

DE BEERS GROUP

TECHNOLOGY

Non-Nuclear Dense Medium Controller

Coal, Iron Ore, Chrome, Diamonds

A non-nuclear density meter for the measurement of slurries containing magnetic particles. Ideal for the density measurement of magnetite or ferro-silicon slurries as utilised in coal, iron ore, chrome and diamond Dense Medium Separation plants.



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FEATURES

- Non-nuclear density measurement device
- Suitable for Magnetite, Milled FeSi and Atomised FeSi slurry applications
- Density measurement independent of flow rate
- Non-contact
- No moving parts
- Non-obtrusive to flow – no pressure drop
- Temperature stabilised
- Standard analog and various fieldbus output options
- No maintenance – no periodic cleaning required
- In-field, one point recalibration – no process adjustment or shutdown required
- ON-OFF and PID output control to achieve desired density
- Full density range 1.00 – 4.50 S.G. (Medium specific)
- Accuracy of 0.01 S.G



The Dense Medium Controller (DMC) is designed to measure the density of slurries accurately and reliably in Dense Medium Separation Plants.

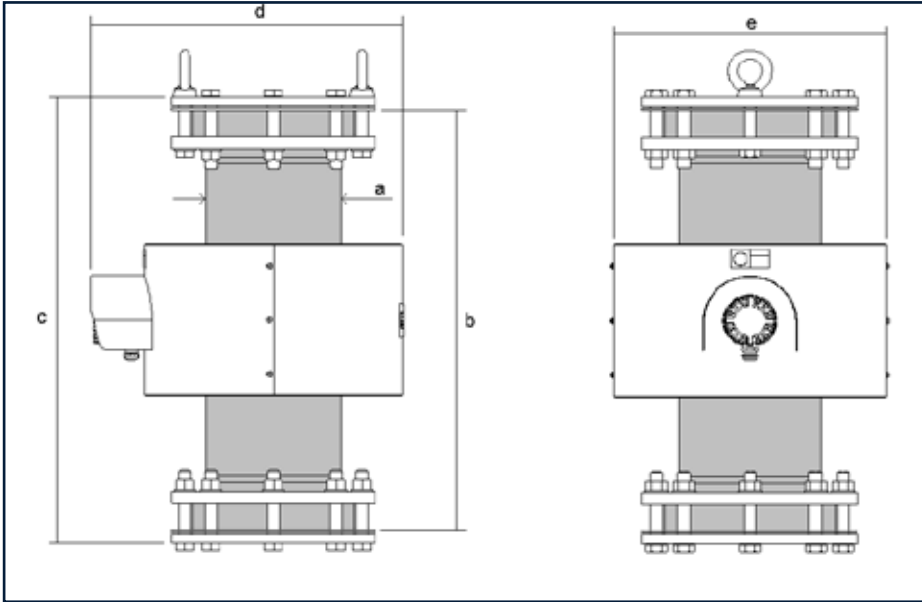
The technology used is non-nuclear and has been used in the diamond industry for over a decade.

Being non-nuclear eliminates the legislative, safety, environmental and personnel skill requirements associated with nucleonic densitometers.



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- Density readout on Controller screen.
- PID controller output to external control valve.
- Bang-bang (on-off) output with user defined hysteresis to optional solenoid valve control.

DIMENSIONS

DMC Transducer Unit	a (pipe outer diameter) mm [inch]	b (stub flange to stub flange distance) mm [inch]	c (facing flange to facing flange distance) mm [inch]	d (maximum cover width) mm [inch]	e (minimum cover width) mm [inch]
DMCT050	50 [1.97]	450 [17.72]	476 [18.75]	254 [10]	165 [6.50]
DMCT075	75 [2.96]	450 [17.72]	480 [18.90]	294 [11.58]	203 [8.0]
DMCT110	110 [4.33]	550 [21.66]	580 [22.84]	362 [14.26]	275 [10.83]
DMCT160	160 [6.30]	550 [21.66]	588 [23.15]	396 [15.60]	303 [11.93]
DMCT225	225 [8.86]	700 [27.56]	742 [29.22]	519 [20.44]	430 [16.93]
DMCT315	315 [12.41]	750 [29.53]	800 [31.50]	631 [24.85]	542 [21.34]
DMCT355	355 [13.98]	750 [29.53]	806 [31.74]	671 [26.42]	581 [22.88]

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SPECIFICATIONS

Dense Medium Controller	50	75	110	160	225	315	355
Process pipe outer diameter [mm]	50	75	110	160	225	315	355
Unit mass [kg]	10	14	18	38	66	110	146
Density range:							
Magnetite slurry [S.G.]	1.00 to 2.20						
Milled FeSi slurry [S.G.]	1.00 to 3.80						
Atomised FeSi slurry [S.G.]	1.00 to 4.50						
Accuracy:							
Magnetite slurry [S.G.]	0.01						
Milled FeSi slurry [S.G.]	0.01						
Atomised FeSi slurry [S.G.]	0.01						

Pipe material: High Density Polyethylene (HDPE) PN16 PE100 (SDR11)

Degree of protection: IP66, certified by the SABS to SANS 60529:2001

Power supply:

- Recommended:
 - 85 to 264 VAC (47 to 63 Hz), 0.3A RMS at 230 VAC
 - 120 to 370 VDC
- Bypassing the internal power supply unit:
 - 24VDC
 - 1.0A

The Controller is protected against reverse polarity.

Analog output (2 wire): 4 to 20mA, 0 to 20mA, 0 to 24mA or 0-10VDC

Serial output: RS-232

Optional Fieldbus outputs:

- Currently available: Profibus DP, Ethernet/IP, Profinet
- On request: CANopen, DeviceNet, Modbus-TCP

For detailed technical specifications please visit www.debtech.com



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