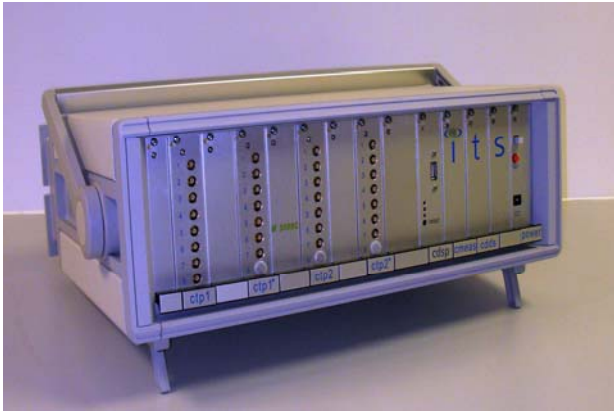


m3000 ECT



Electrical Capacitance Tomography:

Parameter	Permittivity
Process Environment	Dry (air/oil)
Typical Processes	Powder flow; fluidized beds
Sensor	External
Reference	Dual (max; min)
Also sensitive to	Moisture

m3000

The m3000 launched in 2002 is ITS's second instrument and is suitable for a wide range of research applications. The instrument operates by taking data from an array of 12 electrodes which can be non intrusive.

In contrast to many systems-based measurement techniques, tomography sensors are able to rapidly sense throughout a volume. Thus providing a dynamic picture of what is going on inside a pipe or vessel, e.g. whether a system is homogeneous.

Product Characteristics

m3000c (ECT)

- Max 24 electrodes arranged in 1,2,3 planes

Sensor Geometry:

- Circular

Applications

- CFD Validation
- Filtration
- Fluidised Beds
- Packed Beds
- Pneumatic Conveying
- Extrusion...

Industries:

- Oil & Gas
- Pharmaceuticals & Chemicals
- Nuclear
- Biotech
- FMCG
- Mining
- Environmental
- Pulp & Paper
- Others...

Benefits to users are:

- Increased process understanding
- More effective process development
- Improved and more consistent product quality

m3000c



Operation

Measurement Principals: ECT
Number of electrodes: 24; either 12 x 2 planes, 8 x 3 planes or 24 x 1 plane
Image reconstruction algorithm: Linear back projection

System performance

Accuracy: $\approx 0.01-1$ pF with one plane sensor
Stability: $< 1\%$ deviation (@10 kHz, 2 hours)
Frame acquisition speed: 20 ms/frame
Spatial resolution: 5%-10%
Online measurement speed: 4 frames/ S @ 12 electrodes

Hardware

Input injection method: 18 V
Injection frequency: 1 MHz
Output: 0.001 +10 V (pp)
Memory : 1MB EPROM, 80KB RAM
Max no. measurement frame: Programmable
Mode of measurement: Sequential

Power Supply

Power input: 100-240 V a/c, 50/60 Hz 1.5A
Consumption: DC 24 V 45W

Software

GUI: VC++ Class
Data display: Online view and manage tomography data
Tomograms images
Output: P2k file, which can be analysed using the ITS toolsuite

Computer Requirements

CPU: Pentium 4 (1.6 GHz or higher) or equivalent
RAM: 512MB
Operating System: Windows 2000/ XP / Vista
Serial Ports: USB 2