

ATEX & ELECTRICAL PRODUCTS - A GUIDE

WHAT IS THE ATEX DIRECTIVE?

The ATEX directive 94/9/E (100a) covers the use of equipment in areas where dust or gas hazard may exist. The directive became mandatory for new installations from July 1st 2003. This wallchart gives basic details of the electrical aspects of the directive and the range of **SYNATEL** products currently available, carrying independent approval by a certifying body, for use in dust hazard areas. Installation is covered by ATEX 137 directive.

PRODUCT CLASSIFICATION, Surface Industry (II)

There are three product categories.

Category	Very high level of safety	2 separate faults will not give rise to a hazardous failure.
Category 2	High level of safety	1 separate fault will not give rise to a hazardous failure.
Category 3	Normal level of safety	Safe in normal operation.

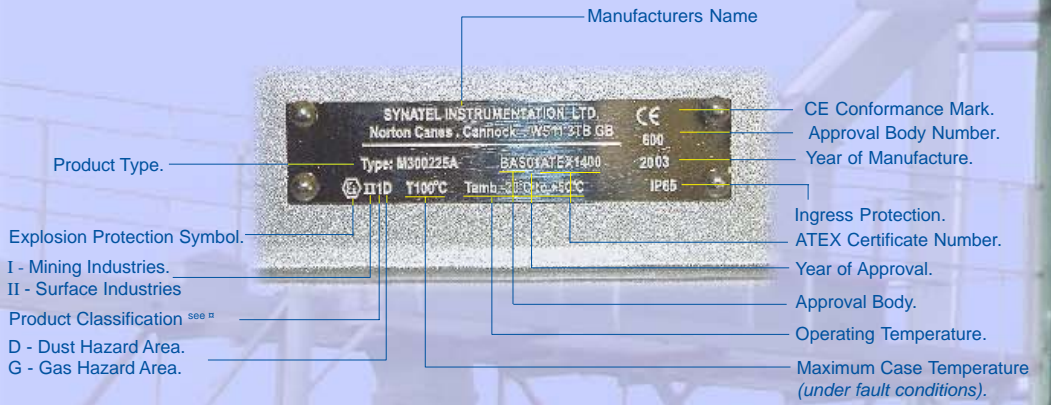
Mining Industry (I) has category M1 & M2.

AREA CLASSIFICATION

Dust	Gas	
Zone 20	Zone 0	Hazard present continuously or greater than 1000 hrs/year.
Zone 21	Zone 1	Hazard may be present in normal operation <1000 & >10 hrs/year.
Zone 22	Zone 2	Hazard present only under fault conditions <10 hrs/year.

It is generally accepted that Category 1 equipment is needed for Zone 20 applications, Category 2 for Zone 21 & Category 3 for Zone 22 use. Individual applications may vary. Selection of the correct product for particular applications is the responsibility of the user. For example, a Category 1 product can be used in Zone 20, 21 or 22 areas, a Category 3 product cannot be used in Zone 20 or 21.

PRODUCT LABELLING EXPLAINED



Label must be produced in a durable, wear resistant material.

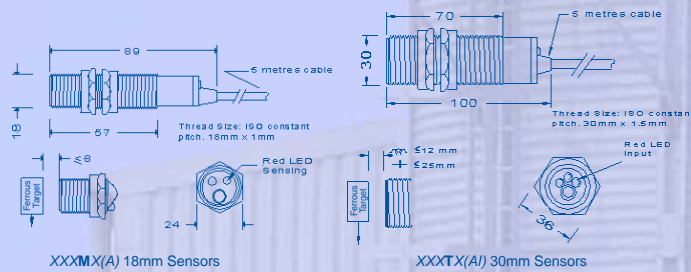
INGRESS PROTECTION (IP) CODING

FIRST NUMERAL	SECOND NUMERAL
Protection against solid bodies	Protection against liquid
No protection	No protection
Objects greater than 50mm	Vertically dripping water
Objects greater than 12mm	Angled dripping water - 75° to 90°
Objects greater than 2.5mm	Splashed water
Objects greater than 1.0mm	Sprayed water
Dust protected	Water jets
Dust tight	Heavy seas
	Effects of immersion
	Indefinite immersion

Example: **IP65** = Equipment is Dust tight and protected against Water jets

CAPACITIVE & INDUCTIVE PROXIMITY SWITCHES

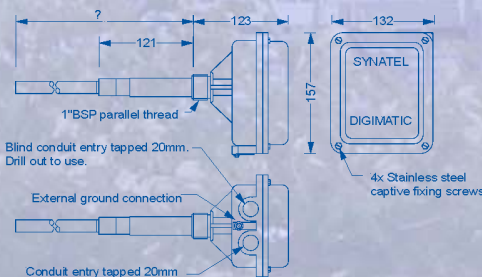
18mm & 30mm inductive plus 30mm capacitive sensors for mains & low voltage applications. Capacitive sensors detect most materials and are used for level sensing or general object detection. Inductive sensors detect all metals.



SPECIFICATION:	Capacitive		Inductive		
	CD1TZ(AI) CE1TZ(AI)	CD1TR(AI) CE1TR(AI)	ID1MZ(A) IE1MZ(A)	ID/E1MO(A)	ID1TZ(AI) IE1TZ(AI)
Approval	Ex II 1D T100°C Tamb-15°C to +50°C Baseefa03ATEX0673X		Ex II 1D T100°C Tamb-15°C to +50°C Baseefa03ATEX0589X		Ex II 1D T100°C Tamb-15°C to +50°C Baseefa03ATEX0673X
Supply	24-240V ac/dc			10-30V dc	24-240V ac/dc
Output	FET 2 wire rated @ 200 mA max	S.P.C.O relay rated @ 2.5A 240V	FET 2 wire rated @ 200 mA max	Fully opto-isolated transistor rated @ 30V dc 100mA max.	FET 2 wire rated @ 200 mA max.
Output State (not sensing)	XDXXX(A) or (AI) - Off (De-energised *) XEXXX(A) or (AI) - On (Energised *)		Normally Off, reverse supply wires to invert output state		XDXXX(AI) - Off # XEXXX(AI) - On #
Operating Speed	1Hz		50Hz ac/250Hz dc	250Hz	50Hz ac/250Hz dc
Max. Sensing Distance	Metal (ferrous): 25mm, PVC 2mm - 30 dia target		8mm - 18 dia target	8mm - 18 dia target	12mm - 30 dia target
Cable to EN 60332-1	5 metre, 2 wire, 600/1000V, fire retardant	5 metre, 5 wire, 600/1000V, fire retardant	5 metre, 2 wire, 600/1000V, fire retardant	5 metre, 4 wire, 600/1000V, fire retardant	5 metre, 2 wire, 600/1000V, fire retardant
How to order	Specify units by type number as shown above.				

DIGIMATIC DML4(A) LEVEL CONTROL

The Digimatic DML4(A) level probe is ideal for fixed point level detection in most materials including grain, flour, sugar, animal feeds, edible oils etc.

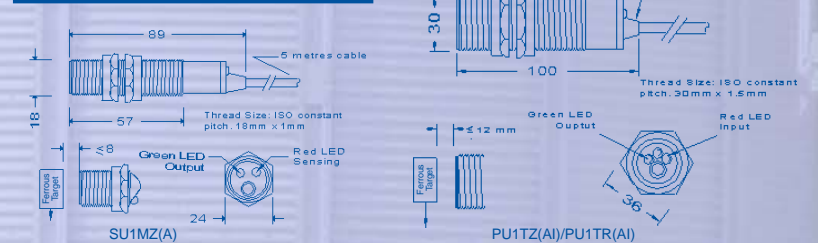
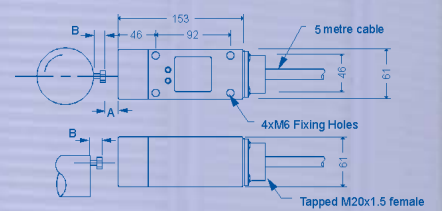


SPECIFICATION:	DML4(AW)
Approval:	Ex II 1D T100°C Tamb-20°C to +50°C BAS01ATEX1400.
Supply:	24V dc, 110/230V ac all in the same unit.
Consumption:	2VA.
Output:	S.P.C.O Relay rated @ 2.5A 240V non-inductive.
Calibration:	Microprocessor based automatic or manual calibration.
Fail-safe mode:	High or low level fail safe mode, switch selectable.
Output delay timer:	0-120 second, user programmable. Delay on material arriving & leaving.
Probe rods:	20 cm, 30 cm, 1 mtr, 2 mtr solid stainless steel rods or 10 mtr stainless wire rope. All probes may be cut to required length.
How to order:	Specify Digimatic DML4(AW) plus probe length required.

More details available on the web: www.atexapproved.com

ROTAMATIC/ROTASLIP underspeed monitors and ROTASTOP stopped motion monitor.

A range of sensors suitable for either stopped motion or under-speed monitoring, available in DIN limit switch package, 30 mm dia or 18mm dia enclosures. Ideal for use on elevators, conveyors and rotary seals. A single unit covers all specified supply voltages & speed/time

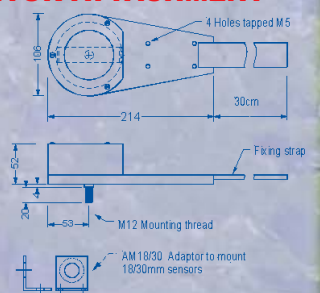


SPECIFICATION:	Stopped Motion	Underspeed		
	SU1MZ(A)	PU1TZ(AI)	PU1TR(AI)	PU1DR(A)
Approval	Ex II 1D T100°C Tamb-15°C to +50°C Baseefa03ATEX0589X	Ex II 1D T100°C Tamb-15°C to +50°C Baseefa01ATEX0673X	Ex II 1D T100°C Tamb-15°C to +50°C Baseefa01ATEX0673X	Ex II 2D T100°C Tamb-15°C to +50°C BAS01ATEX2365X
Supply	24-240V ac/dc	12-240V dc, 24-240V ac		
Consumption	.5VA plus load.			
Output	FET rated @ 200mA max.		S.P.C.O Relay rated @ 2.5A 240V	
Operating Speed:	Minimum of 1 target within 4 seconds	10-3600P.P.M		
Calibration	N/A fixed at 4 seconds.	Calibrated whilst machinery is running at normal speed, output calibrates for 20% below set speed.		
Time delay	Programmable start-up delay, 0-120 seconds.			
Re-calibration	N/A fixed at 4 seconds	Units can be recalibrated as often as required and will remember settings with power removed.		
Cable to EN60332-1	5 metre, 2 wire, 600/1000V, fire retardant	5 metre, 5 wire, 600/1000V, fire retardant	5 metre, 5 wire, 600/1000V, fire retardant	5 metre, 5 wire, 600/1000V, fire retardant
How to order:	Specify Rotastop SU1MZ(A)	Rotastop PU1TZ(A)	Rotastop PU1TR(A)	Rotamatic PU1DR(A)

More details available on the web: www.atexapproved.com

WHIRLIGIG SPEED MONITOR ATTACHMENT

The Whirligig provides a low cost & simple means of fitting sensors to machinery. Targets are fully enclosed, removing the need for further guarding.



SPECIFICATION:	WHIRLIGIG WG1-(A)-?P
Approval:	Ex II 1Gdc T100°C Tamb-15°C to +50°C Baseefa01ATEX0675
Pulse Targets:	2 pulse as standard, 1, 4 & 8 available as option.
Sensor Fitment:	All brackets and mounting holes provided for fitting Synatel 18, 30mm and Din Limit switch style sensors.
Fixing:	M12 threaded hole required in shaft to be monitored, Whirligig base plate is secured to static part of machinery with strap supplied.
Running Speed:	3000 R.P.M
How to order:	Specify Whirligig WG1-(A)-?P , ? = 1, 2, 4 or 8 pulse. 2 pulse as standard.

More details available on the web: www.atexapproved.com

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