Type series booklet
8521.14/3-10

1/4 turn ACTELEC SG05.1 to SG12.1 (AUMA)

Direct 1/4 turn electric actuators
ACTELEC AUMA
SG05.1 - SG07.1 - SG10.1 - SG12.1

Output torques up to 1200 Nm

Applications

- All sectors of Water, Energy and Industry markets.

General features

- The range of ACTELEC 1/4 turn SG05.1 to SG12.1 series electric actuators covers output torque values up to 1200 Nm.
- These actuators have been designed for all applications and for the operation of any type ¼ turn valves (centred or double eccentric disc valves, ball valves,...).
- The mounting interface is in accordance with ISO 5211 standard.
- Equipped with an interchangeable insert, they can be easily fitted on different valve shaft (square end, flat end, key,...).
- The actuator is mounted directly or by means of an adaptator onto the valve mounting plate.
- The kinematic is irreversible in any position.

Protection

- They are hose and fine dust proof and are protected against accidental immersion: protection degree IP 67.
- Motor: insulation class F.

External coating

- Polyurethane paint, thickness 60 µm, color grey RAL 9007.

Working temperature range

- From -20° C up to +70° C.

Construction

- In standard version, ACTELEC electric actuators are designed to ensure the on-off function, intermittent duty S2 15 min.
- Remote electric control.

Basic equipments

- Electric motor protection by:
  - integrated thermic protection,
  - 2 travel limit microswitches (1 microswitch on opening position and 1 on closure position)
  - Torque limit system.
- Heating resistance anti-condensation.
- Manual emergency control by handwheel.
- Position indication.
- Mechanical adjustable travel stop(s).

Other constructions

- Integral electric control and remote control = MATIC version.
- Explosion-proof protection EExe.(Please, consult us).

Power supply

- Standard version:
  - 3-phase 230 V / 400 V - 50 Hz a.c.,
  - 1-phase 230 V - 50 Hz a. c.

Standard variant

- ATEX version in accordance with 94/9/EC directive.

Options on request (please, consult us)

- Additional microswitches adjustable on the whole travel for remote position signalisation (limit position and/or intermediate position).
- Microswitches coupled with torque limiter.
- Position transmission by potentiometer 1000 Ω or electronic transmitter 4-20 mA.
- Communicatiopn interface - Intelligence - Fieldbus.
- Other power supplies.

Manufacturing range - Characteristics

On-off function

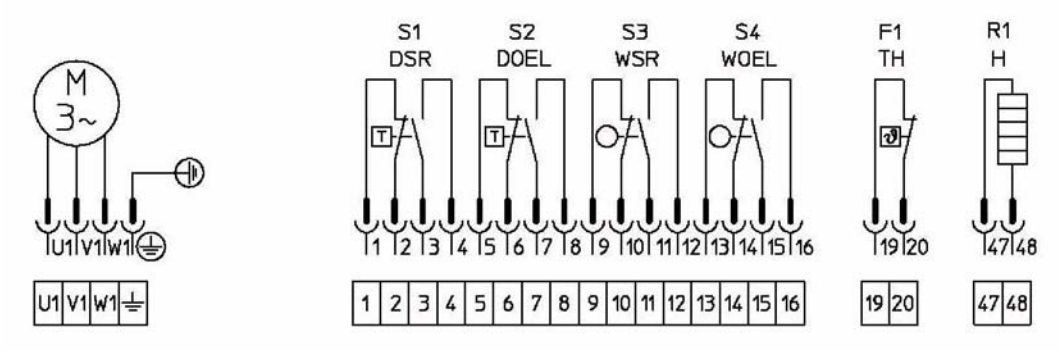
ACTELEC		SG05.1	SG07.1	SG10.1	SG12.1
Nominal torque (Nm)		150	300	600	1200
Operating time in seconds	Standard	22	22	32	63
	Option	8-11-16	8-11-16-32	16-22-45-63	22-32-45
Opening and closing travel limit switches		Standard			
Mechanical adjustable travel limit stops		Standard			
Opening and closing torque limit switches		Standard			
Heating resistance 6 W - Power supply 110-250 VAC/DC		Standard			
Emergency control Number of handwheel turns		58	58	107	110
Power supply					
3-phase 230 or 400 VAC		Wiring diagram KMS TP100/001			
1-phase 230 VAC		Wiring diagram KMS1 TP100/001			
Other connstructions					
Integral control MATIC	3-phase 230 or 400 VAC	Wiring diagram MPS1110KS3 + F18E1 / KMS TP 100/001			
	1-phase 230 VAC	Wiring diagram MPS1130KC3 - F18E1 / KMS(1) TP100/001			
Explosion-proof protection		Yes, on request / Please, consult us			

Electric actuator type	3-phase 400 VAC 50 Hz			
	Actuator output speed sec/90°	Nominal power kW	Nominal intensity A	Starting intensity A
SG05.1	8	0,090	0,50	1,0
	11	0,080	0,55	0,9
	16	0,045	0,35	0,5
	22	0,045	0,35	0,5
SG07.1	8	0,160	0,60	1,7
	11	0,160	0,60	1,7
	16	0,090	0,50	1,0
	22	0,080	0,55	0,9
	32	0,080	0,55	0,9
SG10.1	16	0,160	0,60	1,7
	22	0,160	0,60	1,7
	32	0,090	0,50	1,0
	45	0,080	0,55	0,9
	63	0,080	0,55	0,9
SG12.1	22	0,160	0,60	1,7
	32	0,160	0,60	1,7
	45	0,080	0,55	0,9
	63	0,080	0,55	0,9

Electric actuator type	1-phase 230 VAC 50 Hz			
	Actuator output speed sec/90°	Nominal power kW	Nominal intensity A	Starting intensity A
SG05.1	5,6 to 45	0,115	1,5	3
SG07.1	11 to 90	0,115	1,5	3
SG10.1	11 to 90	0,230	2	4
SG12.1	22 to 180	0,230	2	4

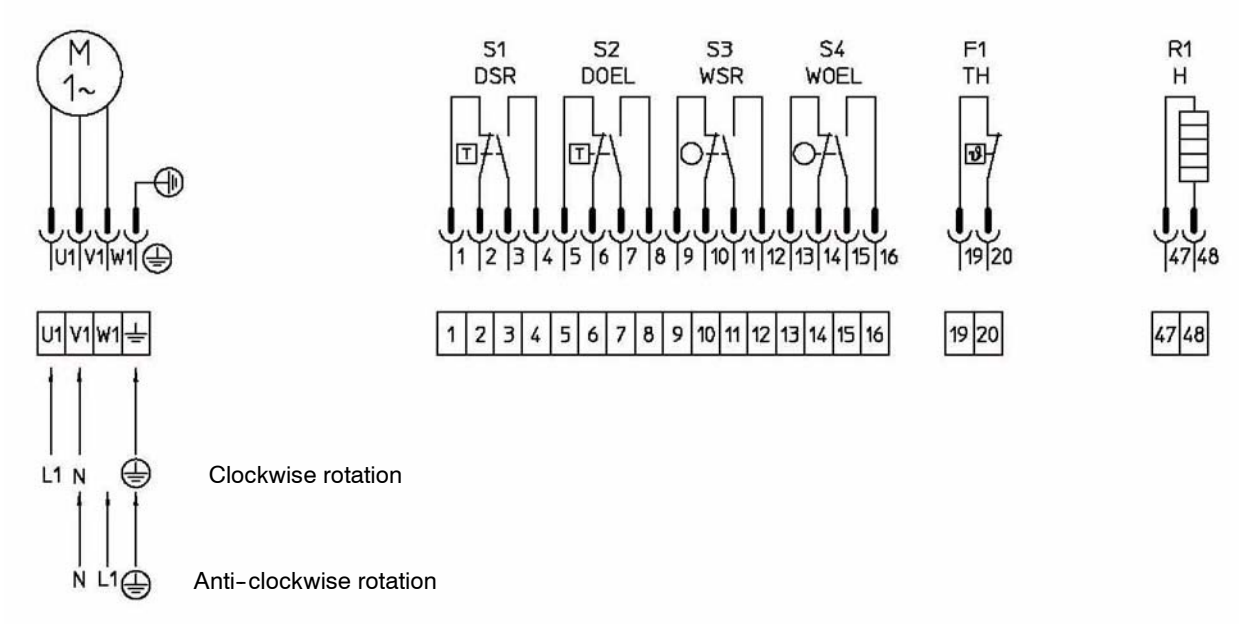
Power supply - 3-phase 230 or 400VAC 50 Hz

Wiring diagram KMS TP 100/001



Power supply - 1-phase 230VAC 50 Hz

Wiring diagram KMS1 TP100-001

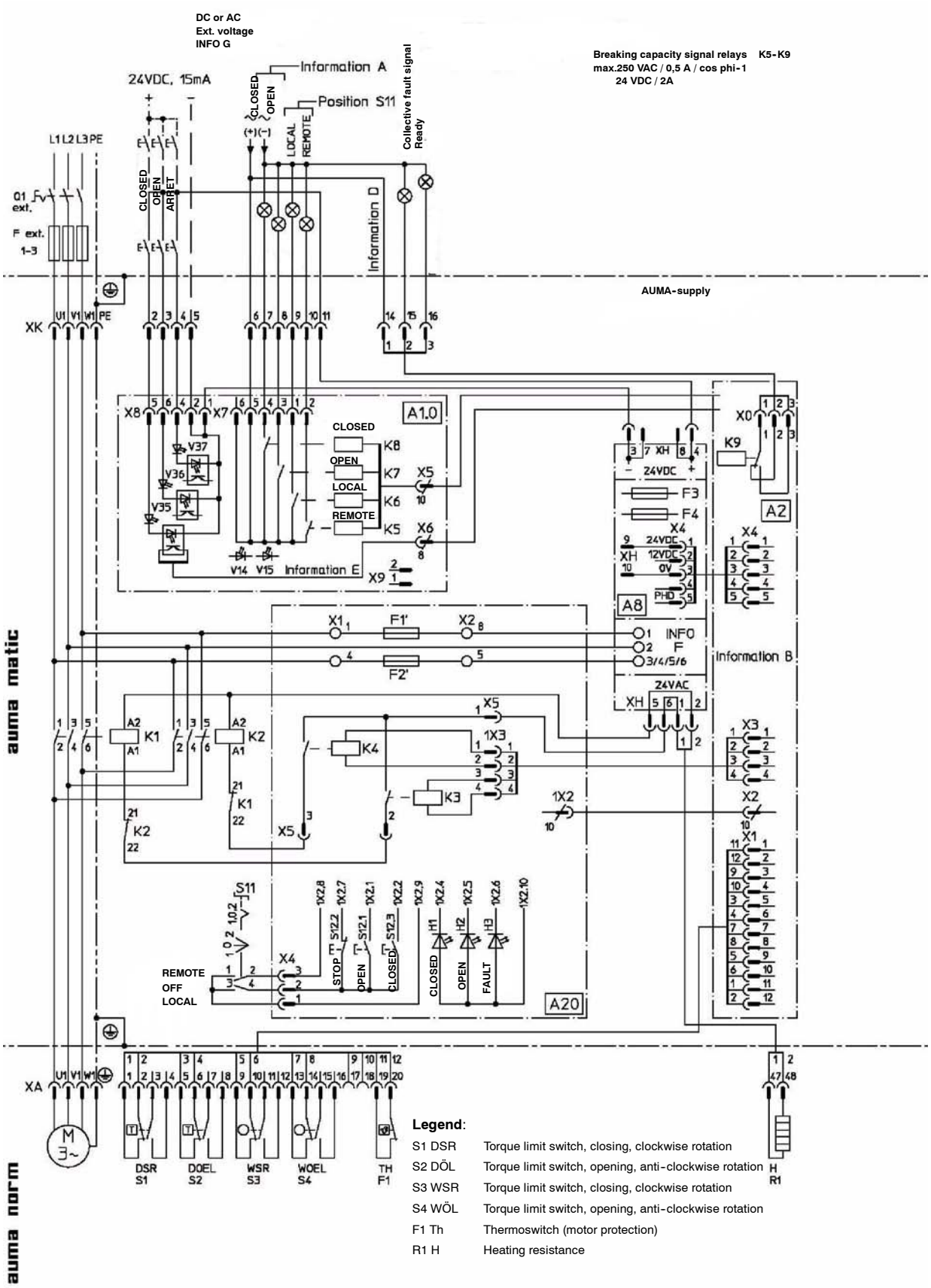


Legend :

S1 DSR	Torque limit switch, closing, clockwise rotation
S2 DÖL	Torque limit switch, opening , anti-clockwise rotation
S3 WSR	Travel limit switch, closing, clockwise rotation
S4 WÖL	Travel limit switch, opening, anti-clockwise rotation
F1 Th	Thermoswitch (motor protection)
R1 H	Heating resistance

Version: Integral control MATIC
Power supply - 3-phase 230 or 400 VAC

Wiring diagram MPS 1110KC3 - F18E1 - KMS TP100-001

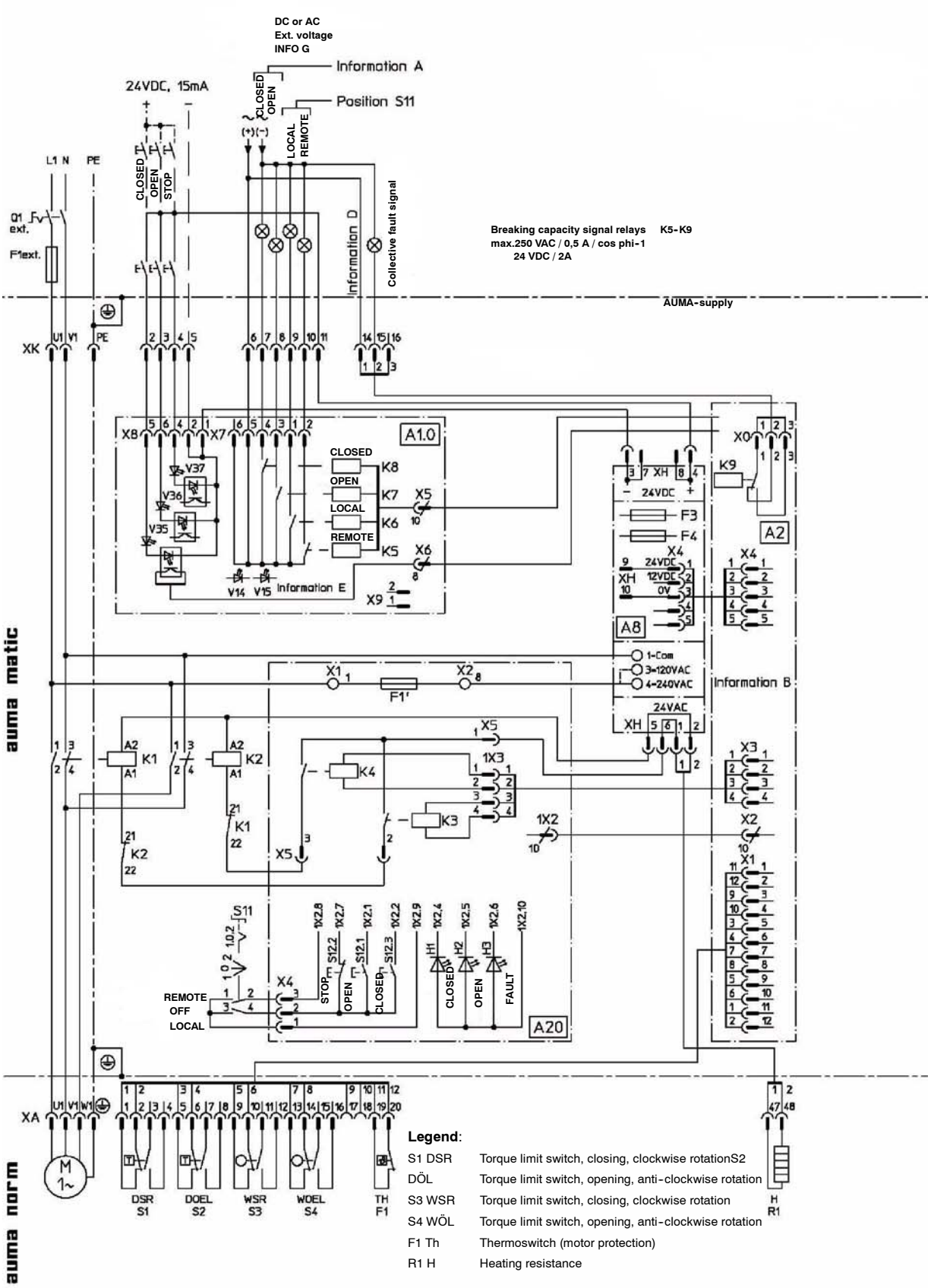


Legend:

S1 DSR	Torque limit switch, closing, clockwise rotation
S2 DÖL	Torque limit switch, opening, anti-clockwise rotation
S3 WSR	Torque limit switch, closing, clockwise rotation
S4 WÖL	Torque limit switch, opening, anti-clockwise rotation
F1 Th	Thermoswitch (motor protection)
R1 H	Heating resistance

Version: Integral control MATIC
Power supply - 1-phase 230 VAC

Wiring diagram MPS 1130KC3 - F18E1 - KMS TP100-001



Legend:

S1 DSR	Torque limit switch, closing, clockwise rotationS2
DÖL	Torque limit switch, opening, anti-clockwise rotation
S3 WSR	Torque limit switch, closing, clockwise rotation
S4 WÖL	Torque limit switch, opening, anti-clockwise rotation
F1 Th	Thermoswitch (motor protection)
R1 H	Heating resistance

Legends of wiring diagrams on pages 4, 5 and 6

S 1	DSR	Torque limit switch, closing, clockwise rotation
S 2	DÖL	Torque limit switch, opening, anti-clockwise rotation
S 3	WSR	Travel limit switch, closing, clockwise rotation
S 4	WÖL	Travel limit switch, opening, anti-clockwise rotation
S 3/2 S 4/2	WSR 1 WÖL 1	Travel limit switch in tandem operation with WSR/WÖL
F 1	Th	Thermoswitch (motor protection)
R 1	H	Heating resistance
A 1.0		Interface board
A 2		Logic board
A 7		Positioner board
A 8		Power supply board
A 20 / A 21		Signal and control board
F 1', F 2'		Primary fuses power supply
F 3, F 4		Secondary fuses

K 1, K 2	Reversing contactors
K 3, K 4	Control relays for contactors
K 5 to K 9	Signal relays
S 11 S 11/2	Selector switch Local - Off - Remote
S 12.1 S 12.2 S 12.3	Push button Open Push button Stop Push button Close
S 13	Change-over switch for travel limit or torque limit seating
V 14	LED *, phase sequence, phase failure
V 15	LED *, torque limit switch tripped in mid-travel
V 35	LED, command Close available from remote control centre
V 36	LED, command Open available from remote control centre
V37	LED, command Stop available from remote control centre

* If V 14 and V15 LED's are illuminated simultaneously, thermoswitch has tripped.

Information A :
If blinker transmitter (S5) is provided, running indication is possible (contacts open and close).
Direction Close: connections X_K6 - X_K7
Direction Open: connections X_K6 - X_K8
In the end position, the contacts remain closed.
In case signals of end positions must be included in a PLC-system, the blinking signal can be switched off, refer to AUMA MATIC operation instructions.

Information B :
With change-over switch S 13 position "1" end position Closed will be switched off by travel limit switch WSR (S3).
If the torque limit switch DSR (S 1) tips in mid-travel or in the end position, actuator will be switched off and a fault signal given.
With change-over switch S 13 in position "2", end position Closed will be switched off by torque limit switch DSR (S1). Travel limit switch WSR (S3) serves for signalisation, it must be set to operate shortly before reaching the end position Closed.
If the torque limit switch trips before the travel limit switch, this will stop the actuator and cause a fault signal.
For further programming of the logic board, e.g. for selt retaining in mode Remote, refer to AUMA MATIC operation instructions.

Information D :
The following faults are registered by the electronics and fed to a relay with change-over contacts, from where they can be transmitted as a collective fault signal to the remote control centre:
- power failure,
- wrong phase sequence,
- phase failure,
- thermoswitch tripped,
- torque switch tripped in mid travel

This fault signal can be switched off by programming, refer to AUMA MATIC operation instructions.

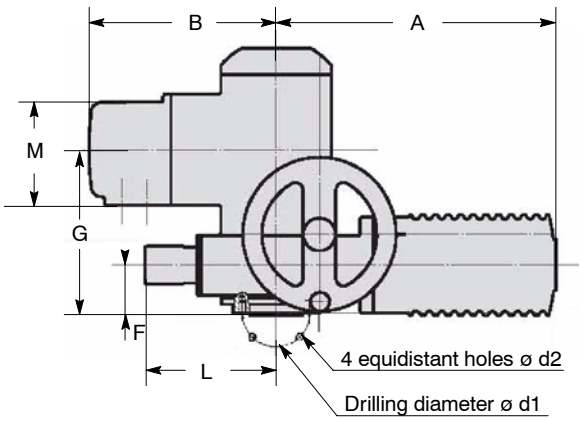
Information E :
Input signals are according to DIN 19 240. Nominal current at input X_K2, X_K3 and X_K4: 10 - 15 mA.
If internal voltage 24VDC is used for remote control, switching must be by potential-free contacts.

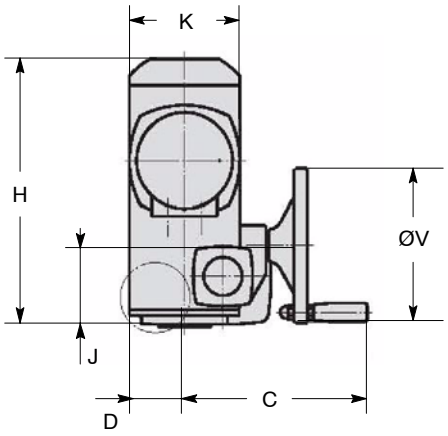
Information F :
In case of wrong phase sequence or phase failure, the actuator does not run. The fault will be indicated at LED V14 on the interface board. For fault indications refer to information D.

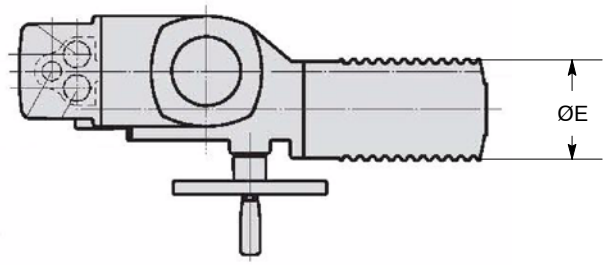
Information G :
For monitoring, potential-free contacts are provided.
The internal control voltage (X_K11 / 24V+ resp. X_K5 / 24V-) should not be used for external lamps, relays, etc...

Notes

On/off function
Overall dimensions (mm) and weight (kg)







ACTELEC Type	A	B	C	D	ø E	F	G	H	J	K	L	M	ø V	Mounting plate ISO 5211			Weight kg
														ref.	ø d1	ø d2	
SG05.1	291	195	191	58	105	50	170	275	82	115	137	115	160	F05	50	M6	18
	291	195	191	58	105	50	170	275	82	115	137	115	160	F07	70	M8	19
SG07.1	291	195	191	58	105	50	170	275	82	115	137	115	160	F07	70	M8	18
	291	195	191	58	105	50	170	275	82	115	137	115	160	F10	102	M10	19
SG10.1	301	205	216	75	105	56	170	291	88	150	172	115	160	F10	102	M10	24
	301	205	216	75	105	56	170	291	88	150	172	115	160	F12	125	M12	25
SG12.1	301	205	233	75	105	70	192	313	102	150	172	115	160	F12	125	M12	28
	301	205	233	75	105	70	192	313	102	150	172	115	160	F14	140	M14	29

Interface robinet

ACTELEC Type	ISO 5211 mounting plate*	Maximal allowable dimensions for the shaft			
		Height	Driving by square	Driving by flat	Driving by key
SG05.1	F05 / F07	32	22	22	Please, consult us
SG07.1	F07 / F10	40	22	22	
SG10.1	F10 / F12	50	30	27	
SG12.1	F12 / F14	60	36	41	

* Direct adaptation onto identical mounting plate.
Adaptation by intermediate flange onto different plate (different size or shape).

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