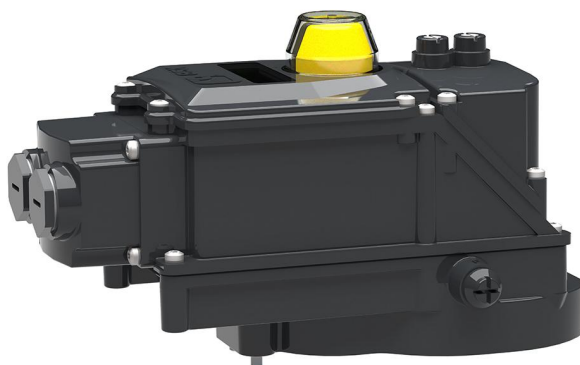


Valve Controller

AMTRONIC U

A1300/A1301

Type Series Booklet



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Type Series Booklet AMTRONIC U

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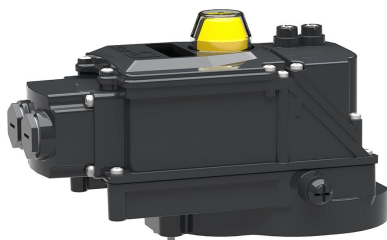
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Automation

Control Unit for Valves

AMTRONIC U



Main applications

- Water
- Waste water
- Energy
- Industry
- Shipbuilding
- Oil and gas

Operating data

Table 1: Characteristic

Ambient characteristics	Value
Min. permissible temperature [°C]	≥ -20
Max. permissible temperature [°C]	≤ +80
Enclosure	IP67 to EN 60529
Electromagnetic compatibility	To European Electromagnetic Compatibility Directive 2014/30/EU
Design ATEX (R1301) Ex ia	To ATEX Directive 2014/34/EU
Vibrations	IEC 68-2-6 Test Fc
Compressed air purity class	ISO 8573-1 Class 5

Design details

Design

- AMTRONIC U is an open/close control unit for valves.

- For automation of:
 - Quarter-turn actuators of the ACTAIR EVO, DYNACTAIR EVO type series and all previous KSB actuator generations
 - Quarter-turn actuators with standardised VDI/VDE 3845 interface
 - Linear actuators to NAMUR
- Position indicator under sight glass for remote indication
- AMTRONIC U features a polycarbonate housing (with 20% glass fibre) accommodating the following 3 components:
 - Electrical connection
 - Control and signalling PCB
 - Control air supply
- The control air supply is connected via the aluminium base:
 - Directly to ACTAIR EVO, DYNACTAIR EVO and all previous KSB actuator generations
 - Via external piping for quarter-turn actuators with standardised VDI/VDE 3845 interface and for linear actuators to NAMUR
- All design variants of AMTRONIC U provide the following electric and pneumatic functions:
 - Open/closed position indicator via microswitch or proximity sensor, actual-position feedback by 4 - 20 mA signal (optional)
 - Control air controlled by an integrated solenoid valve (4/2 monostable, 4/2 bistable or 4/3 closed in centre position)
- AMTRONIC U is designed with a control air filter, ensuring a long service life of the pneumatic control valves.
- The actuating times for open/close operations are set via the easily accessible air flow reducers.
- AMTRONIC U is designed with adjustable cams that can be used to easily set the tripping point of the limit switches.
- During commissioning and maintenance work, the actuator can be operated via the pilot valves' manual override without opening the cover.

Variants

- AMTRONIC U can be equipped with a wide variety of limit switches and proximity sensors.
- Different supply voltages for the solenoid valves
- Actual-position feedback via 4 - 20 mA signal
- AS-i variant
- Profibus DP variant
- Ex ia variant

Product benefits

- A single aluminium base allows the positioner to be mounted directly on actuators of all sizes and generations, without installation components, ensuring direct control air supply without external piping.
- With its modular design AMTRONIC U can be adjusted to customer requirements (limit switches, proximity sensors, field bus, heating resistor, actual-position feedback, etc.)
- The fitted solenoid valve is protected from blows, corrosion and dust.
- The aluminium actuating shaft increases the unit's service life.
- TORX T20 captive screws for easier installation

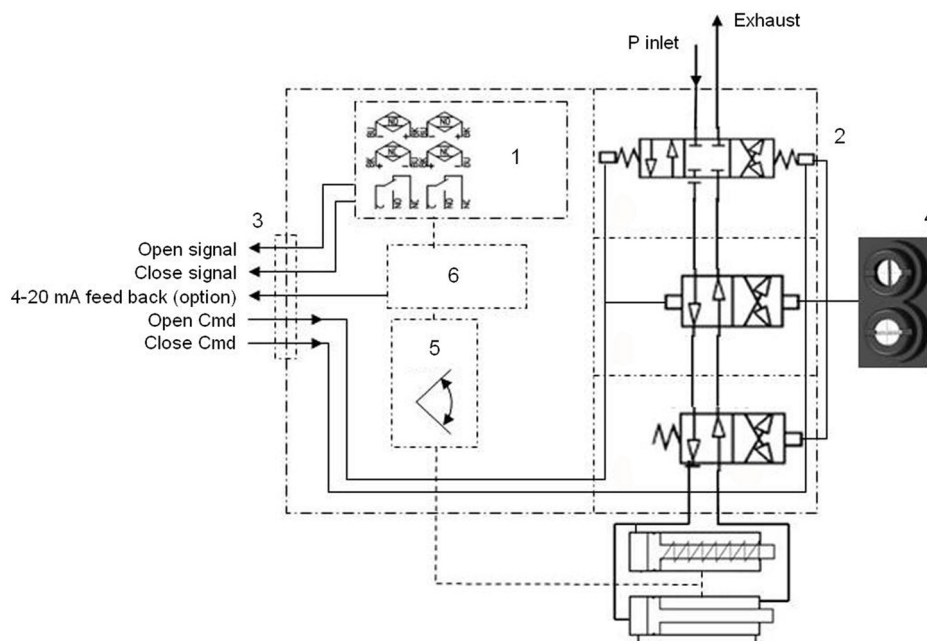
Related documents

Table 2: Information/documents

Document	Reference number
AMTRONIC U A1300 operating manual	8514.8373
AMTRONIC U AS-i A1300 operating manual	8514.8374
AMTRONIC U Profibus DP A1300 operating manual	8514.8322
AMTRONIC U Ex ia A1301 operating manual	8514.8382

Technical data

Functional schematic



Functional schematic

- | | |
|--|--|
| 1 - Limit switches or limit position sensor | 4 - Manual override |
| 2 - Control air supply: via directional control valve, either 4/2 bistable, 4/2 monostable, or 4/3 centre closed | 5 - Angle sensor (optional) |
| 3 - Terminal strip | 6 - Actual-position feedback via 4-20 mA signal (optional) |

Technical specification

Housing	
Material	Polycarbonate with 20 % glass fibre + aluminium alloy
Position indicator	Visual position indicator on the cover
Control air connection	2 x 1/4" threaded gas ports
Electrical connection	2 M20 ports for cable gland Plug-type connection to terminal strip (electric cable 1.5 mm ² max.)
Weight	2.4 kg

Control air supply	
Control air supply port	Port "P", 1/4" threaded gas port, filter fitted in the base
Exhaust port	Port "E", 1/4" threaded gas port, with silencer or for connection to an exhaust system
Operating pressure	3 to 8 bar (44 to 115 psi)
Filtration	ISO 8573-1 Class 7 (< 40 µm)
Dew point	ISO 8573-1 Class 5 (< 7 °C and in all cases 5 °C below the ambient temperature)
Lubrication	ISO 8573-1 Class 5 (< 25 mg/m ³)
Max. flow rate	400 NI/min (at 25 °C)
Consumption while idle	Zero

Control air supply function

The AMTRONIC U control unit uses electro-pneumatic spool-type directional control valves equipped with ceramic switching elements.

They are suitable for dry or lubricated control air and operated by either one or two pilot valves.

Possible configurations:

For double-acting actuators

- 4/2 electro-pneumatic directional control valve, monostable
- 4/2 electro-pneumatic directional control valve, bistable

- 4/3 electro-pneumatic directional control valve, closed under pressure

where:

Fail-safe position: 'Fail closed' in the event of a power failure

Fail-safe position: 'Fail open' in the event of a power failure

'Fail-in-last' position when de-energised (4/3 directional control valve)

For single-acting actuators

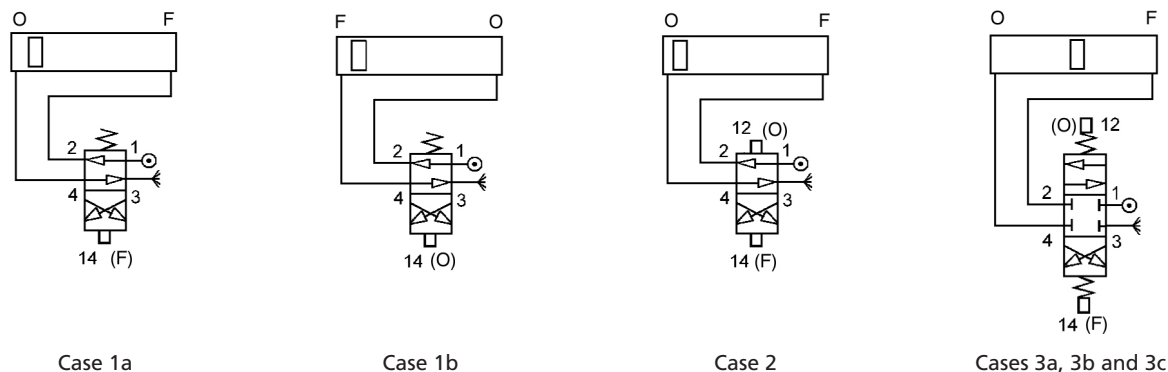
- 4/2 electro-pneumatic directional control valve, monostable
- 4/3 electro-pneumatic directional control valve, closed under pressure

where:

Fail-safe position: 'Fail closed' in the event of a power failure

Fail-safe position: 'Fail open' in the event of a power failure

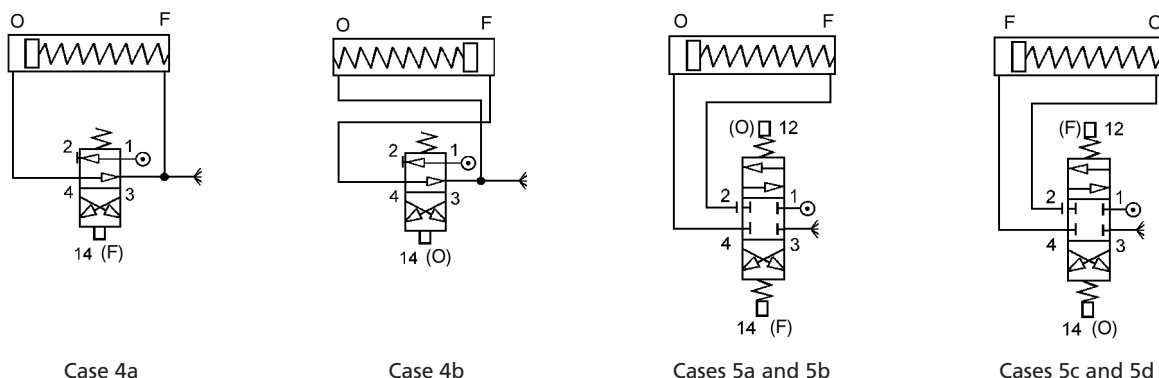
'Fail-in-last' position (4/3 directional control valve), fail-safe position being 'Fail open' or 'Fail closed' in the event of control air supply failure (single-acting actuator)

Table 3: Schematic for ACTAIR EVO double-acting actuators

Table 4: Tables for ACTAIR EVO double-acting actuators (cases 1a / 1b / 2)

Configuration	Case 1a	Case 1b	Case 2
Fail-safe position in the event of a power failure	Fail open	Fail closed	Fail open or closed
Directional control valve	4/2 monostable	4/2 monostable	4/2 bistable
Solenoid valve	1 x 3/2 NC	1 x 3/2 NC	2 x 3/2 NC

Table 5: Tables for ACTAIR EVO double-acting actuators (cases 3a / 3b / 3c)

Configuration	Case 3a	Case 3b	Case 3c
Fail-safe position in the event of a power failure	Position	Fail open	Fail closed
Directional control valve	4/3, centre closed under pressure	4/3, centre closed under pressure	4/3, centre closed under pressure
Solenoid valve	2 x 3/2 NC	1 x 3/2 NO 1 x 3/2 NC	1 x 3/2 NO 1 x 3/2 NC

Table 6: Schematic for DYNACTAIR EVO single-acting actuators

Table 7: Table for DYNACTAIR EVO single-acting actuators (cases 4a / 4b / 5a / 5b / 5c / 5d)

Configuration	Case 4a	Case 4b	Case 5a	Case 5b	Case 5c	Case 5d
Fail-safe position in the event of a power failure	Fail open	Fail closed	Fail in last position	Fail closed	Fail in last position	Fail open
Directional control valve	4/2 monostable	4/2 monostable	4/3, centre closed under pressure	4/3, centre closed under pressure	4/3, centre closed under pressure	4/3, centre closed under pressure
Solenoid valve	1 x 3/2 NC	1 x 3/2 NC	2 x 3/2 NC	1 x 3/2 NO 1 x 3/2 NC	2 x 3/2 NC	1 x 3/2 NO 1 x 3/2 NC

Table 8: Manual override of electro-pneumatic directional control valve

Manual override buttons are provided on the outside of the housing for manual actuation of the solenoid valves.

To avoid any interference with the solenoid valves' control commands, the manual override should only be used when the control unit is not energised.

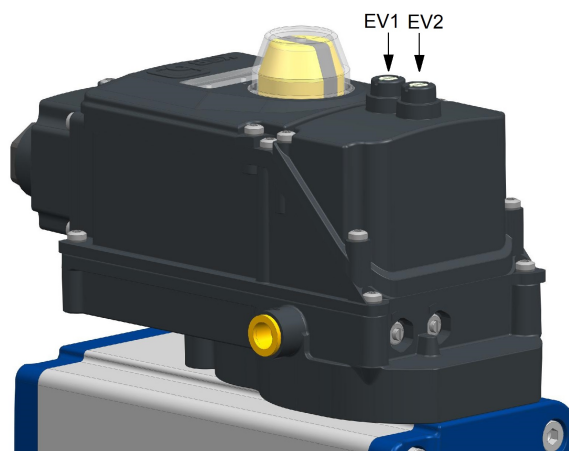
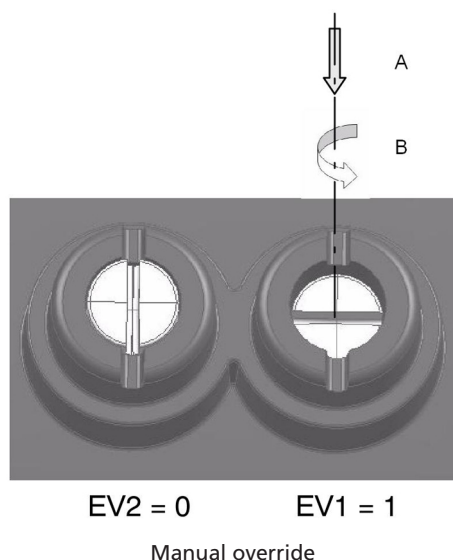


Fig. 1: Manual override provided on AMTRONIC U



The manual override buttons can be locked.

How to activate the manual override:

A - Press the manual override button.

B - Lock the manual override in this position by turning it 90°.

Position signalling function

Two position signalling options are available for AMTRONIC U as standard:

- Mechanical switches, make: Crouzet
- Proximity sensors, make: IFM

A special feature of AMTRONIC U is that it can be fitted with switches or proximity sensors from other manufacturers according to the customer's specification.

Thanks to more than 20 years of experience in valve automation, a wide range of partner products is available from IFM, P&F, Télémécanique, etc.

Should customer processes require other switches or proximity sensors, please contact us.

Table 9: Technical data of mechanical switches, A1300 (non-ATEX) and A1301 (Ex ia)

Mechanical switches, make: Crouzet			
Manufacturer:	Crouzet		
Material:	Housing	Polyester UL94V0	
	Button	Polyester	
	Contact	Ag/Ni, gold-plated	
	Membrane	Silicone	
Size:	Breaking capacity 6 A at 24 V DC and 250 V AC		
Durability, service life:	Electrical	At I = 5 A	7 x 10 ⁴ switching cycles
		At I = 1 A	3 x 10 ⁵ switching cycles
		At I = 0.2 A	10 ⁶ switching cycles
	Mechanical	2 x 10 ⁶ switching cycles	
Vibration resistance:	IEC 60068-2-6 / 3 axes / 50 g from 10 to 500 Hz		
EMC:	EN 50081-2, EN 50082-2		
Electrical connection:	Soldered to PCB		
Enclosure:	IP67		

Table 10: Technical data of position sensors, A1300 (non-ATEX)

Inductive sensors IFM XC0035	
Manufacturer:	IFM
Housing material:	IEC 60068-2-6 / 3 axes / 50 g from 10 to 500 Hz
Max. output current:	
- Peak:	200 mA
- Maximum:	200 mA
Min. output current:	4 mA
Max. voltage drop:	≤ 4.6 V
Leakage current:	≤ 0.8 mA
Max. switching frequency:	2 kHz
Operating status indication:	Yellow LED

Table 11: Technical data of position sensors, A1301 (ATEX Ex ia)

Inductive sensors		
Manufacturer:	ifm efector	Pepperl & Fuchs
Type:	NS-5002	NJ2-V3-N
Declaration of conformity:	Standard PTB 01 ATEX 2191	Standard PTB 00 ATEX 2032 X
Nominal voltage V ₀ :	8.2 V DC	8.2 V DC
Supply voltage:	7.5 to 30 V DC	-
Current input in make condition:	> 2.1 mA	> 3 mA
Current input in break condition:	< 1 mA	< 1 mA
Internal capacitance C _i :	< 80 nF	< 40 nF
Internal inductance L _i :	< 110 µH	< 50 µH
Switching frequency:	800 Hz	1000 Hz
Impact resistance:	< 30g (11 ms)	-
Vibration resistance:	10 - 55 Hz (1 mm)	-
Enclosure:	IP67	IP67
Attainable switching distance:	2 mm	1.62 mm
Output:	NC	NC
Connection:	PVC electric cable: 2 x 0.14 mm ²	PVC electric cable: 2 x 0.14 mm ²

Two additional switches or sensors can be added for intermediate position signalling.

Base "UNLIMITED"

The base type UNLIMITED has a rotatable distribution plate with 4 positions, allowing direct connection without installation components and is suitable for ACTAIR/DYNACTAIR (old generation), ACTAIR/DYNACTAIR NG(V) and ACTAIR/DYNACTAIR EVO(E). This new robust base type UNLIMITED and its actuating shaft are made from die-cast aluminium. The captive screws facilitate installation and maintenance.

This unique base provides ports for either direct control air or external control air connection.

Direct control air connection

The base type UNLIMITED can be fitted to ACTAIR and DYNACTAIR actuators (all generations) without the need for a bracket and external piping.

This mounting method is compatible with the following products:

- ACTAIR EVO 2 to 160
- DYNACTAIR EVO 1 to 80
- ACTAIR NG 2 to 160
- DYNACTAIR NG 1 to 80
- ACTAIR 3 to 200
- DYNACTAIR 1.5 to 100

A VDI/VDE 3845 interface eliminates the need for external piping and saves space.

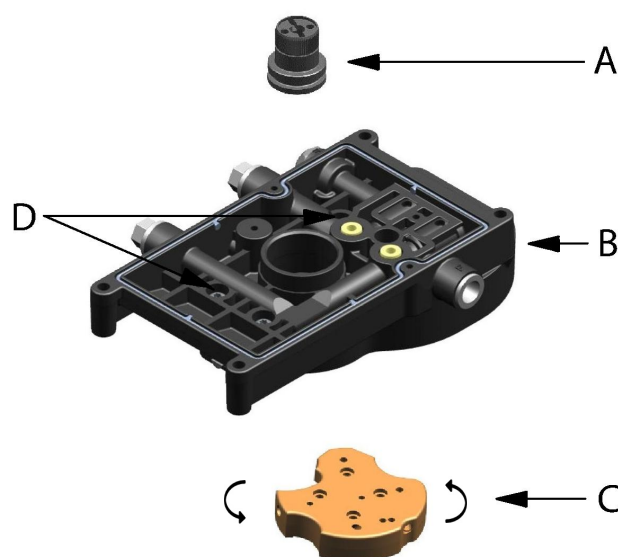


Fig. 2: Base UNLIMITED

- A: Actuating shaft made of aluminium
- B: Base made of aluminium
- C: Rotatable distribution plate with 4 positions + 4 sealing elements
- D: Mounting via interface to VDI/VDE 3845

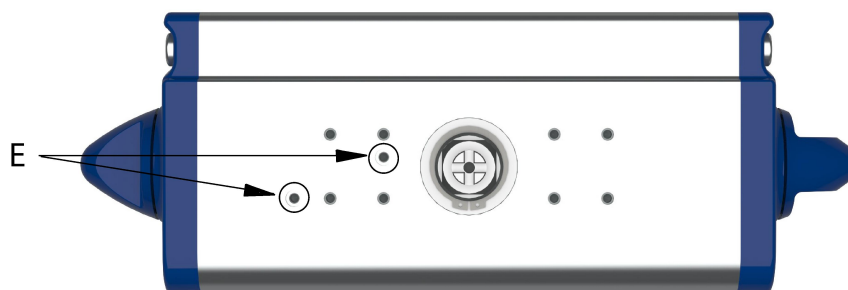


Fig. 3: Top view of ACTAIR EVO

- E: Ports for direct control air supply (KSB system)

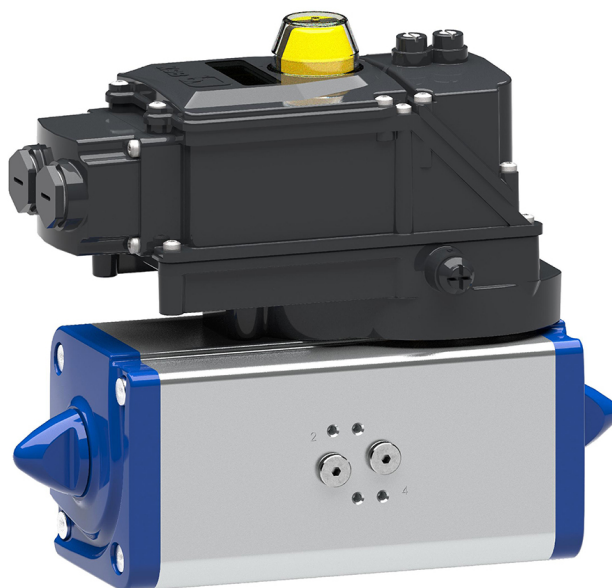


Fig. 4: AMTRONIC U mounted on ACTAIR EVO

Control air connection with piping

The base type UNLIMITED allows positioners to be mounted on ACTAIR/DYNACTAIR actuators (all generations) with piping. This mounting option is used for actuators which do not have control air connections compatible with the interface to VDI/VDE 3845.

This mounting method is compatible with the following products:

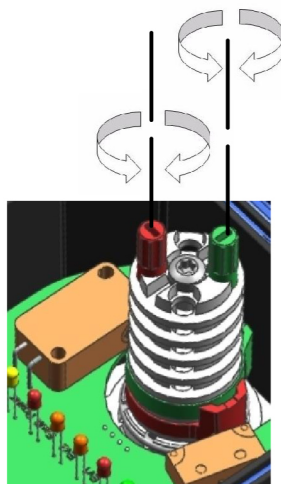
- ACTAIR EVO 240 to 700
- DYNACTAIR EVO 120 to 350
- ACTAIR 400 to 1600
- DYNACTAIR 200 to 800
- ACTAIR NG 240 to 700
- DYNACTAIR NG 120 to 350

Actuator with VDI/VDE 3845 interface



Fig. 5: AMTRONIC U mounted on ACTAIR EVO 340

Setting the cams for position signalling



Setting the switching cams

The switch or sensor settings can be made via the switching cams along the entire stroke. (See operating manual 8514.8373). The settings can be changed, particularly if the mechanical limit switches of the actuator are changed. The cams are pre-set in the factory.

Option: actual-position feedback

Table 12: Electrical characteristics of passive actual-position feedback via 4-20 mA signal (2-wire) – A1300 (non-ATEX)

Parameter	Minimum	Nominal	Maximum	Unit
Power supply	7.5	21.5	36	V DC
Output signal	3.6	/	28	mA
Resistance $[(V_{\text{supply}} - 7.5 \text{ V})/0.02 \text{ A}]$	0	700	1425	Ohm
Zero adjustment (4 mA)	2	4	11	mA
Gain adjustment (20 mA)	16	20	26	mA
Temperature range	-20	/	+70	°C

Table 13: Electrical characteristics of actual-position feedback XT42 SI NIV - A1301 (ATEX Ex ia)

Parameter	Minimum	Nominal	Maximum	Unit
Power supply	10	/	30	V DC
Output signal	4	/	20	mA
Zero adjustment (4 mA)	3.8 mA	/	4.2	mA
Gain adjustment (20 mA)	15	/	20	mA
Temperature range	-20	/	+65	°C

ATEX-compliant version of AMTRONIC U A1301

AMTRONIC U A1301 has been certified by the notified body LCIE for use in the "Gas" ATEX zone.

The EU type test certificate LCIE 15 ATEX 3011 X has been issued.

AMTRONIC U A1301 can be used for a temperature range of -10 °C to +50 °C.

The applicable marking of AMTRONIC U A1301 depends on the type of switch (inductive sensor or integrated actual-position feedback device):

II 1 G - Ex ia IIC T6

II 1 G Ex ia IIB T6 Ga

II 2 G Ex ia IIC T6 Gb

For more details refer to the AMTRONIC U A1301 operating manual, reference number 8514.8382.

Field bus communication version

Field bus communication is ensured by integrating a printed circuit board.

A field bus system makes the wiring of control units for on/off applications straightforward and helps to reduce installation costs. AMTRONIC U is compatible with Profibus DP and AS-i field bus systems.

AMTRONIC U AS-i

The AS-i (Actuator Sensor Interface) field bus is used for sensors and actuators in on/off applications. It is a master/slave network: The master receives the monitoring and control information from the AMTRONIC U (slave components). This network is of a simple and robust design and can be easily installed. A two-core cable is all that is required for power supply and transmission of digitalised information. 62 AS-i slaves can be connected in an AS-i network over a distance of 100 metres. Extensions are possible using repeaters. AMTRONIC U has an AS-i interface with 2 inputs and 2 outputs. S-B.A.E and S-3.O profiles are available. The commands from the electro-pneumatic pilot valves are transmitted via the two outputs while the limit switch status (1 for Open and 1 for Closed) is provided via the two inputs. KSB recommends using the SMARTRONIC U AS-i digital positioner for positioning applications with an AS-i field bus.

AMTRONIC U Profibus DP

A slave interface is integrated in the AMTRONIC U for Profibus DP (Decentralized Periphery) which transmits information to the master (PLC) via a twisted-pair shielded bus cable. This interface ensures that up to 126 slave components can be connected over a distance of 1200 m (up to 10 km when using repeaters with a transmission speed of 1.5 Mbit/s). AMTRONIC U Profibus DP has two outputs for solenoid valve control and two inputs for the limit switches' signals. The slave components are connected by a shielded electric cable (twisted pair) which transmits the Profibus DP field bus control information and supplies the electrical voltage (24 V DC). KSB recommends using the SMARTRONIC U PC Profibus DP intelligent positioner for positioning applications with a Profibus DP field bus.

Table 14: Technical data of the field buses

	AS-i	Profibus DP		
Topology	Bus, tree or ring	Bus, tree with repeater option		
Medium	2-core cable/power supply AS-i	Shielded 4-core cable: twisted-pair, power supply 24 V DC		
Network speed and length	Cycle time of 10 msec Length of 100 to 300 m with repeater	Speed (kbits/s)	Length (without repeater)	Length (with repeater)
Profile/version	- S-B.A.E (AS-i V2.11 and higher) - S-3.0 (all As-i versions)	9.6	1200 m	10 km
		19.2	1200 m	10 km
		45.45	1200 m	10 km
		93.75	1200 m	10 km
		187.5	1000 m	6 km
		500	400 m	1 km
		1500	200 m	600 m
Max. number of stations	- S-B.A.E: 62 slaves - S-3.0: 31 slaves	32 per segment - max. 126		
Bus access	Polling	Master/slave polling: token between masters		
Addressing	EEPROM	Encoders		
Power input	3 W (max.)	3 W (max.)		
Power supply	26.5 to 31.5 V DC	24 V DC + 15 %		

Materials

AMTRONIC U A1300/1301 materials

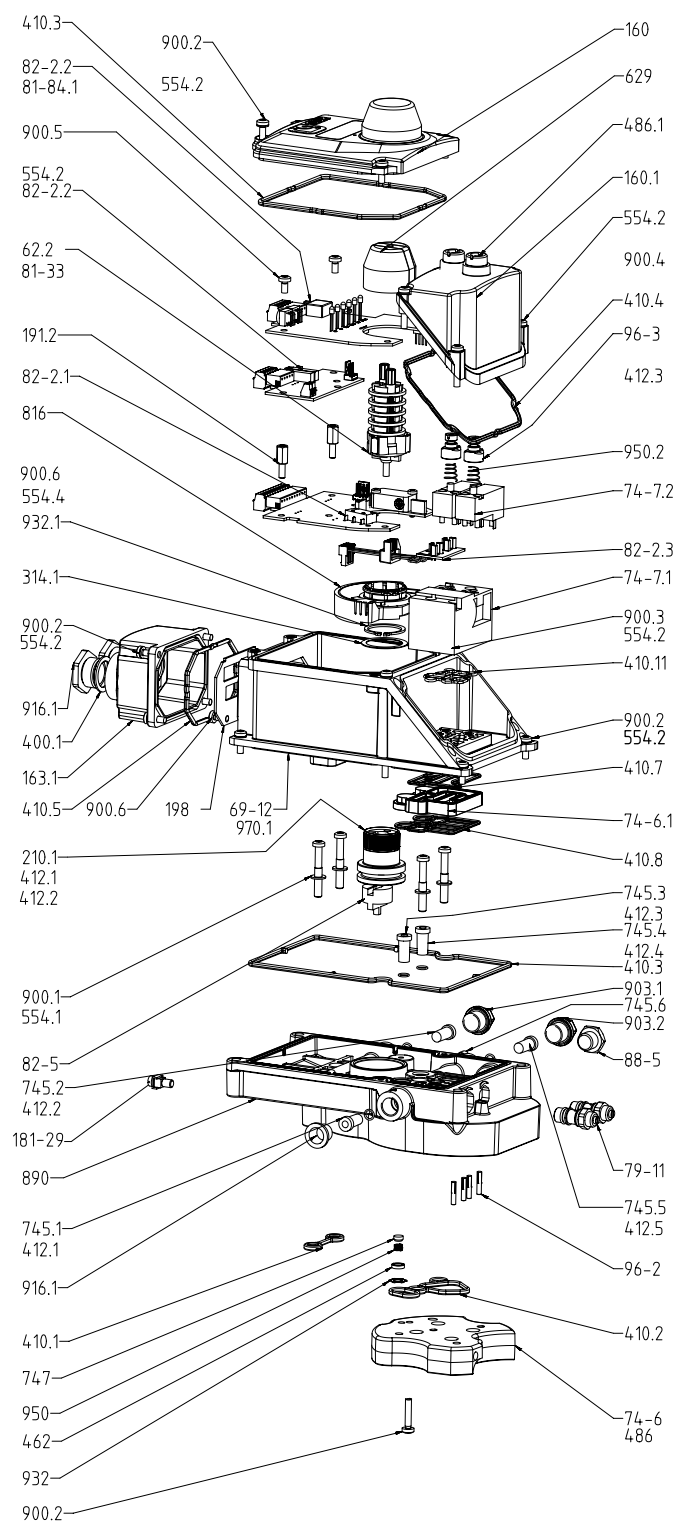


Fig. 6: Exploded view of A1300/A1301

Table 15: List of components

Part No.	Description	Materials
160	Cover	Polycarbonate with 20 % glass fibre
160.1	Cover (directional control valve)	Polycarbonate with 20 % glass fibre
163.1	Bonnet	Polycarbonate with 20 % glass fibre
181-29	Earth terminal	Steel
191.2	Spacer, PCB	Nickel-plated brass
198.1	Connection plate	Polyamide
210.1	Actuating shaft	Aluminium alloy
314.1	Anti-friction disc	Stainless steel, type 304L
400.1	Gasket	Neoprene
410.1	Profile seal	NBR80
410.2	Profile seal	NBR80
410.3	Profile seal	NBR70
410.4	Profile seal	NBR70
410.5	Profile seal	NBR70
410.7	Profile seal	NBR70
410.8	Profile seal	NBR70
410.11	Profile seal	NBR70
412.1	O-ring	NBR70
412.2	O-ring	NBR70
412.3	O-ring	NBR70
412.4	O-ring	NBR70
412.5	O-ring	NBR70
462	Bearing disc	Polyamide
486	Ball	Steel
486.1	Ball	Steel
554.1	Washer	Stainless steel
554.2	Washer	Stainless steel
554.4	Serrated lock washer	Steel
629	Position indicator assembly	
62-2	Adjustable cam assembly	
69-12	Housing	Polycarbonate with 20 % glass fibre
745.1	Sintered filter	Bronze
745.2	Sintered filter	Bronze
745.3	Sintered filter	Bronze
745.4	Sintered filter	Bronze
745.5	Sintered filter	Bronze
745.6	Sintered filter	Bronze
74.6	Distribution plate	
74-6.1	Distribution plate A/B	
74-7.1	Directional control valve	
74-7.2	Pilot valve	
747	Profile seal	
79-11	Flow reducer	
816	Angle sensor assembly	
81-33	Detection plate	Steel
81-84.1	Circuit diagram	
82-2.1	Printed circuit board	
82-2.2	Printed circuit board	
82-2.3	Actual-position feedback	
82.5	Adapter, shaft	Thermoplastic
88-5	Silencer	Bronze
890	Base	Aluminium alloy
900.1	Bolt/screw	A2-70
900.2	Hexagon socket head cap screw	A2-70
900.3	Hexagon socket head cap screw	A2-70
900.4	Hexagon socket head cap screw	A2-70
900.5	Hexagon socket head cap screw	A2-70
900.6	Self-tapping screw	A2-80

Part No.	Description	Materials
903.1	Plug	Polyamide
903.2	Plug	Polyamide
916.1	Screw plug	Polyamide
932	Reinforced circlip	Steel
932.1	Circlip	Steel
950	Spring	Stainless steel
950.2	Spring	Stainless steel
96-2	Grooved pin	Stainless steel
96-3	Manual override	Polycarbonate SM60/0
970.1	Sticker	Adhesive polyester

Variants

Adaptation for mounting on linear actuators to NAMUR

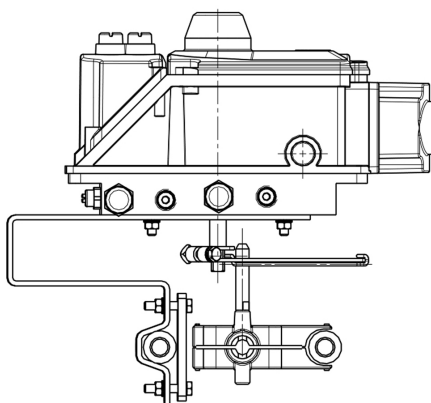


Fig. 7: Front view

Dimensions

AMTRONIC U dimensions

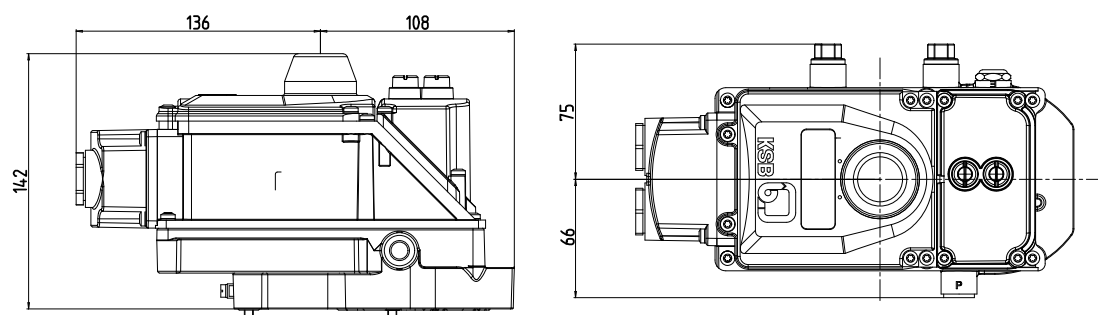


Fig. 8: Dimensions of AMTRONIC U / types A1300 and A1301

Purchase order specifications
Table 16: Type code of AMTRONIC U A1300

AMTRONIC U	A001300	.	.	.	.	.	.	.	.	.	.	.	.	0	.	.	6	0	0	.
Sensors																				
Contact on printed circuit board		1	0	0	0															
Sensor on printed circuit board		2	0	0	0															
Contact V3 with cores		B	1	1												0				
Contact V3 with electric cable		B	2	1												0				
Contact V3 with cable terminal 4.8		B	3	1												0				
Contact V3 with cable terminal 6.3		B	4	1												0				
Contact V3 soldering terminal		B	6	1												0				
Sensor V3 PNP with 3-core cable		H	2	1												0				
Sensor V3 NPN with 3-core cable		H	2	2												0				
Sensor V3 AC/DC with 2-core cable		H	A	3												0				
Sensor V3 NAMUR with 2-core cable		H	A	4												0				
Sensor V3 PNP with 3 cable terminals 4.8		H	3	1												0				
Sensor V3 AC/DC with 2 cable terminals 4.8		H	B	3												0				
Sensor V3 NAMUR with 2 cable terminals 4.8		H	B	4												0				
Sensor V3 PNP with 3 cable terminals 6.3		H	4	1												0				
Sensor 40x26x12 PNP with 3-core cable		J	2	1			0									0				
Sensor 40x26x12 AC/DC with 2-core cable		J	A	3			0									0				
Sensor PNP with 3-core cable, diameter 6.5		K	2	1			0									0				
Sensor M8 PNP with 3-core cable		L	2	1			0									0				
Sensor M12 PNP with 3-core cable		M	2	1			0									0				
Sensor M12 AC/DC with 2-core cable		M	A	3			0									0				
Sensor M12 NAMUR with 2-core cable		M	A	4			0									0				
Sensor M14 NAMUR with 2-core cable		N	A	4			0									0				
Sensor M18 PNP with 3-core cable		P	2	1			0									0				
Sensor M18 NPN with 3-core cable		P	2	2			0									0				
Sensor M18 AC/DC with 2-core cable		P	A	3			0									0				
Sensor M18 NAMUR with 2-core cable		P	A	4			0									0				
Position detection																				
1/Open and 1/Closed						1														
1/O						3														
1/C						4														
1/Open and 1/Closed and 2/intermediate position		0	0	0	6	0										0	0			
Actual-position feedback																				
Without actual-position feedback						0										.	.			
With angle sensor 5 kOhm						1										0	0			
Actual-position feedback via passive 4-20 mA signal (2-wire system)						4										0	0			
Actual-position feedback via passive 20-4 mA signal (2-wire system)						5										0	0			
Electrical connection																				
2 plugs, plastic, M20, IP67									0											
2 cable glands, plastic, M20, IP67 (diameter: 6 to 12 mm)									1											
2 cable glands, metal, M20, IP67 (diameter: 6 to 12)									2											
1 connector M12 + 1 plug									M											
1 straight connector with 12 contact pins + 1 plug M20									@											
1 straight connector with 12 contact pins + 1 straight connector with 7 contact pins									&											
Electro-pneumatic directional control valve																				
4/2 monostable – Open/closed									P											
4/2 bistable – Open/closed									Q											
4/3 centre closed									R											

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AMTRONIC U	A001300	0	.	.	6	0	0	.
Voltage, electro-pneumatic directional control valve																				
230 V AC 50/60 Hz												2								
110 V AC 50/60 Hz												3								
48 V AC 50/60 Hz												4								
24 V AC 50/60 Hz												5								
24 V DC												7								
Actuator																				
ACTAIR 3 to 200 with closed-position travel stop												2								
ACTAIR 3 to 200, with open-position travel stop												3								
ACTELEC 400 to 1600												4								
DYNACTAIR 1.5 to 25, Fail Closed in the event of control air failure												6								
DYNACTAIR 1.5 to 25, Fail Open in the event of control air failure												7								
DYNACTAIR 50 to 100, Fail Closed in the event of control air failure												8								
DYNACTAIR 50 to 100, Fail Open in the event of control air failure												9								
DYNACTAIR 200 to 800, Fail Closed in the event of control air failure												J								
DYNACTAIR 200 to 800, Fail Open in the event of control air failure												K								
DYNACTAIR 200 to 800, Fail Closed in the event of control air failure												A								
DYNACTAIR 200 to 800, Fail Open in the event of control air failure												B								
DYNACTAIR 200 to 800, Fail Open in the event of control air failure												C								
DYNACTAIR 200 to 800, Fail Open in the event of control air failure												D								
ACTAIR NG / EVO 2												E								
ACTAIR NG / EVO 5 - 20												F								
ACTAIR NG / EVO 30 - 160												G								
ACTAIR NG / EVO 240 - 700												H								
DYNACTAIR EVO 1, Fail Closed in the event of control air failure												P								
DYNACTAIR EVO 2 - 8, Fail Closed in the event of control air failure												Q								
DYNACTAIR EVO 2 - 8, Fail Closed in the event of control air failure												R								
DYNACTAIR EVO 12 - 80, Fail Closed in the event of control air failure												S								
DYNACTAIR EVO 120 - 350, Fail Closed in the event of control air failure												T								
DYNACTAIR EVO 1, Fail Open in the event of control air failure												W								
DYNACTAIR EVO 2 - 8, Fail Open in the event of control air failure												X								
DYNACTAIR EVO 12 - 80, Fail Open in the event of control air failure												Y								
DYNACTAIR EVO 120 - 350, Fail Open in the event of control air failure												Z								
ACTAIR / DYNACTAIR (all sizes and generations) + external connection																				
Pneumatic quarter-turn actuator, double-acting, external connection																				
Pneumatic quarter-turn actuator, single-acting, external connection																				
Pneumatic linear actuator, double-acting, NAMUR interface																				
Pneumatic linear actuator, single-acting, NAMUR interface																				
Fail-safe position																				
Fail Closed in the event of power failure													A							
Fail Open in the event of power failure													B							
Fail-in-last-position in the event of power failure											R		C							
Undefined position in the event of power failure										Q			D							
Field bus																				
None																0				
Profibus DP						1	0				7					2	0			
AS-i profile S-B.A.E (62 slaves)						1	0				7					7	0			
AS-i S-3.0 (31 slaves)						1	0				7					8	0			

AMTRONIC U	A001300	0	.	.	6	0	0	.
Heating resistor																				
None																	0			
With heating resistor 12 to 24 V DC			0	0	0	1	0										1			
With heating resistor 100 to 240 V AC			0	0	0	1	0										2			
Indicator																				
3D sight glass																	6			
Configuration																				
None																		0		
Diagnosis																				
None																			0	
Protection against accumulation of water																				
None																				0
Yes																				1

Table 17: Type code of AMTRONIC U A1301

AMTRONIC U	A001301	.	.	.	.	.	.	.	.	7	.	.	0	0	0	6	0	0	
Sensors																			
Contact on printed circuit board		1	0	0	0														
Sensor V3 NAMUR IFM		H	A	4	1														
Sensor V3 NAMUR Pepperl &Fuchs		H	A	4	2														
Position detection																			
1/Open and 1/Closed						1													
1/O						3													
1/C						4													
Actual-position feedback																			
Without actual-position feedback						0													
Actual-position feedback via passive 4-20 mA signal (2-wire system)						4													
Electrical connection																			
2 plugs, plastic, M20, IP67										0									
2 cable glands, plastic, EEx ia ISO M20 (diameter 8 to 13)										W									
2 cable glands, metal, EEx ia ISO M20 (diameter 8 to 13)										X									
2 cable glands, metal, EEx dIIC ISO M20 (diameter 8.5 to 16)										€									
Electro-pneumatic directional control valve																			
4/2 monostable – Open/closed										P									
4/2 bistable – Open/closed										Q									
4/3 centre closed										R									
Voltage, electro-pneumatic directional control valve																			
24 V DC										7									

AMTRONIC U	A001301	7	.	.	0	0	0	6	0	0	
Actuator																			
ACTAIR 3 to 200 with closed-position travel stop											2								
ACTAIR 3 to 200, with open-position travel stop											3								
ACTELEC 400 to 1600											4								
DYNACTAIR 1.5 to 25, Fail Closed in the event of control air failure											6								
DYNACTAIR 1.5 to 25, Fail Open in the event of control air failure											7								
DYNACTAIR 50 to 100, Fail Closed in the event of control air failure											8								
DYNACTAIR 50 to 100, Fail Open in the event of control air failure											9								
DYNACTAIR 200 to 800, Fail Closed in the event of control air failure											J								
DYNACTAIR 200 to 800, Fail Open in the event of control air failure											K								
DYNACTAIR 200 to 800, Fail Open in the event of control air failure											A								
DYNACTAIR 200 to 800, Fail Open in the event of control air failure											B								
DYNACTAIR 200 to 800, Fail Open in the event of control air failure											C								
DYNACTAIR 200 to 800, Fail Open in the event of control air failure											D								
ACTAIR NG / EVO 2											E								
ACTAIR NG / EVO 5 - 20											F								
ACTAIR NG / EVO 30 - 160											G								
ACTAIR NG / EVO 240 - 700											H								
DYNACTAIR EVO 1, Fail Closed in the event of control air failure											P								
DYNACTAIR EVO 2 - 8, Fail Closed in the event of control air failure											Q								
DYNACTAIR EVO 2 - 8, Fail Closed in the event of control air failure											R								
DYNACTAIR EVO 12 - 80, Fail Closed in the event of control air failure											S								
DYNACTAIR EVO 120 - 350, Fail Closed in the event of control air failure											T								
DYNACTAIR EVO 1, Fail Open in the event of control air failure											W								
DYNACTAIR EVO 2 - 8, Fail Open in the event of control air failure											X								
DYNACTAIR EVO 12 - 80, Fail Open in the event of control air failure											Y								
DYNACTAIR EVO 120 - 350, Fail Open in the event of control air failure											Z								
ACTAIR / DYNACTAIR (all sizes and generations) + external connection																			
Pneumatic quarter-turn actuator, double-acting, external connection																			
Pneumatic quarter-turn actuator, single-acting, external connection																			
Pneumatic linear actuator, double-acting, NAMUR interface																			
Pneumatic linear actuator, single-acting, NAMUR interface																			
Fail-safe position																			
Fail Closed in the event of power failure												A							
Fail Open in the event of power failure												B							
Fail-in-last-position in the event of power failure										R		C							
Undefined position in the event of power failure										Q		D							
Field bus																			
None													0						
Heating resistor																			
None														0					
Indicator																			
3D sight glass																6			

AMTRONIC U	A001301	7	.	.	0	0	0	6	0	0	
Configuration																			
None																	0		
Diagnosis																			
None																	0		
Protection against accumulation of water																			
None																		0	
Yes																		1	



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