

# Safety

## for elevators, bucket chain conveyors and conveyor belts

The perfect control



### ALS 906 Serie

Speed/alignment/bursting discs  
 speed + alarm display  
 sensor monitoring  
 wire monitoring  
 single alarm  
 group alarm  
 1-10 sensors  
 max 2 speed sensors  
 max 8 alignment sensors  
 max 8 bursting discs/backup indicators  
 optional RS485 interface  
 internal logbook (128 entries)  
 default memory

### ALT 605 Serie

Connection for 2 elevators  
 1-10 sensors  
 max 8 x bearing temperature sensors  
 max 2 motor temperature sensors  
 single limit value  
 group limit alarm  
 single and group alarm  
 temperature and alarmdisplay  
 1 - 4 alarm outputs  
 optional RS485 interface  
 internal logbook (128 entries)  
 default memory

Linking  
 ALS906 / ALT605  
 can be linked via the RS485  
 interface with other  
 networks

software example with RS485 included in scope of supply

### Guidelines for explosionprotection according to ATEX 2014-34-EU enclosure II, par..1.5.1

Safety devices have to function independantly from internal measuring- and/or control devices. [...] Switching operations with direct impact on the final controlling element must be possible without software control. Agromatic safety units and sensors have been designed and constructed in this regard. According to example database from BGR104 evelators, conveyor belts and general conveyors should be monitored on slippage, alignment and temperature increase in bearings.

These methods, described in EN 1127-1 (principles and methodology Ex-protection), EN 13463-5 (constructive safety), EN954-1 cat. 2 to 4 resp. SIL2-3 acc. to EN61508, EN 13463-6 (control of ignition sources) have been considered in the Agromatic unit serie ALS906 and ALT605.



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Worldwide the conveyor is one of the most dangerous machine used in mills etc. By a qualitatively high safety control with speed- and alignment sensors, combined with bearing temperature control the dangerous conditions can be avoided (protection for personel and machines). The units mentioned underneath enable the safe and complete protection of elevators, bucket chain conveyors and conveying belts. Agromatic offers the complete range starting with all ATEX tested sensors up to the control units with the single components. You can choose from the wide range of complete sets (sensors and control unit) or single components. The variety allows safety control in all possible applications (example double conveyor).

## Components: the control units

### ALS906

#### Art. 5060001

Combined speed- alignment control unit for connection of max. 10 sensors. Simply configuration at site due to clear parameter control. 1 - 2 alarms for optical single alarming can be set.

Alarm outputs pot-free relay contacts. Adjustable pull time delay (15sec). Display of nominal speed. Adjustable tolerance values. For connection of all Agromatic standard sensors, for operation in all zone categories. Constant wire and sensor control. Safety categorie 2. DIN 35 snap housing. Display of values. Optional RS 485 data interface with program example for S7. Auxiliary supply 24 VDC. Integrated logbook for 128 entries. (measuring range speed 5 - 9999rev/min)



### ALT605

#### Art. 5262

10-channel temperature control unit for safety control of bearing control of bearings of 1 or 2 elevators (with motor) simultaneously. Control of each 4 shaft bushings and drive temperature. Automatic scanning of connected temperature sensors, scanning of adjusted limit value, display of temperatures with sensor number and alarm output (alarm memory). Alarms can be configurated for 1-4 pot-free relay alarm outputs or via an optional RS 485 data interface with program example for S7. Safety category 2. DIN 35 snap housing, auxiliary supply 24 VDC. Integrated logbook for 128 entries. For the operation in all zone categories. Measuring range -30..210°C, Ex II (1) D



### ALSP10

Art. 7166 Power supply unit 115/230AC/24VDC for ALS605 or ALT 605 units with sensors. Connection up to 10 units. DIN 35 snap housing (only necessary if 24V is not available in switchbox)

## Components: the sensors

### ASLS2000 PNP NC for zone separation 20/22

#### Art. 2120

Opto-magnetical safety sensor for alignment control of elevator belts, mainly for application with plastic buckets and double elevators (two sensors per alignment are needed). Adjustment not necessary. No mechanical wear parts. Fibreglas with rod breaking protection. Intrinsic safe construction for application in zone 20 with zone separation. Auxiliary voltage 10-35VDC Integrated thermo fuse.

Ex II 1/3 D IP 65 T 90°C.



### ASIQ80 CE80 PNP NC+NO for zone 22

#### Art. 3080010

Interference resistant, inductive sensor with mountingbow in aluminium art. 3080007 for alignment control of elevator belts especially with application of metal buckets. (Two sensors per alignment control are needed, at right and left side).

Fixing behind sight glas art. 3714 with included mountingset. Connectioncable 2m, shielded. Power supply 10-35 VDC signaloutput PNP NC max. 200mA Switching distance adjustable in the range of 10-80mm. LED display. Installation size 80x80x50mm

Application in zone 22: Ex II 3D tc IIIC T80°C Dc



### ASI12 CE4 PNP NC Art. 4006, PNP NO Art. 4005

#### ASI18 CE8 PNP NC+NO Art. 4023

with shielded connectioncable 1.5m

Inductive sensor for speed registration and bursting disc with 4 or 8mm switching distance.

Scanning of speed at base/drive shaft (shaft extension, keyway or at shaft or other projecting parts like e.g. screws). The same sensor is used for the control of spill flaps and bursting discs

Delivery complete with 2 fixing nuts. Connection voltage 10-35 VDC

Signal output PNP max. 200 mA

Switching distance max. 4 / 8mm LED functioning display

Diameter 12mm (M12x1mm), 18mm(M18x1mm)

Integrated thermofuse

Application in zone 22: Ex II 3D Ex tc IIIC T80°C Dc





**ROTO art. 3080014**

The Roto speed sensor can easily be mounted at the shaft by means of the M8 thread. Either a M18 sensor can be used or even a M30 by just turning the mounting bracket. The white belt acts as stabilisation. The speed transmitter is protected by the transparent polycarbonate housing. Rugged construction in V2A stainless steel.



**ABR 100 art. 5070001**

Deflection pulley switch for zone 1/2 and 21/22  
Safety deflection pulley switch for monitoring of conveyor belts running with control unit ALS906

Wheel height 95mm, adjusting range 100mm  
Scanning contact 1 switch (3-wire safety switching), max admissible contactload 250VAC 6A/ 24/230VDC 0,25A  
Ex II 2G EEx de IIC T6 / Ex II2D IP65 - T80°C



**Threaded temperature sensor art. 1207**

M8x10mm for integration in bearing shells, with 2m shielded connection cable. Application zone 22: Ex II 3D Ex tcD IIIC IP67 T 200°C Dc



**Threaded temperature sensor art. 5030008**

M10x1 length 10mm for integration in bearing shells, with 2m shielded connection cable. Application zone 22: Ex II 3D Ex tcD IIIC IP67 T 200°C Dc

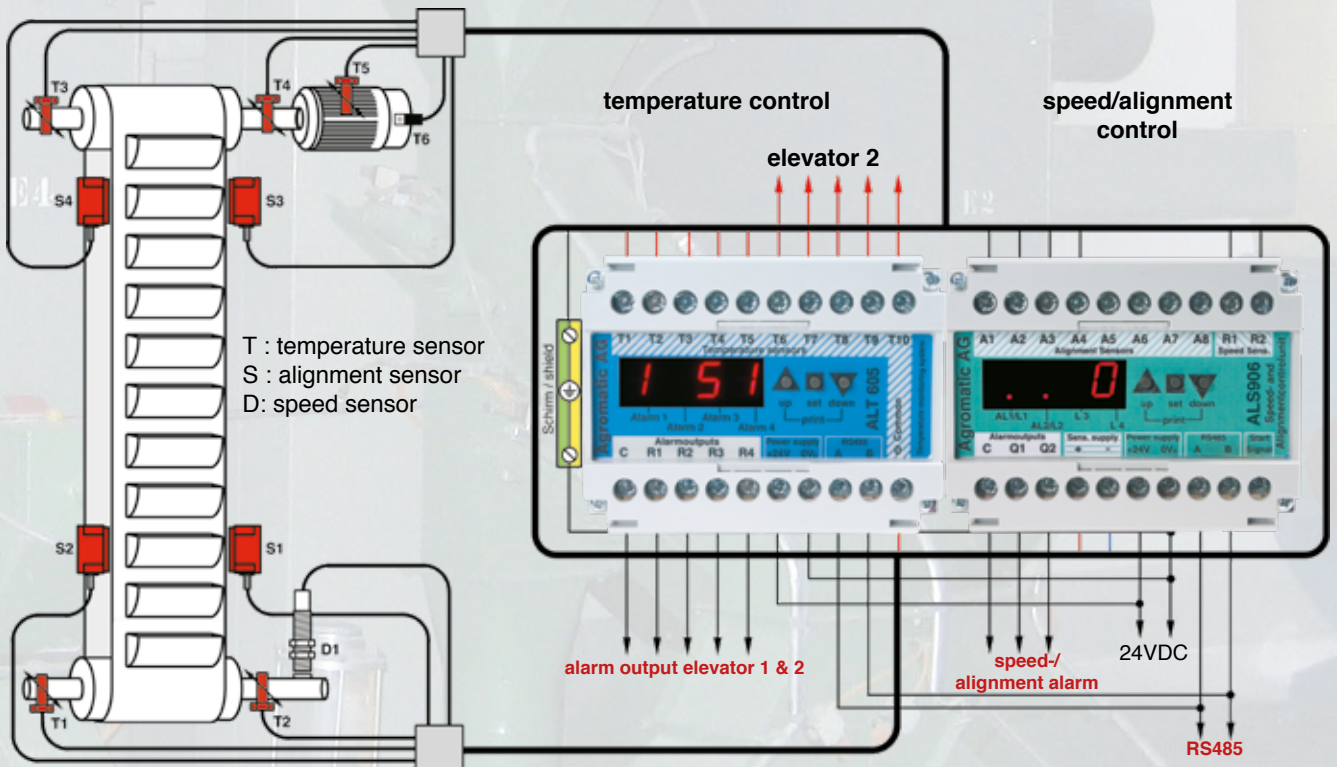
**Flat temperature sensor AFTF50 art. 1218**

Sensor for fixing to existing motor screws, under grease nipple or fixing by means of strap. With 2m shielded connection cable. Application zone 22: Ex II 3D Ex tcD IIIC IP67 T 200°C Dc

## The principle

The complete monitoringset of **Agromatic** allows modular construction based on the special requirements of the explosion document.

The modular conception allows extension at all times. The electrical wiring can be combined for speed-/alignment and temperature control. This enables to only use one wire from control to head or base of elevator. Attention: electrical junctionboxes are not included in the scope of supply. Basically: only shielded cable with a shield of at least 50 dB should be used



Complete sets always consist of control unit and sensors, but without auxiliary material such as screws, cable and junction-boxes. For application of inductive sensors zone separation sight glasses have to be ordered separately. However the ATEX protection/- fixingbows are included in the standard scope of supply for ATEX sensors. Please pay attention to the zones specified in your explosion specification document for your plant. Take into account the specific country regulations. Please contact us for further information. Alignment control for elevators: for heights of more than 25m (or safety category 2-4) we recommend to scan alignment at top and base shaft.

## Please make the selection: complete sets or single units

Set :	Voltage:	Art. No:	Description:
ALS906/D	24VDC	506 0002	electronic unit with 1 ASI12 speed sensors
ALS906/D/D	24VDC	506 0003	electronic unit with 2 ASI12 speed sensors
ALS906/S	24VDC	506 0004	electronic unit with 2 ASIQ80 alignment sensors (inductive)
ALS906/S/S	24VDC	506 0005	electronic unit with 4 ASIQ80 alignment sensors (inductive)
ALS906/D/S	24VDC	506 0006	electronic unit with 1 ASI12 speed - and 2 ASIQ80 alignment sensors (inductive)
ALS906/D/S/S	24VDC	506 0007	electronic unit with 1 ASI12 speed - and 4 ASIQ80 alignment sensors (inductive)
ALS906/D/S/S/S	24VDC	506 0008	electronic unit with 1 ASI12 speed - and 8 ASIQ80 alignment sensors (inductive, for double elev.)
ALS906/SO	24VDC	506 0009	electronic unit with 2 ASLS2000 alignment sensors
ALS906/SO/SO	24VDC	506 0010	electronic unit with 4 ASLS2000 alignment sensors
ALS906/D/SO	24VDC	506 0011	electronic unit with 1 ASI12 speed- and 2 ASLS2000 alignment sensors
ALS906/D/SO/SO	24VDC	506 0012	electronic unit with 1 ASI12 speed- and 4 ASLS2000 alignment sensors
ALS906/D/SO/SO/SO/SO	24VDC	506 0013	electronic unit with 1 ASI12 speed- and 8 ASLS2000 alignment sensors
ALS906/D/D/S/S	24VDC	506 0014	electronic unit with 2 ASI12 speed - and 4 ASIQ80 alignment sensors (inductive)
ALS906/D/D/SO/SO	24VDC	506 0015	electronic unit with 2 ASI12 speed- and 4 ASLS2000 alignment sensors
ALS906/D/D/SO	24VDC	506 0016	electronic unit with 2 ASI12 speed- and 2 ASLS2000 alignment sensors
<b>Single units</b>			<b>single units for speed - alignment - bursting disks - chain conveyors</b>
ALS906	24VDC	506 0001	electronic unit ALS906 ohne Sensoren, please state requested configuration
ASI12 CE4 PNP NO	10..30VDC	000 4005	speed sensor switching distance max 4mm / shielded ATEX
ASI12 CE4 PNP NC	10..30VDC	000 4006	speed sensor switching distance max 4mm / shielded ATEX
ASI18 CE4 PNP NC+NO	10..30VDC	000 4023	speed sensor switching distance max 8mm / shielded ATEX
ASIQ30 DC15 PNP NC+NO	10..35VDC	306 0002	speed sensor switching distance max 15mm / short version / shielded ATEX
ASIQ80 CE80 PNP NC+NO	10..35VDC	306 0005	alignment sensor inductive switching distance 10-80mm
ASIQ80 CE80 PNP NC+NO	10..35VDC	308 0010	alignment s. induct.switch. distance10-80mm, mountingbow + sep. glas/seal ATEX
ASLS2000 PNP NC LED	10..35VDC	000 2120	alignment sensor opto/magnetical for plastic buckets ATEX
Mountingpart		308 0007	sensor mountingbow ATEX accessories for ASIQ80-CE80 inductive sensors
Mountingpart zonesepar.		000 3714	zone separation glas Z20/21-22-zonefree with sealing
ABR100		507 0001	deflection pulley switch for conveying belts
Speed sensor adapter Roto		3080014	Speed Sensor holder for 18/30mm inductive sensors
ANC33M	10...35VDC	305 0005	Capacitive sensor for overflow protection in the conveyor outlet
USG 30		000 3704	Universal protection case for the ANC33M with 1 1/2" thread
			<b>bearing temperature - motor temperature - limit temperature monitoring</b>
ALT605	24VDC	000 5262	ALT605 limit temperature switch without sensors
ALT605/T	24VDC	503 0001	ALT605 limit temperature switch with 4 threaded temperature sensor
ALT605/T/M	24VDC	503 0002	ALT605 limit temperature switch with 4 threaded-/ and 1 flat temperature sensor
ALT605T/T/M	24VDC	503 0003	ALT605 limit temperature switch with 8 threaded-/ and 1 flat temperature sensor
Screw temperature sensor		000 1207	threaded temperature sensor for bearing temperature M8 thread ATEX
Screw temperature sensor		503 0008	threaded temperature sensor for bearing temperature M10 thread
Flat temperature sensor		000 1218	flat temperature sensor for mounting at motors ATEX
			<b>Optional accessories</b>
RS485 interface		000 5263	optional RS 485 interface for ALS906 and ALT605 units (to be ordered separately)
Power supply	230V	402 0001	power supply on DIN32 rail 230VAC/24VDC for 4 ALS906 or ALT605 units