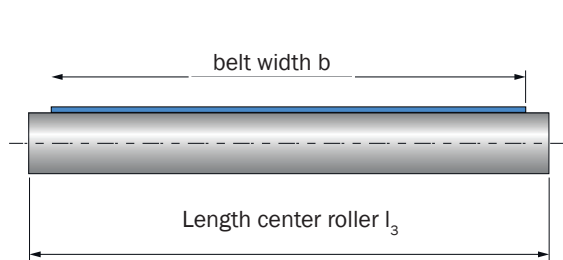
Functional description

The belt width determines the dimensions of the measuring roller. One force sensor is located at each end of the measuring roller. This type of measurement, directly at the point where the actual force is applied, makes the system insensitive to forces acting in the direction of the moving belt. Additional guides or struts to the frame of the conveyor belt to absorb these undesirable forces are not necessary and result in very slim dimensions. Thanks to the low installation height, the FMS measuring roller can be installed even in the tightest of spaces, e.g. in mobile crushers or sieving plant. The measuring roller carrier is adjustable and can therefore be mounted on conveyor belts with a wide range of frame widths without any adjustment work. The fully encapsulated speed sensor is wear- and maintenance-free and sits on the end of the roller.

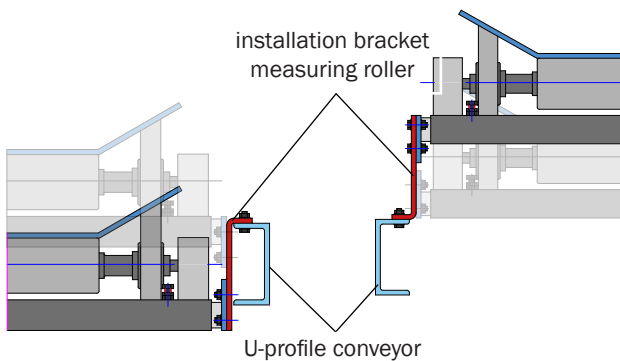
The electronics convert the measuring signals from the measuring roller and digitise them. It subtracts the weight of the measuring roller and the load from the belt (taring) from the measured value and multiplies the difference by the belt speed. It has an auto-tare programme which automatically determines the tare value during two belt revolutions at the touch of a button.

Measuring rollers	BMGZ021	BMGZ041	BMGZ061
			
			
General technical data			
Overload protection	20-times nominal force		
Accuracy class	± 0.3 % (F _{Nenn})	± 0.3 % (F _{Nenn})	OIML R 50-1
Legal-for-trade			●
Protection class	IP65		
Max. distance to electronics in m (ft)	100 (330)		
Temperature range	-10 to +60 °C (14 to 140 F)		
Others			
Contact-less speed detection	●	●	●
Extra wide adjustment range for installation	●	●	●
Dimensions			
Belt widths b in mm (in.)	400 (15.7) to 1'000 (39.4)	500 (19.7) to 1'400 (55.1)	500 (19.7) to 1'400 (55.1)
Maximum installation height in mm (in.)	150 (5.9)	232 (9.1) to 352 (13.9)	232 (9.1) to 352 (13.9)
Troughing angle M _L in °	n.a.	5 to 40	5 to 40
Length center roller l ₃ in mm (in.)		200 ((7.9) to 530 (20.8)	200 ((7.9) to 530 (20.8)
Accessories			
Calibration device		●	
Connecting cable to electronics	●	●	●

Measuring roller : Dimensions in mm (in.)



Measuring roller : Extra large adjustment for installation



Electronics : Free app for comfortable operation



Electronics	BMGZ710	BMGZ750
		Eichfähig 
General technical data		
Maximum number of measuring rollers	1	1
Legal-for-trade version		
Accuracy	0.05 %	
Power supply in VDC	24 (18 to 36) VDC	
Protection class	.W housing: IP42; .S housing: IP20; .K housing: IP65	
Temperature range in °C (F)	-10 to +50 °C (14 to 122 F)	
Power consumption	5 W	
Cycle time	1 ms	
Operation and display		
Display	4 buttons, graphical, back-lite display, optional via web interface or mobile device (free app)	
App connectivity via Bluetooth		
Daily counter, badge counter	0 to 1'000 t (resolution 5 kg); 1'000 to 10'000 t (resolution 10 kg); 10'000 to 100'000 t (resolution 100 kg); 100'000 bis 1'000'000 t (resolution 1'000 kg)	
Displayed values	Total flow rate [t], daily flow rate or badge [t], current capacity [t/h], belt speed [m/s] as absolute value or graphically in diagram	
Totalizer	0 to 1 Mio. t (resolution 1'000 kg)	
In- and outputs		
Digital outputs	Taring ready, 24 VDC, max. 100 mA; belt scale ok, 24 VDC, max. 100 mA; remote counter impulse, impulse duration 1 to 1'000 ms, 24 VDC, max. 100 mA; remote counter reset, 24 VDC, max. 100 mA	
Analogue outputs	Current capacity: current output: 0/4 to 20 mA, min. 500 Ω or power output: 1 to 10 VDC, min. 1'000 Ω	
Digital inputs	Start taring, badge active, belt speed, 24 VDC	
Options		
.W housing for wall mount		
.S housing for panel mount		
.K cabinet (with .W housing)		
Ethernet interface		
PROFINET		
Others on request		

Electronics : Housing and installation options



.W housing for wall mount

- Roust aluminum housing
- Solid mounting brackets



.S housing for panel integration

- Simple integration in cabinet front



.K cabinet (with .W housing)

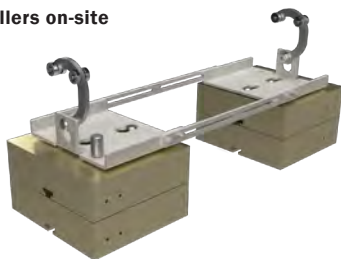
- Extra robust for mobile applications (crushers and sieving plants)

FMS conveyor belt scales : Typical Application



Accessories, online configuration : Conveyor belt scales

Calibration device for quick and easy calibration of troughed measuring rollers on-site



BMGZ-Configurator for simple configuration and sizing



About us

FMS Force Measuring Systems AG has been manufacturing conveyor belt scales since 1995. Our measuring roller has earned a legendary reputation on the market over the last few decades. The compact dimensions, the completely encapsulated housing with non-contact speed detection, the direct measurement on the roller and the compact design are just the most important points that are repeatedly emphasized by customers.

Since 1993 FMS Force Measuring Systems AG has been a worldwide market leader in the fields of tension control and web guiding, and the only manufacturer that covers a complete range of measurement, control and telemetry technologies.

Its customized solutions are applied in the converting, metals, paper, textile and the wire & cable industries. With industry leading technology, high quality construction, and a wide array of products FMS serves customers worldwide to help them maximize their production performance.

World Headquarters: FMS Force Measuring Systems AG

Aspstrasse 6 • 8154 Oberglatt (Switzerland) • Phone + 41 44 852 80 80
info@fms-technology.com • www.fms-technology.com