

# Technical Data Electric Rotary Actuators 2SA7

ECOTRON  
PROFITRON



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## General data

SIPOS actuators are suitable for automatic and safe operation of industrial valves in accordance with DIN EN ISO 22153.

## Mounting position

The actuator can be mounted in **any position**. To make local operation easier, e.g. reading information on the display, a regular mounting is recommended, i.e. the mounting flange of the valve should be positioned below the actuator. The electronics unit of the actuator can be **mounted separately** (e.g. wall bracket) using our separate mounting kit (e.g. order add-on **S41**).

## Duty classifications

### 2SA70..-

- ON-OFF duty, class **A** according to DIN EN ISO 22153
- Short-time duty **S2-15 min** according to DIN EN 60034

### 2SA73..-

- Inching/positioning duty, class **B** according to DIN EN ISO 22153

### 2SA75..-

- Modulating duty, class **C** according to DIN EN ISO 22153
  - Intermittent duty **S4/S5** min. 25 % ED duty cycle, 1200 c/h according to DIN EN 60034
- In S4 duty (without electr. braking) and S5 duty (with electr. braking) with at least 25 % relative on-time, 1,200 cycles per hour are ensured.

The actuators can be operated for all torque and speed combinations for the entire temperature range from **-20 °C to +70 °C**.

## Noise level

The noise level caused by the actuator (sound pressure level at 1 m distance) is **< 70 dB (A)**.

## Paint finish and corrosion protection

All outside screws are exclusively made of **stainless steel**. The housing material consists of a **corrosion-resistant aluminum alloy** for normal atmospheric ambient conditions. Rotary actuators 2SA7 can be used without coating but are painted with a 2K-PUR-single layer coat (two-component polyurethane single layer coating) as standard.

The single layer coating is UV-resistant. It is applied with a minimum coating thickness of 60 µm when dry, in color similar to **RAL 7037** (silver-gray). Other RAL colors (add Y35 + number of RAL color to order) are available.

After roughening and cleaning the surfaces, the single layer coating can be painted with all common painting material. This includes epoxid lacquers, nitrocellulose lacquers etc.

Protection against corrosion from outside is stipulated in corrosivity categories in accordance with DIN EN ISO 22153 (EN ISO 12944-2):

Version	<b>Standard version:</b> Corrosivity category C5	Very high corrosion protection, corrosivity category C5 <b>with long protection time</b> >> superior to 300 µm conventional paint thickness <<
Installation / Environmental condition	- Industrial areas with high humidity and aggressive atmosphere - Areas with almost permanent condensation and with high pollution	- Coastal and offshore areas with high salinity - Industrial areas with high humidity and aggressive atmosphere - Areas with almost permanent condensation and with high pollution
Order add-on	---	L38

## Lubrication

The gears are filled with durable gear oil. They therefore require little maintenance. The maintenance intervals after commissioning must be observed (refer to recommendations in operating manual). The bearings of output shaft type A are lubricated with grease.

## Degree of protection

The actuators meet the requirements of **IP68** protection as standard (DIN EN 60529).

They are fully screen-protected (electrical voltage and moving parts) and protected against the ingress of foreign bodies (dust), and against harmful quantities of water on continuous immersion up to max. 3 m head of water for a duration of max. 72 hours. During flooding up to 10 motor operations (switching cycles) are permitted.

IP68-8, continuous immersion up to max. 8 m head of water, on request!

## Vibration performance

Electric rotary actuators 2SA7 are certified according to:

	Acceleration	Frequency range	Throughput speed	Test duration
Germanischer Lloyd	0.7 g	5 – 200 Hz	in the resonance frequencies	min. 1.5 h / in 3 directions
EN 60068-2-6	2 g	5 – 500 Hz	1 octave/min	20 sweeps (10 cycles) / in 3 directions

Standard for 2SA7.1 to 2SA7.4

Loads according to EN 60068-2-6 up to **2 g** for types 2SA7.5 and 2SA7.6 on request.

Loads according to EN 60068-2-6 up to **5 g** for separate mounting of electronics and gear unit on request.

The actuators can withstand a continuous load caused by plant-generated vibrations within a frequency range of 5 Hz – 200 Hz at up to **0.5 g**.

## Ambient temperature

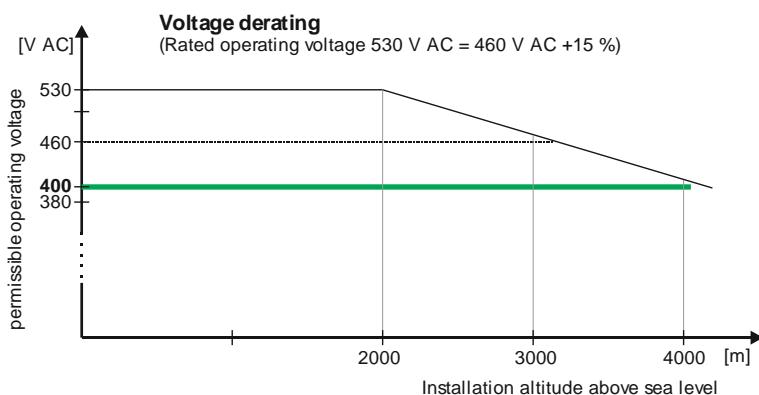
There are no functional restrictions for the temperature range of **-20 °C to +70 °C**. Lower or higher temperatures on request!

## Installation altitude above sea level

The actuators are designed for an installation altitude up to 2,000 m above sea level.

Since the insulating properties of air decrease with increasing installation altitude, a voltage derating for the maximum permissible operating voltage has to be considered at installation altitudes above 2,000 m.

Installation altitude above sea level [m]	Derating factor	permissible operating voltage [V AC]
2000	1	460 + 15 % (530 + 0 %)
3000	0.88	405 + 15 % (465 + 0 %)
4000	0.77	355 + 15 % (410 + 0 %)



When considering a limited permissible voltage tolerance, SIPOS actuators can be safely operated at installation altitudes of up to 4,000 m with 3- phase 400 V AC (-15 %/+0 %).

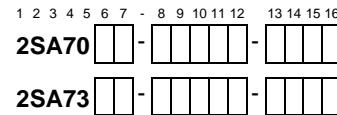
### Mechanical data

#### ON-OFF duty, Inching/positioning duty

- ON-OFF duty
- Inching/positioning duty

#### Tripping torque

Adjustable tripping torque $T_c$ [Nm] typical running torque > 50% max. torque $T_{C \text{ max.}}$ <sup>1)</sup>		Weight $\approx [kg]$
9 - 30		19
18 - 60		20
37 - 125 <sup>3)</sup>		34
75 - 250		38
150 - 500		69
300 - 1000		69
1200 - 4000		136



Force for manual mode <sup>2)</sup> >> self-locking version ( $i = 40$ ) <<	
Crank length / hand wheel dia.	at $T_{C \text{ max.}}$
60 mm	31 N
	63 N
90 mm	87 N
	174 N
$\varnothing 250$ mm	125 N
	250 N
	263 N

#### Adjustable tripping torque in steps of 10% from 30% – 100% max. torque $T_{C \text{ max.}}$ .

30 % $T_{C \text{ max.}}$ is default setting	Tripping torque range [Nm]	Tripping torque setting at .. % of $T_{C \text{ max.}}$ [Nm]							
		30 %	40 %	50 %	60 %	70 %	80 %	90 %	100 %
9 - 30	9	12	15	18	21	24	27	30	
18 - 60	18	24	30	36	42	48	54	60	
37 - 125 <sup>3)</sup>	37	50	62	75	87	100	112	125	
75 - 250	75	100	125	150	175	200	225	250	
150 - 500	150	200	250	300	350	400	450	500	
300 - 1000	300	400	500	600	700	800	900	1000	
1200 - 4000	1200	1600	2000	2400	2800	3200	3600	4000	

permitted tolerance:  $\pm 10\%$  of  $T_{C \text{ max.}}$ .

#### Flange size

DIN ISO 5210	DIN 3210	Flange size								Spindle opening [mm]
		for tripping torque [Nm]								
F07	-	9-30	18-40							0
F10	G0	9-30	18-60	37-125	75-125					1
F12	-			37-125	75-250					2
F14	G1/2		18-60	37-125	75-250	150-500	300-500			3
F16	G3					150-500	300-1000			4
F25	G4						300-1000	1200-2000		5
F30	G5							1200-4000		6

Dimensions for A shaft (d6), B1 shaft (d5) and C shaft (d11)  
see page 8

#### Manual mode

>> Switchover only when drive is at standstill! <<  
Switchover takes place by pressing in the hand crank/hand wheel, motor stops operating automatically. Electrical operation restarts automatically after releasing hand crank/hand wheel.

Direction of rotation: Turning hand crank/ hand wheel clockwise results in clockwise rotation of output shaft (Exception: 2SA708.- resp. 2SA738.-).

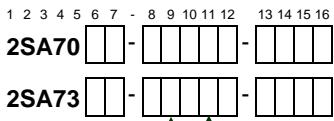
Self-locking: The hand crank/hand wheel acts directly on the motor shaft when turned by hand; the self-locking function is thus retained for self-locking actuators.

#### Output shaft design

Output shaft									
form	DIN 4)								
A	ISO 5210 103 5)	Output shaft with threaded bush	+ acme screw thread	Order-no. with „- Z“ + Y18					
B1	ISO 5210	bore with keyway							
C	3338	claw coupling							
B3	ISO 5210	bore with keyway							
B2 / B4 6)	ISO 5210	bore with keyway	Order-no. with H2Y						

Dimensions to flanges and output shafts, see page 9

- <sup>1)</sup> Exception: 35% for adjustment/setting to highest output speed for the types 2SA701 -E, 2SA702..-E, 2SA706..-C, 2SA706..-D, 2SA708..-A and 2SA708..-B resp. 2SA731..-E, 2SA732..-E, 2SA736..-C, 2SA736..-D, 2SA738..-A and 2SA738..-B and 25 % for 2SA706..-D, 2SA736..-D, 2SA708..-B and 2SA738..-B for separate mounting >10 m.
- <sup>2)</sup> Non-self-locking actuators (refer to "Output speed" column) have manual forces 30 % higher.
- <sup>3)</sup> Tripping torque range reduced to 37 – 112 Nm for 110 – 115 V connection voltage.
- <sup>4)</sup> Special output shaft and output shaft design acc. to DIN 3210 on request.
- <sup>5)</sup> Acme screw thread LH according to DIN 103, Part 2, thread nominal diameter as listed in Line 1, pitch according to preferred series. The acme screw thread must be expressly stated, e.g. Tr 16 x 4 LH DIN 103!
- <sup>6)</sup> The special bore must be stated, e.g.  $\varnothing$  26 with featherkey A8x7 DIN 6885!

**Output speed**

Speed range	Output speed [rpm]		not self-locking	default setting
	for tripping torque [Nm]			
1.25 – 10			1200-4000	3.5
2.5 – 20			[200-4000]	7
5 – 20 <sup>1)</sup>	9-30	18-60	37-112	
5 – 40	9-30	18-60	37-125 75-250 150-500 300-1000	14
10 – 40 <sup>1)</sup>	9-30	18-60		
10 – 80	9-30	18-60	37-125 75-250 150-500 300-1000	28
20 – 56 <sup>1)</sup>	9-30			
20 – 80 <sup>1)</sup>		18-60		
20 – 112	9-30		150-500	
20 – 160	18-60	37-125 75-250		56

**ECOTRON:** 7-step adjustable output speed within the selected speed range

Speed stage 4 is default setting	Speed range (n <sub>min.</sub> – n <sub>max.</sub> )	adjustable in seven steps; step-up factor 1.4 [rpm]						
		1	2	3	4	5	6	7
1.25 – 10	1.25	1.75	2.5	3.5	5	7	10	
2.5 – 20	2.5	3.5	5	7	10	14	20	
5 – 40	5	7	10	14	20	28	40	
10 – 80	10	14	20	28	40	56	80	
20 – 160	20	28	40	56	80	112	160	

**PROFITRON:** continuous adjustable output speed within the selected speed range

35% n <sub>max.</sub> is default setting	Speed range (n <sub>min.</sub> – n <sub>max.</sub> )	adjustable in 2.5% increments between 12.5 – 100% n <sub>max.</sub> [rpm]						
		12.5 %	...	35 %	...	100 %		
1.25 – 10	1.25	1.5	1.75	...	3.5	...	9.75	10
2.5 – 20	2.5	3	3.5	...	7	...	19.5	20
5 – 40	5	6	7	...	14	...	39	40
10 – 80	10	12	14	...	28	...	78	80
20 – 160	20	24	28	...	56	...	156	160

**Position recording**

mechanical position indicator	Position recording
without	signaling gear with precision metal film potentiometer
with	non-intrusive position encoder – commissioning without opening the actuator with contactless position detection (without battery), data stored in non-volatile memory, position indication via progress bar and additional value indication [%] (only PROFITRON) on the display.
	non-intrusive MWG – commissioning without opening the actuator with contactless position detection (without battery), data stored in non-volatile memory, position indication via progress bar and additional value indication [%] (only PROFITRON) on the display.

**Self-locking**

Self-locking actuators have a ratio of i=40.

Non-self-locking actuators have a ratio of i=20.

**Speed setting**

Speed is set via the hermetically sealed control button "DriveController" of the local control, via fieldbus or the PC programming software "COM-SIPOS".

In PROFITRON version, different speeds can be set for OPEN, CLOSE, EMERGENCY OPEN and EMERGENCY CLOSE.

**„non-intrusive“**

The non-intrusive versions have no signaling gear. The exact number of rotations for the travel (max. 353.000 rev/stroke with niP, max. 940 rev/stroke with MWG, resp. 235 rev/stroke with MWG for 2SA7.8) are automatically determined and saved when approaching both end positions during end position adjustment.

**Setting for signaling gear**

36 resp. 9 revs/stroke is default set- ting	setting for signaling gear	Revolutions per stroke (revs/stroke)									
	2SA701/2/3/4/ 2SA731/2/3/4/	0.8	2.1	5.5	14	36	93	240	610	1575	4020
	2SA708 2SA738	0.2	0.52	1.37	3.5	9	23.2	60	152	393	1005

<sup>1)</sup> reduced speed range for 110 – 115 V connection voltage**Adjusting the revs/stroke**

Remove the cover from the signaling gear, adjust the slide wheel so that the gear rim faces the required value on the scale.

The adjusted value is ≥ the value for the valve, e.g. a stage of 93 must be adjusted for a valve with 40 revs/stroke.

### Mechanical data – Modulation duty

#### Modulating duty

##### Tripping torque

Max. act. torque (modulating torque)	Adjustable tripping torque $T_c$ [Nm]	Weight ≈ [kg]
15	10 - 20	19
30	20 - 40	20
60	40 - 80	34
125	87 - 175	38
250	175 - 350	69
500	350 - 700	69
2000	1400-2800	136

2SA75

Crank length/ hand wheel dia.	at $T_c$ max.	Force for manual mode
60 mm	21 N	
	42 N	
90 mm	56 N	
	122 N	
Ø 250 mm	88 N	
	175 N	
	184 N	

Adjustable tripping torque in steps of 10% from 50% – 100% max. torque  $T_c$  max.

50 % $T_c$ max. is default setting	Tripping torque range [Nm]	Tripping torque setting at .. % of $T_c$ max. [Nm]					
		50 %	60 %	70 %	80 %	90 %	100 %
	10 - 20	10	12	14	16	18	20
	20 - 40	20	24	28	32	36	40
	40 - 80	40	48	56	64	72	80
	87 - 175	87	105	122	140	157	175
	175 - 350	175	210	245	280	315	350
	350 - 700	350	420	490	560	630	700
	1400 - 2800	1400	1680	1960	2240	2520	2800

permitted tolerance: ± 10% of  $T_c$  max.

##### Flange size

DIN ISO 5210	DIN 3210	Flange size for tripping torque [Nm]	Spindle opening [mm]
F07	-	10-20   20-40	Dimensions for A-shaft (d6), B1-shaft (d5) and C-shaft (d11) see page 9
F10	G0	10-20   20-40   40-80   87-122	
F12	-	40-80   87-175	
F14	G1/2	20-40   40-80   87-175   175-350   350-490	
F16	G3		
F25	G4	175-350   350-700	
F30	G5	350-700   1400-1960	
		1400-2800	

1 2 3 4 5 6 7 - 8 9 10 11 12 - 13 14 15 16

##### Manual mode

>> Switchover only when drive is at standstill! <<

Switchover takes place by pressing in the hand crank/hand wheel, motor stops operating automatically. Electrical operation restarts automatically after releasing hand crank/hand wheel.

**Direction of rotation:** Turning hand crank / hand wheel clockwise results in clockwise rotation of output shaft (Exception: 2SA758.-).

**Self-locking:** The hand wheel acts directly on the motor shaft when turned by hand; the self-locking function is thus retained for self-locking actuators.

##### Self-locking

Rotary actuators for modulating duty are **self-locking** actuators. The gear ratio is i=40.

##### Output shaft design

Output shaft	
form	DIN 1)
A	ISO 5210 103 2)
B1	ISO 5210
C	3338
B3	ISO 5210
B2 / B4 3)	ISO 5210

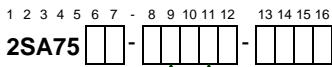
Dimensions to flanges and output shafts, see page 9

0 2 3 4 5 9

1) Special output shaft and output shaft design acc. to DIN 3210 on request.

2) Acme screw thread LH according to DIN 103, Part 2, thread nominal diameter as listed in Line 1, pitch according to preferred series. The acme screw thread must be expressly stated, e.g. Tr 16 x 4 LH DIN 103!

3) The special bore must be stated, e.g. Ø 26 with featherkey A8x7 DIN 6885!

**Output speed**

Speed range	Output speed [rpm]									default setting
	for tripping torque [Nm]									
1.25 – 10	1400-2800									3.5
5 – 20 <sup>1)</sup>	10-20 20-40 40-80									14
5 – 40	10-20 20-40 40-80 87-175 175-350 350-700									28
10 – 80	10-20 20-40 40-80 87-175 175-350									

**ECOTRON:** 7-step adjustable output speed within the selected speed range

Speed stage 4 is default setting	Speed range (n <sub>min.</sub> – n <sub>max.</sub> )	adjustable in seven steps; step-up factor 1.4 [from 1]						
		1	2	3	4	5	6	7
	1.25 – 10	1.25	1.75	2.5	3.5	5	7	10
	5 – 40	5	7	10	14	20	28	40
	10 – 80	10	14	20	28	40	56	80

**PROFITRON:** continuous adjustable output speed within the selected speed range

35% n <sub>max.</sub> is default setting	Speed range (n <sub>min.</sub> – n <sub>max.</sub> )	adjustable in 2.5% increments between 12.5 – 100% n <sub>max.</sub> [from 1]								
		12.5 %	... 35 % ...	100 %	12.5	1.5	1.75	... 3.5 ...	9.75	10
	1.25 – 10	1.25	1.5	1.75	... 3.5 ...	9.75	10			
	5 – 40	5	6	7	... 14 ...	39	40			
	10 – 80	10	12	14	... 28 ...	78	80			

**Position recording**

mechanical position indicator	Position recording									
	without	with	signaling gear with precision metal film potentiometer							
without	non-intrusive position encoder – commissioning without opening the actuator with contactless position detection (without battery), data stored in non-volatile memory, position indication via progress bar and additional value indication [%] (only PROFITRON) on the display								0	1
	non-intrusive MWG – commissioning without opening the actuator with contactless position detection (without battery), data stored in non-volatile memory, position indication via progress bar and additional value indication [%] (only PROFITRON) on the display								2	3

**Speed setting**

Speed is set via the hermetically sealed control button "DriveController" of the local control, via fieldbus or the PC programming software "COM SIPOS".

In PROFITRON version, different speeds can be set for OPEN, CLOSE, EMERGENCY OPEN and EMERGENCY CLOSE.

**„non-intrusive“**

The non-intrusive versions have no signaling gear. The exact number of rotations for the travel (max. 353.000 rev/stroke with niP; max. 940 rev/stroke with MWG, resp. 235 rev/stroke with MWG for 2SA7.8) are automatically determined and saved when approaching both end positions during end position adjustment.

**Setting for signaling gear**

36 resp. 9 revs/stroke is default setting	setting for signaling gear	Revolutions per stroke (revs/stroke)										
		2SA751/2/3/4/5/6	0.8	2.1	5.5	14	36	93	240	610	1575	
		2SA758	0.2	0.52	1.37	3.5	9	23.2	60	152	393	1005

**Adjusting the revs/stroke**

Remove the cover from the signaling gear, adjust the slide wheel so that the gear rim faces the required value on the scale. The adjusted value is  $\geq$  the value for the valve, e.g. a stage of 93 must be adjusted for a valve with 40 revs/stroke.

<sup>1)</sup> reduced speed range for 110 – 115 V connection voltage

# Technical Data

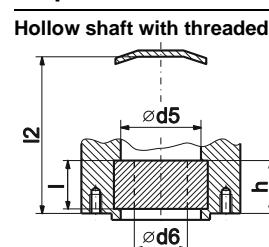
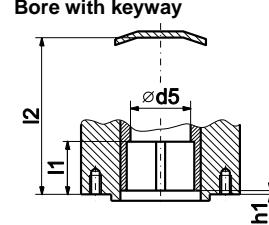
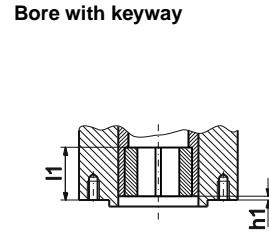
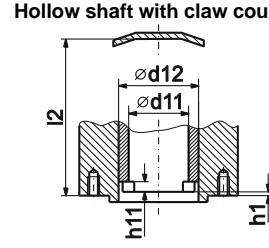
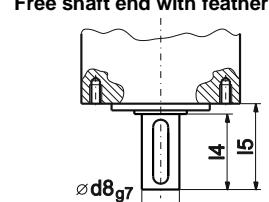
## Electric Rotary Actuators 2SA7

seven

### Flange sizes

Rotary actuator type		2SA7 . □□	10 20	11 21	31 41	32 42	33 43	53 63	54 64	85	86					
Flange size as per DIN ISO 5210 and DIN 3210		F07	F10	—	F10	—	F12	—	F14	1/2	F16	F25	—	F30	—	5
d1	90	125	125 <sup>8)</sup>		175	175	210	300	350							
d2	55	70   60	70   60		85	100	130	200   160	230   180							
d3	70	102	102		125	140	165	254	298   300							
d4	M8	M10	M10		M12	M16	M20	M16	M20							
z <sup>1)</sup>	4	4	4		4	4	4	8	8							
h	3	3	3		3	4	5	5	5							
h3	12	17	17		20	25	32	24	30							

### Output shaft dimensions

Hollow shaft with threaded bush		form A as per DIN ISO 5210 and form A as per DIN 3210	d6 max. <sup>2)</sup>	26	32	36	48	52 <sup>4)</sup>	55	75	77	80 <sup>5)</sup>
		d5	32	34	42	55	55	60	80	80	80	92
		h	38	48	48	86	62	62	77	126	126	155
		l	37	47	47	85	61	61	76	126	126	155
		l2	175	173	228	267	243	301	316	691	691	782
Bore with keyway		form B1 as per DIN ISO 5210 and form B as per DIN 3210	d7	28	42	42	50	60	80	100	100	120
		d5 <sup>3)</sup>	28	34	42	50	55   60	80	80	80	80	80
		b1	8	12	12	14	18	22	22	28	28	32
		t1	31.3	45.3	45.3	53.8	64.4	85.4	106.4	106.4	106.4	127.4
		l1	36	45	45	60	65   65	87	139	139	139	139
		h1	0	0	0	0	0	0	2	2	2	2
		l2	150	123	178	210	178   236	236	583	583	583	583
Bore with keyway		form B3 as per DIN ISO 5210 and form E as per DIN 3210; form B2/B4 (dy max.)	d10	16	20	20	25	30	40	50	50	60
		dy max.	28	30	30	50	45   45	60	80	80	80	95
		dy max. <sup>6)</sup>	—	50	—	—	60   —	70	100	100	100	—
		b4	5	6	6	8	8	12	14	14	14	18
		t3	18.3	22.8	22.8	28.3	33.3	43.3	53.8	53.8	53.8	64.4
		h1	36.5	44	44	60	65   65	80	139	139	139	139
		l1	0	0	0	0	0	0	2	2	2	2
Hollow shaft with claw coupling		form C as per DIN 3338 and form C as per DIN 3210	d12	—	42	42	—	60	80	100	100	120
		d11	—	28	28	—	38	47	64	64	64	75
		b1	—	14	14	—	20	24	30	30	30	40
		h1	—	0	0	—	0	0	2	2	2	2
		h11	—	9	9	—	10	12	11	11	11	13
		l2	—	123	178	—	178   236	236	583	583	583	583
Free shaft end with featherkey		form D as per DIN 3210	d8	—	20	20	—	30	40	50	50	60
		l4	—	50	50	—	70	90	110	110	110	120
		l5	—	55	55	—	76	97	117	117	117	127
		b3	—	6	6	—	8	12	14	14	14	18
		t2	—	22.5	22.5	—	33.0	43.0	53.5	53.5	53.5	64.0

<sup>1)</sup> number of tapped holes d4

<sup>2)</sup> max. diameter for the spindle

<sup>3)</sup> max. diameter for the spindle if spindle protection tube is necessary  
see dimension d6max. (form A)

<sup>4)</sup> for version with spindle protection tube max. 50 mm

<sup>5)</sup> max. ø77 for spindle stroke ≥ 541 mm for form A resp. ≥ 348 mm for form B1 (dimensions from connection flange)

<sup>6)</sup> with adaptation flange (height on request)

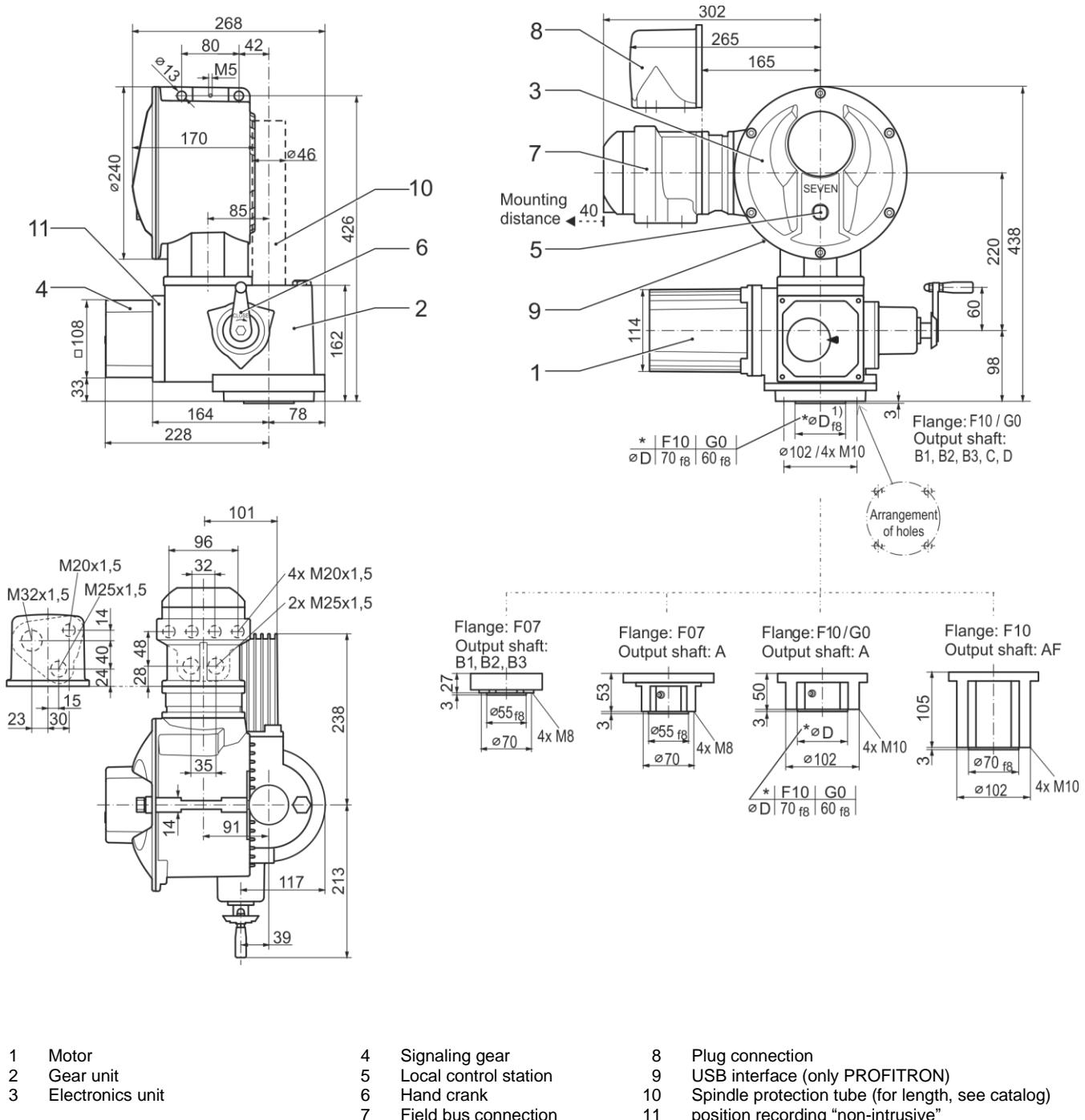
<sup>7)</sup> only applies to ON-OFF duty and inching/positioning duty,  
for modulating duty on request

<sup>8)</sup> 175 mm with output shaft form A

## Dimensional drawings

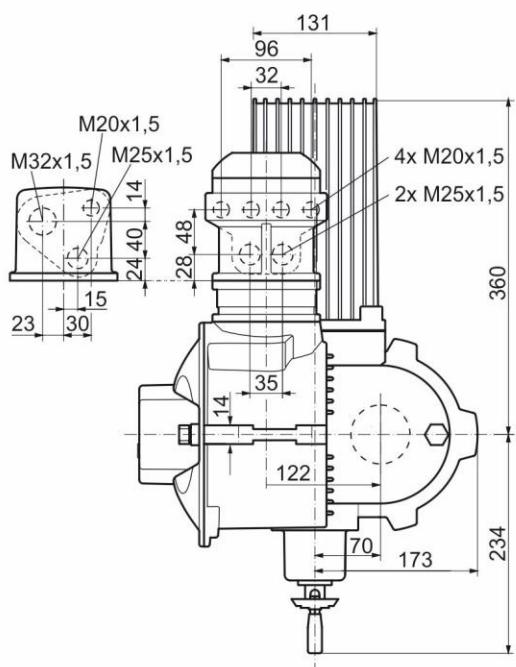
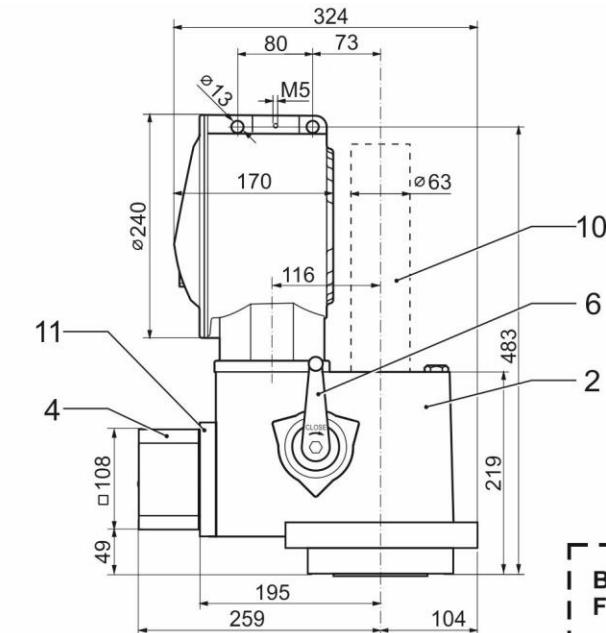
2SA701., 2SA702., 2SA731., 2SA732., 2SA751., 2SA752.

R867171

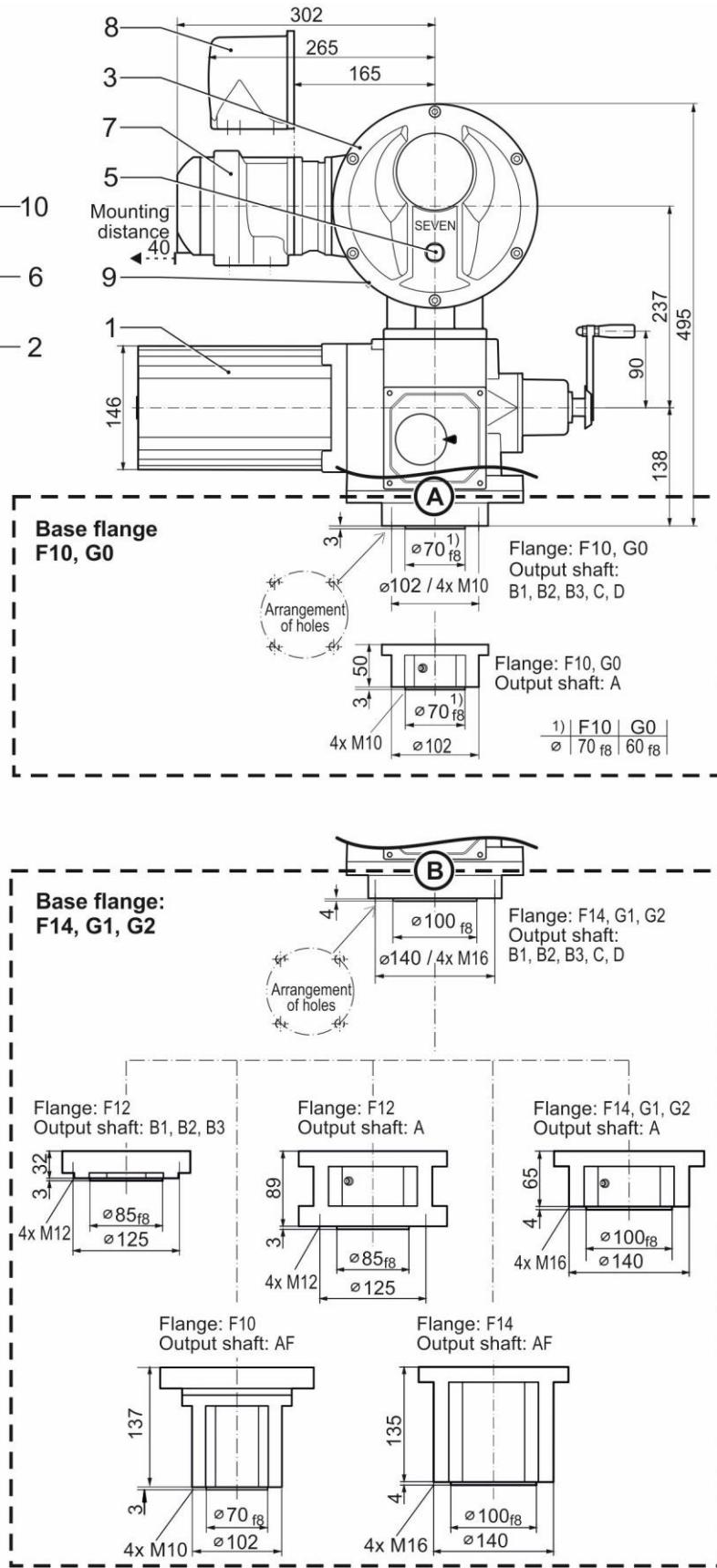


**2SA703., 2SA704.--C, 2SA733., 2SA734.--C, 2SA753., 2SA754.--C**

R867172/R867173

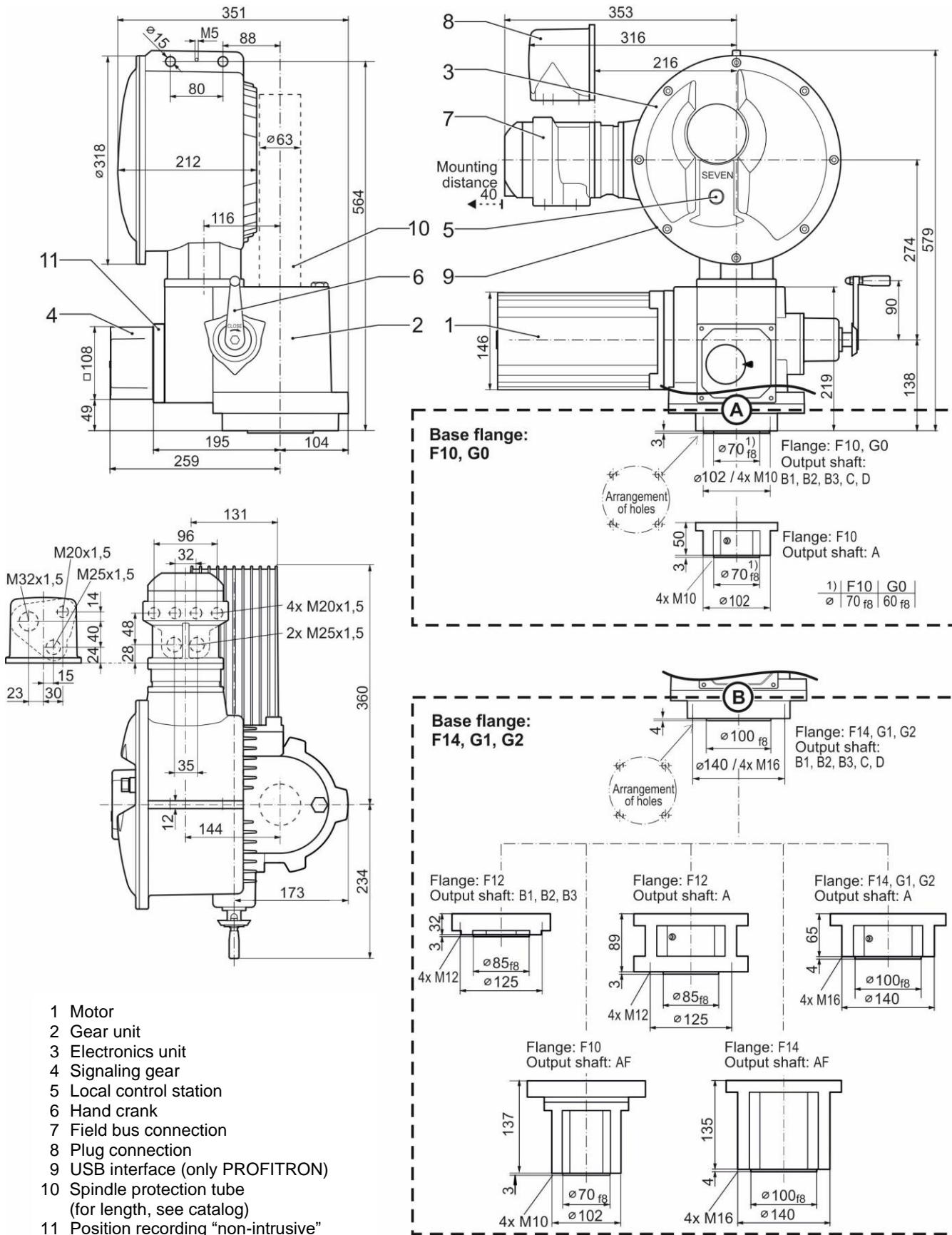


- 1 Motor
- 2 Gear unit
- 3 Electronics unit
- 4 Signaling gear
- 5 Local control station
- 6 Hand crank
- 7 Field bus connection
- 8 Plug connection
- 9 USB interface (only PROFITRON)
- 10 Spindle protection tube  
(for length, see catalog)
- 11 Position recording "non-intrusive"



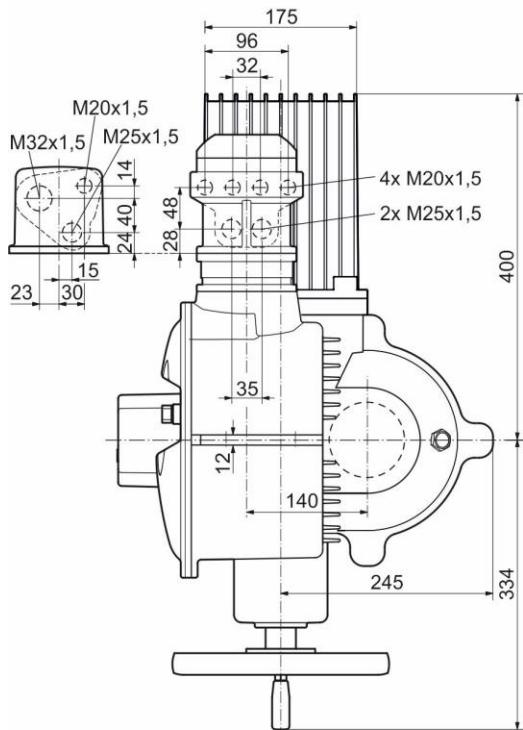
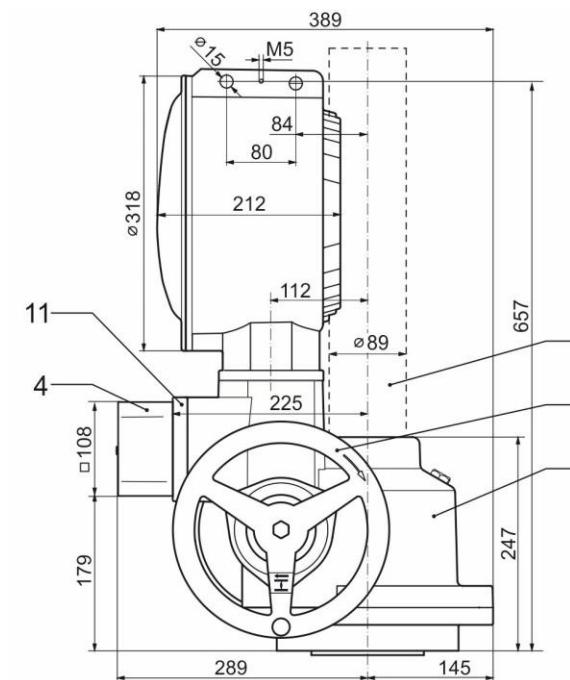
## 2SA704.-.D, 2SA704.-.E, 2SA734.-.D, 2SA734.-.E, 2SA754.-.D

R867174/R867175

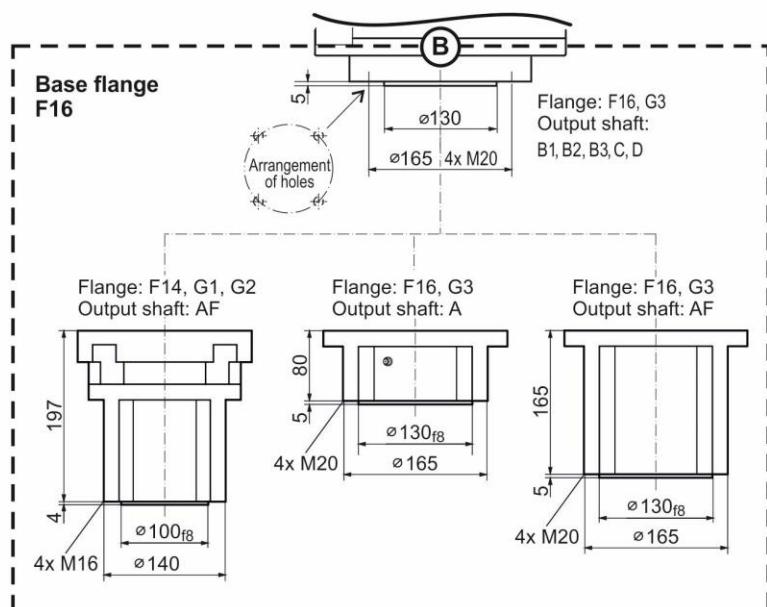
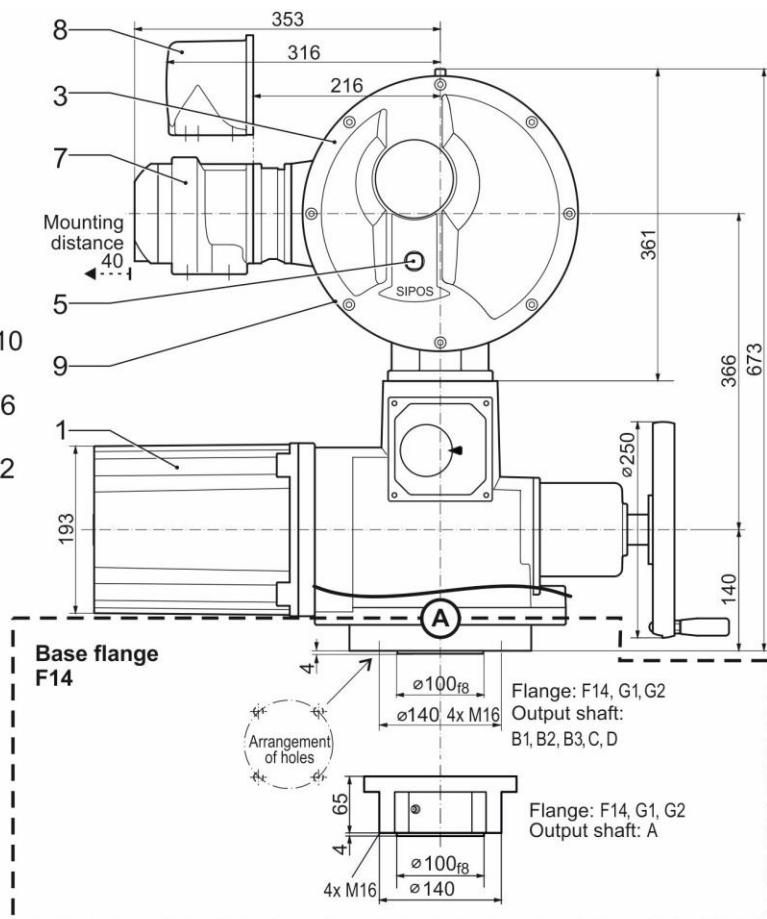


**2SA705., 2SA706., 2SA735., 2SA736., 2SA755., 2SA756.**

R867176/R867177

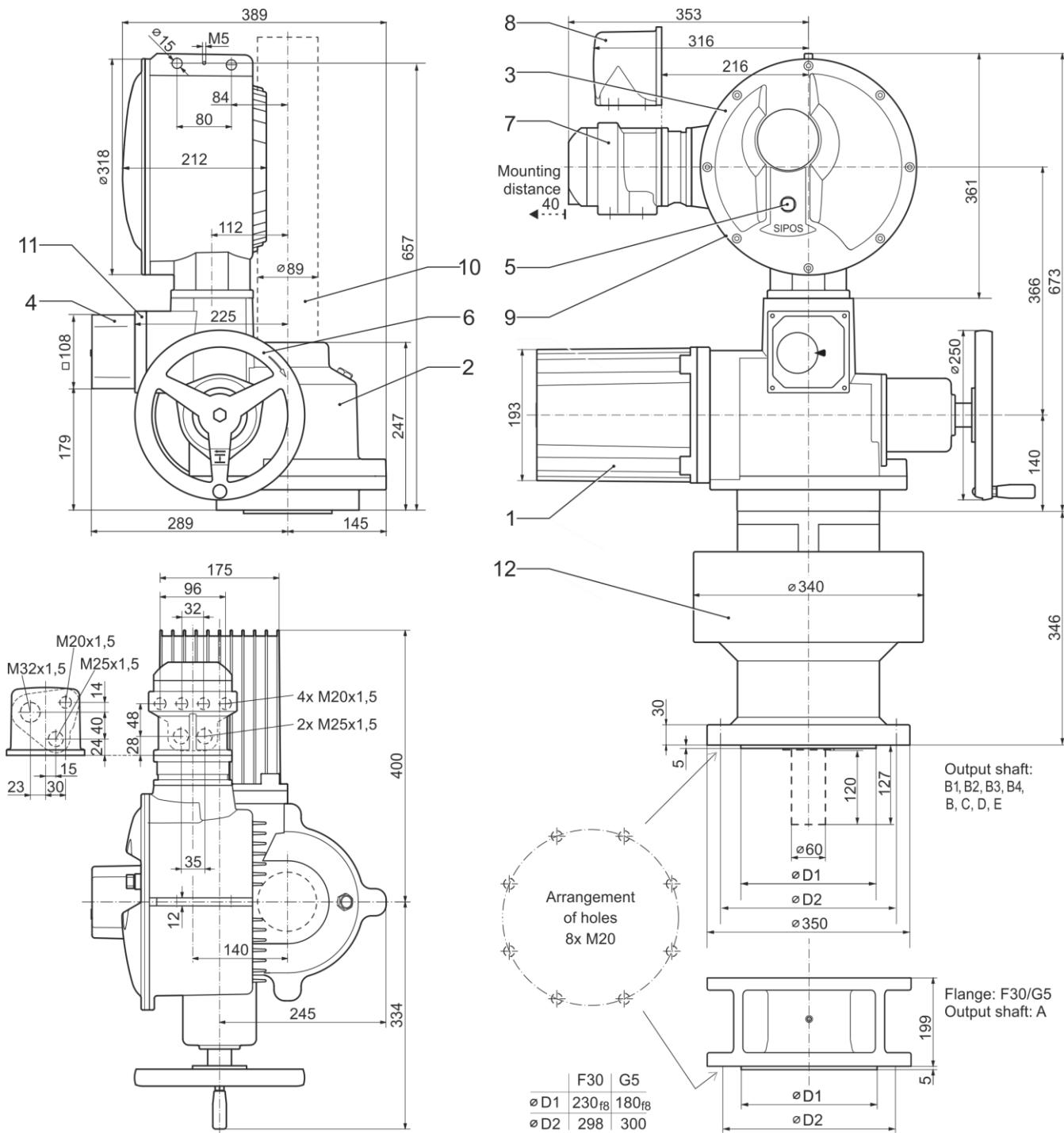


- 1 Motor
- 2 Gear unit
- 3 Electronics unit
- 4 Signaling gear
- 5 Local control station
- 6 Hand crank
- 7 Field bus connection
- 8 Plug connection
- 9 USB interface (only PROFITRON)
- 10 Spindle protection tube  
(for length, see catalog)
- 11 Position recording "non-intrusive"



### 2SA708., 2SA738., 2SA758.

R867177 mit Zusatzgetriebe



- |                    |                         |  |
|--------------------|-------------------------|--|
| 1 Motor            | 5 Local control station | 9 USB interface (only PROFITRON)                     |
| 2 Gear unit        | 6 Hand wheel            | 10 Spindle protection tube (for length, see catalog) |
| 3 Electronics unit | 7 Field bus connection  | 11 position recording "non-intrusive"                |
| 4 Signaling gear   | 8 Plug connection       | 12 Intermediate gear (supplied separately)           |

### Electrical Data

#### Power supply of ON-OFF duty (2SA70) and Inching/positioning duty (2SA73)

**Connection voltage  $U_N$  1-phase, 110 – 115 V AC<sup>6)</sup> (40 – 70 Hz)**  
 permissible voltage tolerance: -10 % / +15 %

Type 2SA70.., 2SA73..	$n_{\max.}$ [rpm]	$T_C \max.$ [Nm]	Current (110 V) <sup>2) 3)</sup> Nominal current $I_N$ <sup>4)</sup> [A]	Power $P_N$ <sup>4)</sup> [kW]	Motor power [kW]	Fuse slow blowing [A]
..... 1.	-CB	20	2.9	0.2	0.75	10
	-DB		3.1	0.2		
	-EB		4.6	0.3		
	-CB	40	3.3	0.2		
	-DB		4.8	0.3		
	-EB		7.1	0.4		
..... 3.	-CB	20	6.1	0.4		



**Connection voltage  $U_N$  1-phase, 220 – 230 V AC<sup>6)</sup> (40 – 70 Hz)**  
 permissible voltage tolerance: -10 % (-30 %<sup>1)</sup>) / +15 %

Type 2SA70.., 2SA73..	$n_{\max.}$ [rpm]	$T_C \max.$ [Nm]	Current (230 V) <sup>2) 3)</sup> Nominal current $I_N$ <sup>4)</sup> [A]	Power $P_N$ <sup>4)</sup> [kW]	Motor power [kW]	Fuse slow blowing [A]
..... 1.	-CD	40	1.7	0.2	0.75	10
	-DD		2.9	0.4		
	-ED		2.7	0.4		
	-CD	80	2.3	0.3		
	-DD		4.1	0.5		
	-ED		6.0	0.7		
..... 3.	-CD	40	4.5	0.6		



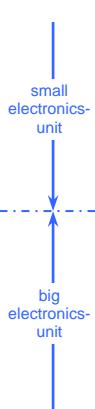
**Connection voltage  $U_N$  3-phase, 190 – 200 V AC<sup>6)</sup> (40 – 70 Hz)**  
 permissible voltage tolerance: -10 % (-30 %<sup>1)</sup>) / +15 %

Type 2SA70.., 2SA73..	$n_{\max.}$ [rpm]	$T_C \max.$ [Nm]	Current (200 V) <sup>2) 3)</sup> Nominal current $I_N$ <sup>4)</sup> [A]	Power $P_N$ <sup>4)</sup> [kW]	Motor power [kW]	Fuse slow blowing [A]
..... 1.	-CJ	40	1.2	0.2	0.75	6
	-DJ		2.1	0.4		
	-EJ		2.0	0.4		
	-CJ	80	1.7	0.3		
	-DJ		3.0	0.5		
	-EJ		4.4	0.7		
..... 3.	-CJ	40	3.3	0.6		



**Connection voltage  $U_N$  3-phase, 380 – 460 V AC<sup>6)</sup> (40 – 70 Hz)**  
 permissible voltage tolerance: -10 % (-30 %<sup>1)</sup>) / +15 %

Type 2SA70.., 2SA73..	$n_{\max.}$ [rpm]	$T_C \max.$ [Nm]	Current (400 V) <sup>2) 3)</sup> Nominal current $I_N$ <sup>4)</sup> [A]	Power $P_N$ <sup>4)</sup> [kW]	Motor power [kW]	Fuse slow blowing [A]
..... 1.	-CE	40	0.6	0.2	0.75	6
	-DE		1.0	0.4		
	-EE		1.0	0.4		
	-CE	80	1.2	0.3		
	-DE		1.4	0.5		
	-EE		1.9	0.7		
..... 3.	-CE	160	1.4	0.6	1.50	10
	-DE		2.4	1.0		
	-EE		3.4	1.6		
	-CE	250	1.9	0.9		
	-DE		4.1	1.8		
	-EE		5.9	2.8		
..... 4.	-CE	40	3.7	1.7	3.00	16
	-DE		7.5	3.7		
	-EE		7.7	3.8		
	-CE	80	5.6	2.6		
	-DE		9.4	4.7		
	-EE		5.6	2.6		
..... 6.	-AE	10	9.4	4.7	5.50	16
..... 8.	-BE	20	9.4	4.7		



<sup>1)</sup> full torque for voltage fluctuations between -30 % and +15 %  
 (in case of undervoltage from  $U_N$  -30 % to -10 %, operation may be performed at reduced output speed n)

<sup>2)</sup> lower voltage increases the current, higher voltage reduces the current

<sup>3)</sup> starting current  $I_A \leq$  nominal current  $I_N$

<sup>4)</sup> at 35 % of the maximum torque  $T_C \max.$

<sup>5)</sup> maximum current  $I_{\max.}$  is present for torque-dependent cut-off mode and for a running torque of 50 % the maximum torque  $T_C \max.$

<sup>6)</sup> Overvoltage category: Category III according to IEC 60364-4-443

### **Motor operation**

The frequency converter generates a frequency/amplitude adjustable 3-phase AC voltage for the motor from the single or 3-phase main voltage supply. Motor speed and thus actuator output speed are internally adjusted via the frequency.

### **Motor protection**

The motor has a thermistor-type motor protection against thermal damage. The winding temperature is monitored continuously by the microcontroller. The response after exceeding the permitted winding temperature is programmable on the PROFITRON. On the ECOTRON the motor protection cannot be inhibited.

### **Motor space heater**

(programmable for PROFITRON, for ECOTRON only with option „M18“)

The microcontroller continuously monitors the current winding temperature by means of a temperature sensor integrated in the motor winding. When the motor space heater is activated by the program, the motor winding is heated by a DC voltage via the frequency converter depending on the cooling characteristic of the motor winding when the motor is switched off.

### Power supply of Modulating duty (2SA75)

**Connection voltage  $U_N$  1-phase, 110 – 115 V AC<sup>6)</sup> (40 – 70 Hz)**

permissible voltage tolerance: -10 % / +15 %

Type 2SA75..	$n_{\max.}$ [rpm]	$T_C \max.$ [Nm]	Current (110 V) <sup>2) 3)</sup>		Power $P_N$ <sup>4)</sup>	Motor power [kW]	Fuse slow blowing [A]
			Nominal current $I_N$ <sup>4)</sup> [A]	$\approx I_{\max.}$ <sup>5)</sup> [A]	[kW]		
..... 1. -CB	20	20	1.9	2.6	0.1	0.75	10
..... 2. -CB		40	2.4	3.8	0.2		
..... 3. -CB		80	4.2	8.3	0.3		

**Connection voltage  $U_N$  1-phase, 220 – 230 V AC<sup>6)</sup> (40 – 70 Hz)**

permissible voltage tolerance: -10 % (-30 %<sup>1)</sup>) / +15 %

Type 2SA75..	$n_{\max.}$ [rpm]	$T_C \max.$ [Nm]	Current (230 V) <sup>2) 3)</sup>		Power $P_N$ <sup>4)</sup>	Motor power [kW]	Fuse slow blowing [A]
			Nominal current $I_N$ <sup>4)</sup> [A]	$\approx I_{\max.}$ <sup>5)</sup> [A]	[kW]		
..... 1. -CD	40	20	1.3	1.9	0.2	0.75	10
..... 2. -DD			2.6	3.8	0.4		
..... 2. -CD			1.7	2.8	0.2		
..... 3. -DD		40	3.4	5.6	0.4		
..... 3. -CD	40	80	3.4	6.2	0.4		

**Connection voltage  $U_N$  3-phase, 190 – 200 V AC<sup>6)</sup> (40 – 70 Hz)**

permissible voltage tolerance: -10 % (-30 %<sup>1)</sup>) / +15 %

Type 2SA75..	$n_{\max.}$ [rpm]	$T_C \max.$ [Nm]	Current (200 V) <sup>2) 3)</sup>		Power $P_N$ <sup>4)</sup>	Motor power [kW]	Fuse slow blowing [A]
			Nominal current $I_N$ <sup>4)</sup> [A]	$\approx I_{\max.}$ <sup>5)</sup> [A]	[kW]		
..... 1. -CJ	40	20	0.9	1.4	0.2	0.75	6
..... 2. -CJ			1.2	2.0	0.2		
..... 3. -CJ			2.5	4.5	0.4		

**Connection voltage  $U_N$  3-phase, 380 – 460 V AC<sup>6)</sup> (40 – 70 Hz)**

permissible voltage tolerance: -10 % (-30 %<sup>1)</sup>) / +15 %

Type 2SA75..	$n_{\max.}$ [rpm]	$T_C \max.$ [Nm]	Current (400 V) <sup>2) 3)</sup>		Power $P_N$ <sup>4)</sup>	Motor power [kW]	Fuse slow blowing [A]
			Nominal current $I_N$ <sup>4)</sup> [A]	$\approx I_{\max.}$ <sup>5)</sup> [A]	[kW]		
..... 1. -CE	40	20	0.5	0.7	0.2	0.75	6
..... 1. -DE			1.0	1.4	0.4		
..... 2. -CE			0.9	1.7	0.2		
..... 2. -DE		40	1.8	3.4	0.4		
..... 3. -CE		80	1.2	1.8	0.5	1.50	10
..... 3. -DE			2.4	3.6	1.0		
..... 4. -CE			1.6	3.0	0.7		
..... 4. -DE	40	175	3.2	6.0	1.4	3.00	16
..... 5. -CE	40		3.0	5.0	1.3		
..... 5. -DE	80		6.0	10.0	2.6		
..... 6. -CE	40	350	5.1	9.5	2.3	5.50	16
..... 6. -DE	80	5.1	9.5	2.3	5.50	16	
..... 8. -AE	10	700	5.1	9.5	2.3		
..... 8. -AE	10	2800	5.1	9.5	2.3	5.50	16

### Motor operation

The frequency converter generates a frequency/amplitude adjustable 3-phase AC voltage for the motor from the single or 3-phase main voltage supply. Motor speed and thus actuator output speed are internally adjusted via the frequency.

### Motor protection

The motor has a thermistor-type motor protection against thermal damage. The winding temperature is monitored continuously by the microcontroller. The response after exceeding the permitted winding temperature is programmable on the PROFITRON. On the ECOTRON the motor protection cannot be inhibited.

### Motor space heater

(programmable for PROFITRON, for ECOTRON only with option „M18“)

The microcontroller continuously monitors the current winding temperature by means of a temperature sensor integrated in the motor winding. When the motor space heater is activated by the program, the motor winding is heated by a DC voltage via the frequency converter depending on the cooling characteristic of the motor winding when the motor is switched off.

<sup>1)</sup> full torque for voltage fluctuations between -30 % and +15 %  
(in case of undervoltage from  $U_N$  -30 % to -10 %, operation may be performed at reduced output speed n)

<sup>2)</sup> lower voltage increases the current, higher voltage reduces the current

<sup>3)</sup> starting current  $I_A \leq$  nominal current  $I_N$

<sup>4)</sup> at 35 % of the maximum torque  $T_C \max.$

<sup>5)</sup> maximum current  $I_{\max.}$  is present for torque-dependent cut-off mode and for a running torque of 70 % the maximum torque  $T_C \max.$

<sup>6)</sup> Overvoltage category: Category III according to IEC 60364-4-443

## Control and feedback signals



ECOTRON: 3 binary inputs 24/48 V DC (OPEN, CLOSE, STOP), 5 binary outputs 24/48 V DC  
1 analog output 4 – 20 mA (actual position value), segment display (symbols for parameterization/commissioning)

PROFITRON: 5 binary inputs 24/48 V DC (OPEN, CLOSE, STOP, EMERGENCY, Mode), 8 binary outputs 24/48 V DC,  
1 analog output 0/4 – 20 mA (actual position value), multicolor graphic display with status indication

electronics unit without hardware extension

relay board with 5 outputs for ECOTRON, 8 for PROFITRON

PROFIBUS DP 1 channel - with V1 and V2 services

MODBUS RTU 1 channel

MODBUS RTU 2 channel

HART (only PROFITRON)

HART + relay board (only PROFITRON)

MODBUS TCP/IP 1 channel

prepared for remote control unit RCU

(only PROFITRON) + MODBUS RTU 1-channel

PROFINET incl. acyclic services (only PROFITRON)

PROFINET with system redundancy S2 and acyclic services (only PROFITRON)

standard software-function

positioner

process controller

travel dependent output speed adjustment

positioner + travel dependent output speed adjustment

external analog output speed setpoint

positioner + external analog output speed setpoint

positioner with split-range functionality

travel dependent freely adjustable positioning times

positioner + travel dependent freely adjustable positioning times

process controller + travel dependent freely adjustable positioning times

	ECOTRON 2SA7.	PROFITRON 2SA70	2SA73	2SA75
X	X	X	X	X
		X	X	X
			X	X
			X	X
			X	X
			X	X
			X	X
			X	X
			X	X
			X	X
			X	X
			X	X
			X	X

## Signal assignment for the binary outputs

- for ECOTRON (also refer to wiring diagrams, signals 1-5):

Output	Signaling set (set 1 to 4 can be adjusted locally in the segment display of the actuator)			
	default setting	optional sets		
	Set 1	Set 2	Set 3	Set 4
1	Travel end OPEN NO	End position OPEN NO	End position OPEN NO	Travel end OPEN NO
2	Travel end CLOSE NO	End position CLOSED NO	End position CLOSED NO	Travel end CLOSE NO
3	Torque CL/OP reached NC	Blinker NO	Fault NC	Ready+Remote NO
4	Ready+Remote NO	Ready+Remote NO	Local NO	Torque OPEN reached NC
5	Warning motor temp. NC	Warning motor temp. NC	Warning motor temp. NC	Torque CLOSE reached NC

NO = active high, NC = active low

- for PROFITRON (also refer to wiring diagrams, signals 1-8):

Output	default setting	with option „Y12“	with option „Y15“	with option „Y90“
1	End position OPEN NO	Intermediate contact OP NO	Intermediate contact OP NO	Intermediate contact OP NO
2	End position CLOSED NO	Intermediate contact CL NO	Intermediate contact CL NO	Intermediate contact CL NO
3	Torque OPEN reached NC	Ready+Remote NO	Torque OPEN reached NO	Torque OPEN reached NO
4	Torque CLOSE reached NC	Torque OPEN reached NC	Torque CLOSE reached NO	Torque CLOSE reached NO
5	Fault NC	Torque CLOSE reached NC	Ready+Remote NO	Local NC
6	Local NO	Local NO	Local NO	Fault NC
7	Blinker NO	Warning motor temp. NO	Blinker NO	Not used
8	Warning motor temp. NC	Fault external voltage NC	Warning motor temp. NO	Not used

NO = active high, NC = active low

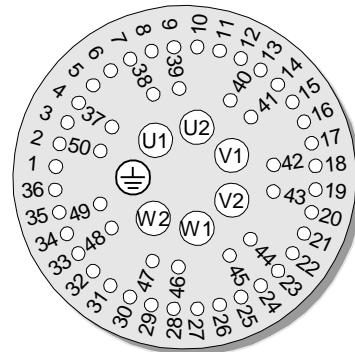
Optional free assignment of outputs,  
NO/NC optional  
(can be changed locally)

End position CLOSED
End position OPEN
Torque CLOSE reached
Torque OPEN reached
Torque CL/OP reached
Fault
Blinker
Ready
Ready+Remote
Local
Intermediate contact CL
Intermediate contact OP
Fault motor temperature
Warning motor temp.
Fault external voltage
Maintenance
Run indication CLOSE
Run indication OPEN
Run indication OPEN/CLOSE
Blinker+ End position CLOSED
Blinker+ End position OPEN
Travel end CLOSE
Travel end OPEN

### Connections at round plug (plug assignment)

Inputs and outputs		ECOTRON 2SA7.	PROFITRON 2SA70	2SA73 2SA75
Binary	Inputs	2, 3, 4 and 5	2, 3, 4, 5, 9, 10 and 27	2SA73 2SA75
	Outputs	16 <sup>1)</sup> , 17, 19, 20, 21, 22 and 23	16 <sup>1)</sup> , 17, 19, 20, 21, 22, 23, 24, 25 and 26	
Analog	Inputs	---	11 and 12 (option)	11 and 12 (option), 13 and 14 (option)
	Outputs	7 and 8	7 and 8, 48, 49 and 50 (option)	
Relay outputs (option)		28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 40, 41, 42, 43 and 44	28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 40, 41, 42, 43, 44, 45, 46 and 47	
Relay outputs (option + C54)		28, 29, 30, 31, 32, 33, 34, 35, 37, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49 and 50	28, 29, 30, 31, 32, 33, 34, 35, 37, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49 and 50	
PROFIBUS/ MODBUS (option)	1 channel	28, 29, 30 and 31	28, 29, 30 and 31	
	2 channel	28, 29, 30, 31, 32, 33, 34 and 35	28, 29, 30, 31, 32, 33, 34 and 35	
PROFIBUS/ MODBUS (option + C55)	1 channel	19, 20, 21 and 22	19, 20, 21 and 22	
	2 channel	19, 20, 21, 22, 23, 24, 25 and 26	19, 20, 21, 22, 23, 24, 25 and 26	
PROFINET (option)		---	13, 14, 48 and 50	
Voltage output „P24 int.“ resp. „P24 gal.“		1, 6, 15 <sup>1)</sup> and 18 <sup>1)</sup>	1, 6, 15 <sup>1)</sup> and 18 <sup>1)</sup>	
Auxiliary 24 VDC supply for electronics unit „P24 ext.“		38 and 39	38 and 39	

XK



Plug assignment for the  
external round plug connection

### Position recording

If the actuator is equipped with a signaling gear, position recording is performed via precision film potentiometer with microcontroller assessment.

The signaling gear reduces the revolutions required for travel to the permissible rotation angle of the precision film potentiometer.

For "non-intrusive – commissioning without opening the actuator" (without signaling gear), the position is recorded with utmost precision and is transmitted to the microcontroller.

### Positioner

Defining an analog position setpoint (0/4–20 mA) for the positioner results in precise control of the position corresponding to this value.

The positioner works adaptively. This leads to a continuous automatic adaptation of the threshold value to the controlled system:

- hysteresis 0.4 % of the travel
- response threshold (dead band) adjustable, default setting: 0.2 to 2.5 % of the travel
- upward adaptation response threshold is enlarged by 0.1 %, if an OPEN ==> CLOSE ==> OPEN command sequence occurs within 6 seconds
- downward adaptation response threshold is reduced by 0.01 %, when no control has taken place within 10.8 seconds

<sup>1)</sup> Not applicable for version with relay board.

## Power and consumption values

### Binary inputs and outputs

**binary inputs** Control inputs OPEN, CLOSED, STOP, Emergency and Mode (Emergency and Mode only on PROFITRON)

**binary outputs** 8 binary electronic outputs for signals on PROFITRON, 5 outputs on ECOTRON

All binary inputs and outputs are galvanically isolated and potential-free.

Exception: For ECOTRON with relay board, the binary outputs refer to the potential of the electronics.

Binary outputs are resistant to both short-circuits and overloads.

	Input		Output	
	24 V DC	48 VDC	24 V DC	48 VDC
Level	L - potential (low -) [V DC]	0 – 4	0 – 2.5	0 – 2.5
	H - potential (high -) [V DC]	16 – 30	16 – 60	18 – 30
Current (per input or output)	[mA]	4 – 7	7 – 15	max. 100
Resistance	[Ω]	4000	4000	max. 10

### Analog inputs and outputs

**analog inputs** - AI1: 0/4-20 mA

- AI2: 0/4-20 mA (add-on PCB)

**analog outputs** - AO1: Position actual value (0/4-20 mA) active, i.e. with internal power supply 24 V DC

- AO2: Position actual value (0/4-20 mA) passive, i.e. with external power supply 24 V DC (add-on PCB)

Analog inputs and outputs are galvanically isolated (only PROFITRON).

AI2 and AO2 are located on a common add-on PCB and have the same potential.

For existing add-on PCB (AI2+AO2), assignment of AI1 and AI2 analog inputs as well as AO1 and AO2 analog outputs is freely programmable. Analog outputs are resistant to both short-circuits and overloads.

	Input		Output	
Current	[mA]	0 – 20 (max. 24)	0 – 20 (max. 21)	
Resistance / load	[Ω]	45		max. 600

Ranges 0-20 mA or 4-20 mA with rising or falling level can be adjusted for PROFITRON; for ECOTRON, the curve is rising (4-20 mA).

### Relay outputs

Relay outputs are galvanically isolated.

	DC for resistive load			AC
max. switching capacity	180 W (for 30 V)			1500 VA
max. switching voltage	30 V	50 V	300 V	250 V
max. switching current	6 A	0.6 A	0.15 A	6 A

The PROFITRON relay board has 8 relay outputs (5 NO, 1 NC and 2 change-over contacts), the 5 relay outputs of the ECOTRON are all designed as change-over contacts.

### Internal 24 V power supply

Only for PROFITRON are the binary inputs and outputs galvanically isolated from the electronics in case of internal 24 V DC power supply via „P24 gal.“.

### External 24 V power supply

During power failure, both actual position value and device state are still sent via the external 24 V DC supply „P24 ext.“ to the binary signal outputs (signals 1-8) and communication via COM-SIPOS or fieldbus is available. During mains operation, own supply via actuator.

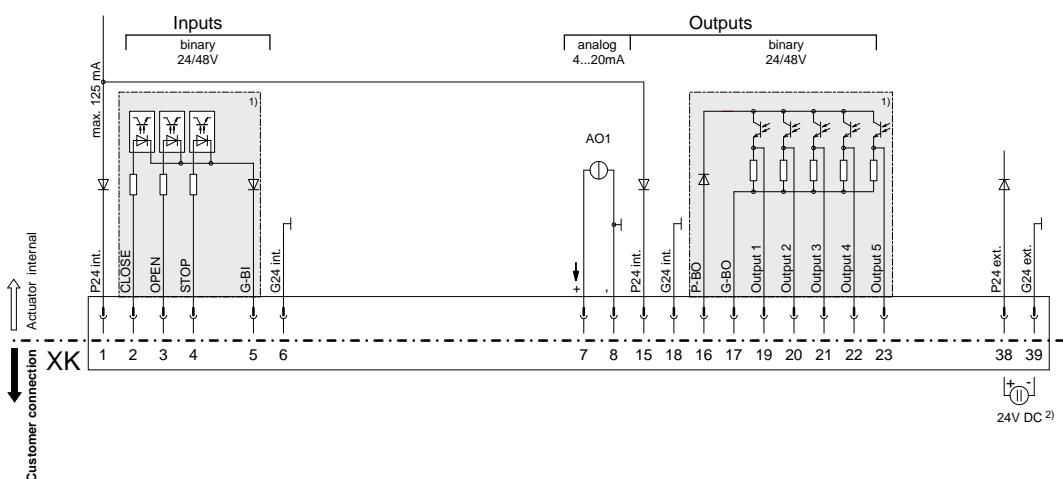
External 24 V power supply	Input P24 ext.	Current consumption	
		min. 20 V (21 V with relay board)	typ. 24 V
Σ current standard version	[mA]	155	140
additional load:			
with PROFIBUS DP / Modbus RTU, 1 channel	[mA]	+20	+20
with PROFIBUS DP / Modbus RTU, 2 channel	[mA]	+40	+40
with PROFINET (1 Port / 2 Port)	[mA]	+70 / +120	+70 / +120
with Modbus TCP/IP	[mA]	+50	+50
with HART	[mA]	+18	+21
with relay board	[mA]	+50	+60
with „non-intrusive“	[mA]	+10	+10
with actual position value	[mA]	+20	+20
with Bluetooth	[mA]	+10	+10

## Wiring diagrams

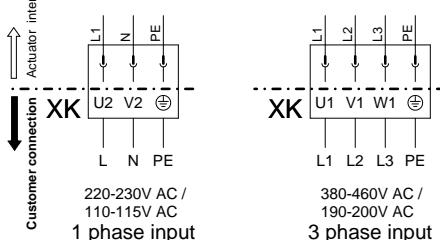
### Wiring diagram ECOTRON

Y070.243

#### Connection control and feedback signals



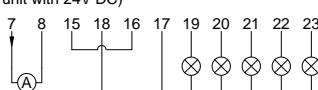
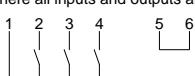
#### Connection power supply



#### Customer connection - wiring examples:

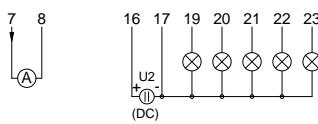
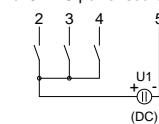
##### Wiring example I: „internal 24V DC supply“

(here all inputs and outputs are supplied internally from the electronics unit with 24V DC)

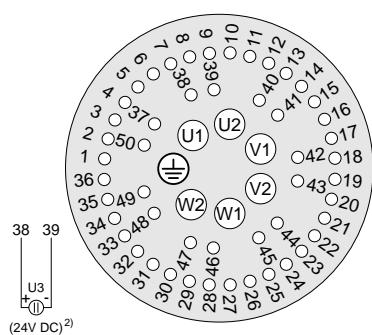


##### Wiring example II: „external 24/48V DC supplies“

(in this example all galvanically isolated areas are supplied externally from different 24/48V DC power sources)



#### Plug assignment XK



1) galvanically isolated areas: can be supplied from different sources with 24/48V DC

2) auxiliary 24V DC supply for electronics unit (if required)

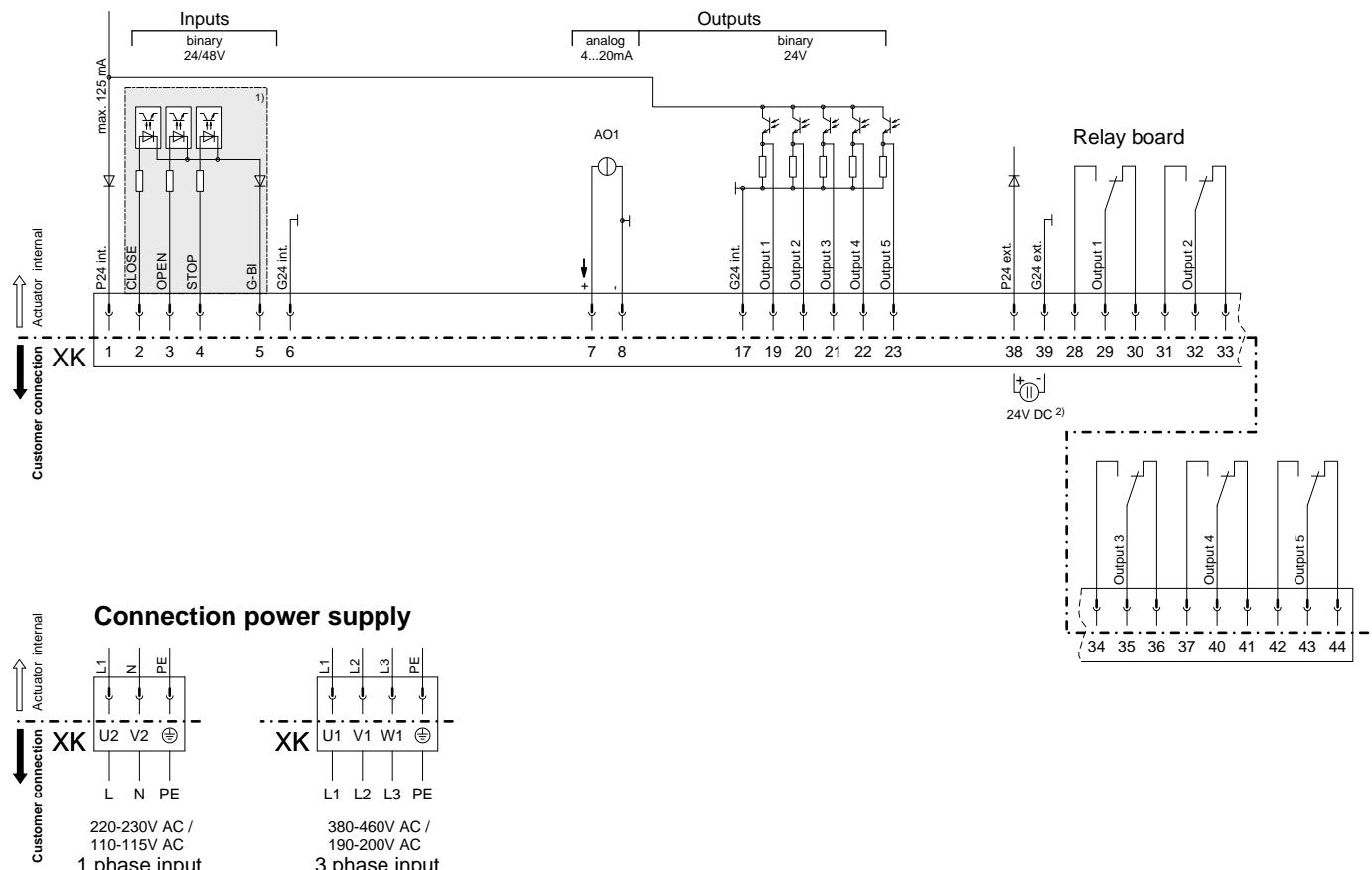
(In case of mains failure both actual position value and actuator status (binary outputs 1-5) will continue to be signalled.  
Communication via COM-SIPOS – changes of parameters resp. download of actuator data – is possible.)

Wire cross-section max.:  
 - 6 mm<sup>2</sup> Power supply  
 - 2.5 mm<sup>2</sup> Control and feedback signals  
 The control/feedback wire **must** be shielded!

## Wiring diagram ECOTRON with relay board

Y070.244

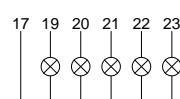
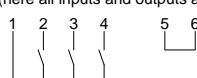
## Connection control and feedback signals



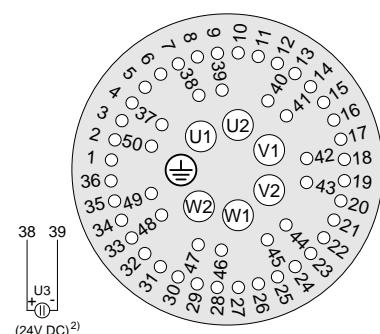
## Customer connection - wiring examples:

## Wiring example I: „internal 24V DC supply“

(here all inputs and outputs are supplied internally from the electronics unit with 24V DC)

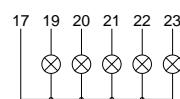
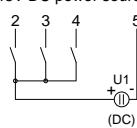


## Plug assignment XK



## Wiring example II: „external 24/48V DC supplies“

(in this example the galvanically isolated area is supplied externally from a different 24/48V DC power source)



1) galvanically isolated area: can be supplied from different source with 24/48V DC

2) auxiliary 24V DC supply for electronics unit (if required)

(In case of mains failure both actual position value and actuator status (binary outputs 1-5) will continued to be signalled.  
Communication via COM-SIPOS – changes of parameters resp. download of actuator data – is possible.)

Wire cross-section max.:
 

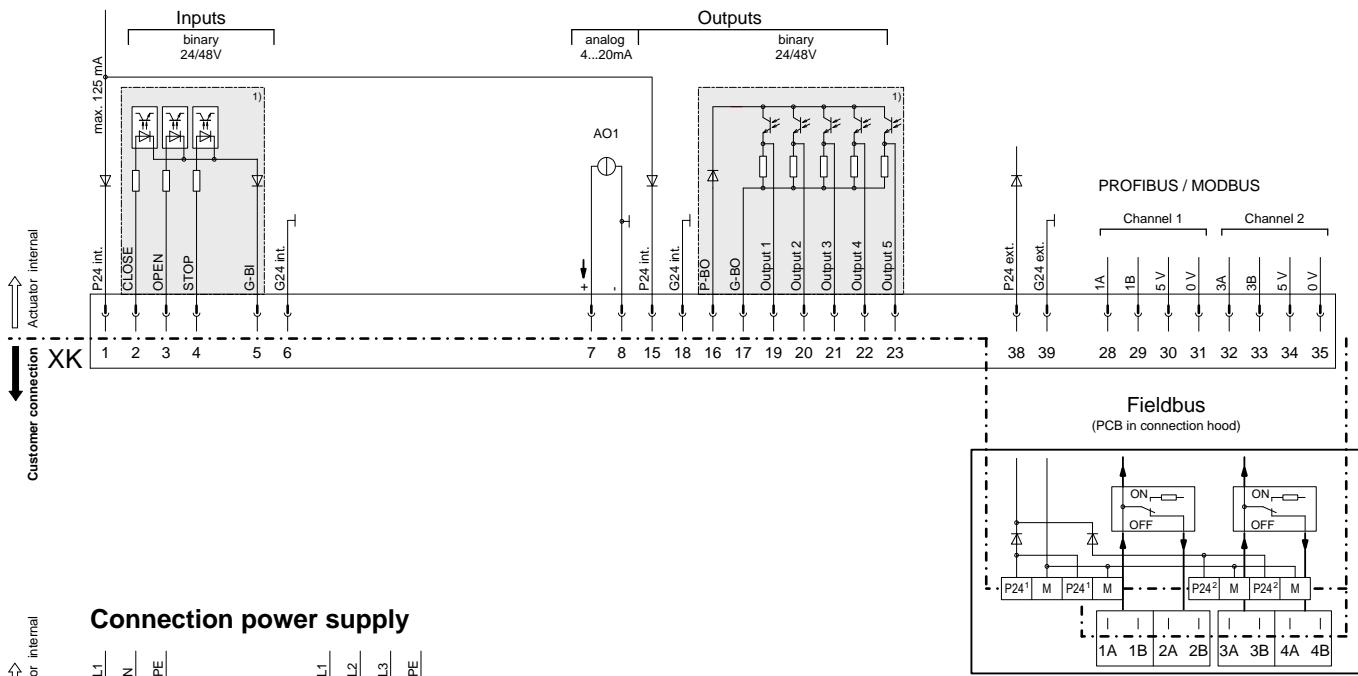
- 6 mm<sup>2</sup> Power supply
- 2.5 mm<sup>2</sup> Control and feedback signals

 The control/feedback wire must be shielded!

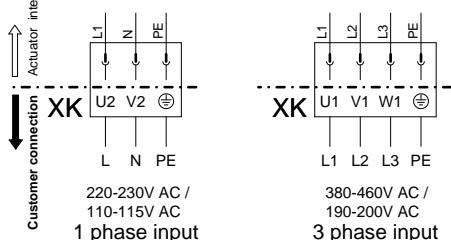
## Wiring diagram ECOTRON with Fieldbus

Y070.245

### Connection control and feedback signals

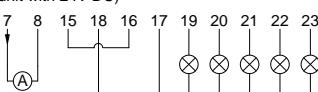
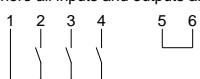


### Connection power supply

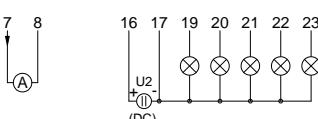
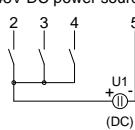


### Customer connection - wiring examples:

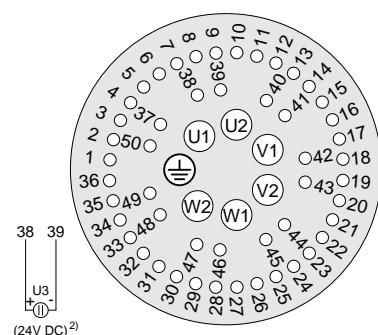
Wiring example I: „internal 24V DC supply“  
(here all inputs and outputs are supplied internally from the electronics unit with 24V DC)



Wiring example II: „external 24/48V DC supplies“  
(in this example all galvanically isolated areas are supplied externally from different 24/48V DC power sources)



### Plug assignment XK



1) galvanically isolated areas: can be supplied from different sources with 24/48V DC

2) auxiliary 24V DC supply for electronics unit (if required)

(In case of mains failure both actual position value and actuator status (binary outputs 1-5) will continue to be signalled.  
Communication via COM-SIPOS or fieldbus – changes of parameters resp. download of actuator data – is possible.)

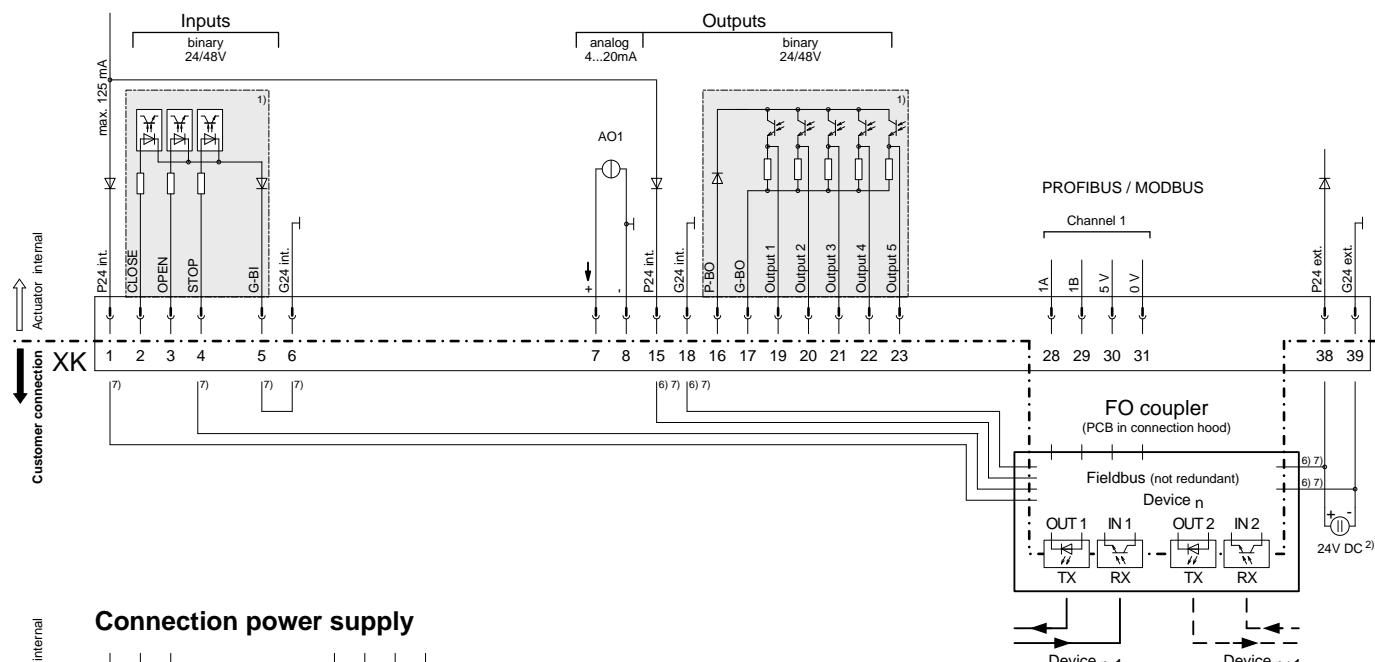
5) up to 4 connectors P24 and M on the fieldbus connection PCB

Wire cross-section max.:-  
- 6 mm<sup>2</sup> Power supply  
- 2.5 mm<sup>2</sup> Control and feedback signals  
The control/feedback wire must be shielded!

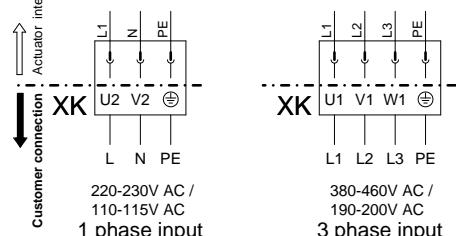
## Wiring diagram ECOTRON with Fieldbus and FO

Y070.360

## Connection control and feedback signals

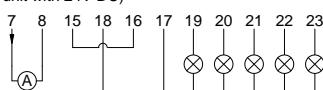
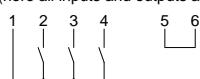


## Connection power supply

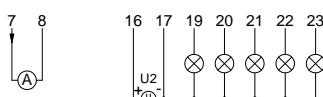
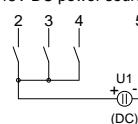


## Customer connection - wiring examples:

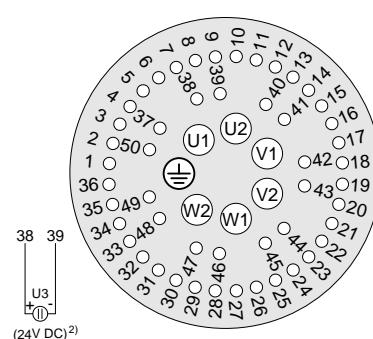
Wiring example I: „internal 24V DC supply“  
(here all inputs and outputs are supplied internally from the electronics unit with 24V DC)



Wiring example II: „external 24/48V DC supplies“  
(in this example all galvanically isolated areas are supplied externally from different 24/48V DC power sources)



## Plug assignment XK



1) galvanically isolated areas: can be supplied from different sources with 24/48V DC

2) auxiliary 24V DC supply for electronics unit (if required)

(In case of mains failure both actual position value and actuator status (binary outputs 1-5) will continue to be signalled.  
Communication via COM-SIPOS or fieldbus – changes of parameters resp. download of actuator data – is possible.)

6) factory-wired connection cable only with option „C17“ (FO in linear or star topology)

7) factory-wired connection cable only with option „C18“ (PROFIBUS, FO in ring topology)

Wire cross-section max.:

- 6 mm<sup>2</sup> Power supply

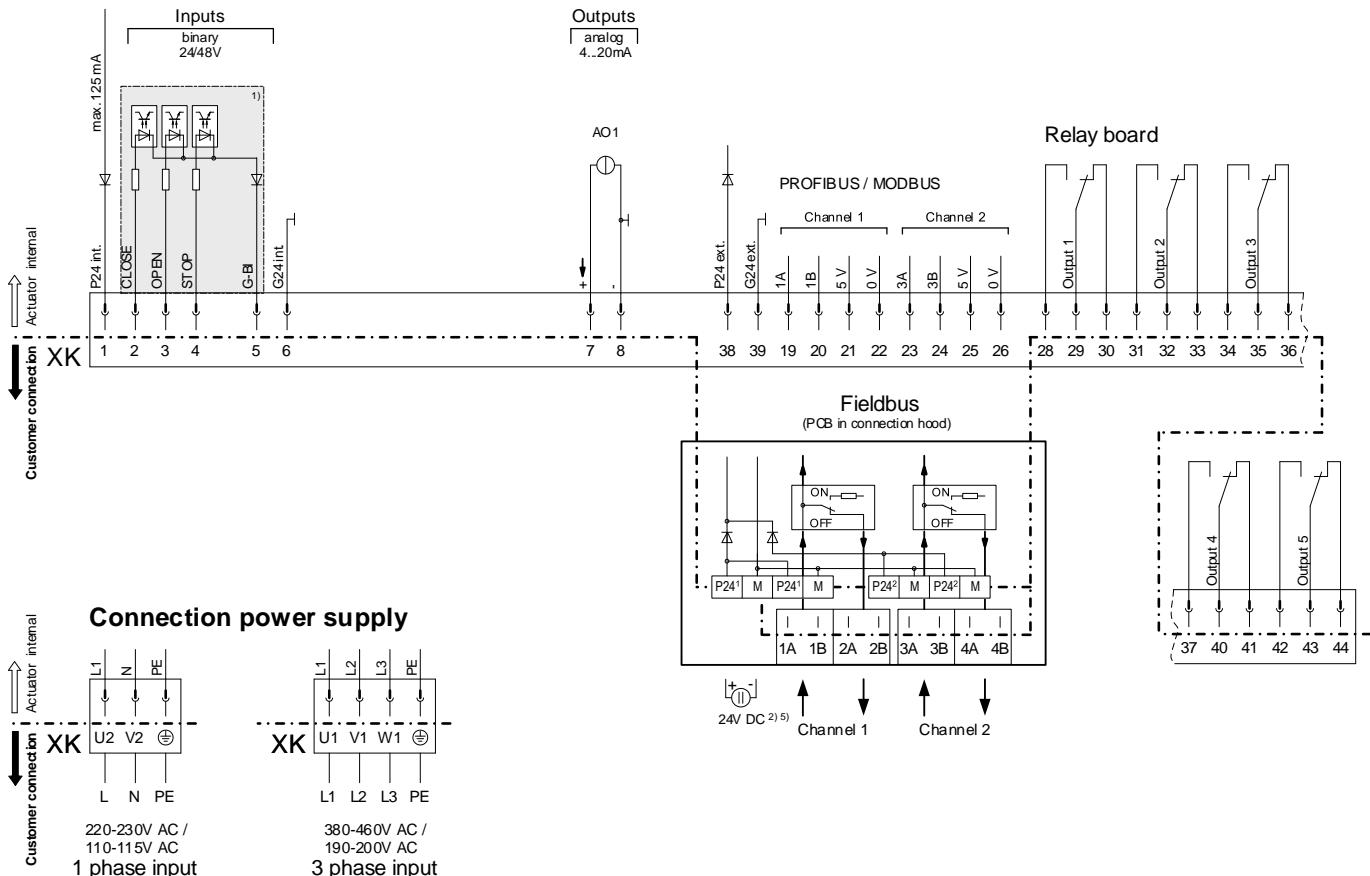
- 2.5 mm<sup>2</sup> Control and feedback signals

The control/feedback wire must be shielded!

## Wiring diagram ECOTRON with Fieldbus and relay board

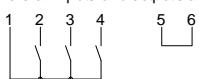
Y070.468

### Connection control and feedback signals

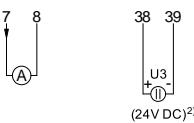
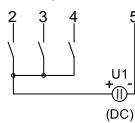


### Customer connection - wiring examples:

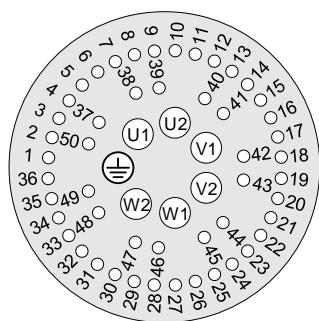
Wiring example I: „internal 24V DC supply“  
(here all inputs and outputs are supplied internally from the electronics unit with 24V DC)



Wiring example II: „external 24/48V DC supplies“  
(in this example the galvanically isolated area is supplied externally from a different 24/48V DC power source)



### Plug assignment XK



1) galvanically isolated area: can be supplied from different source with 24/48V DC

2) auxiliary 24V DC supply for electronics unit (if required)

(In case of mains failure both actual position value and actuator status (binary outputs 1-5) will continue to be signalled.  
Communication via COM-SIPOS or fieldbus – changes of parameters resp. download of actuator data – is possible.)

5) up to 4 connectors P24 and M on the fieldbus connection PCB

Wire cross-section max.:

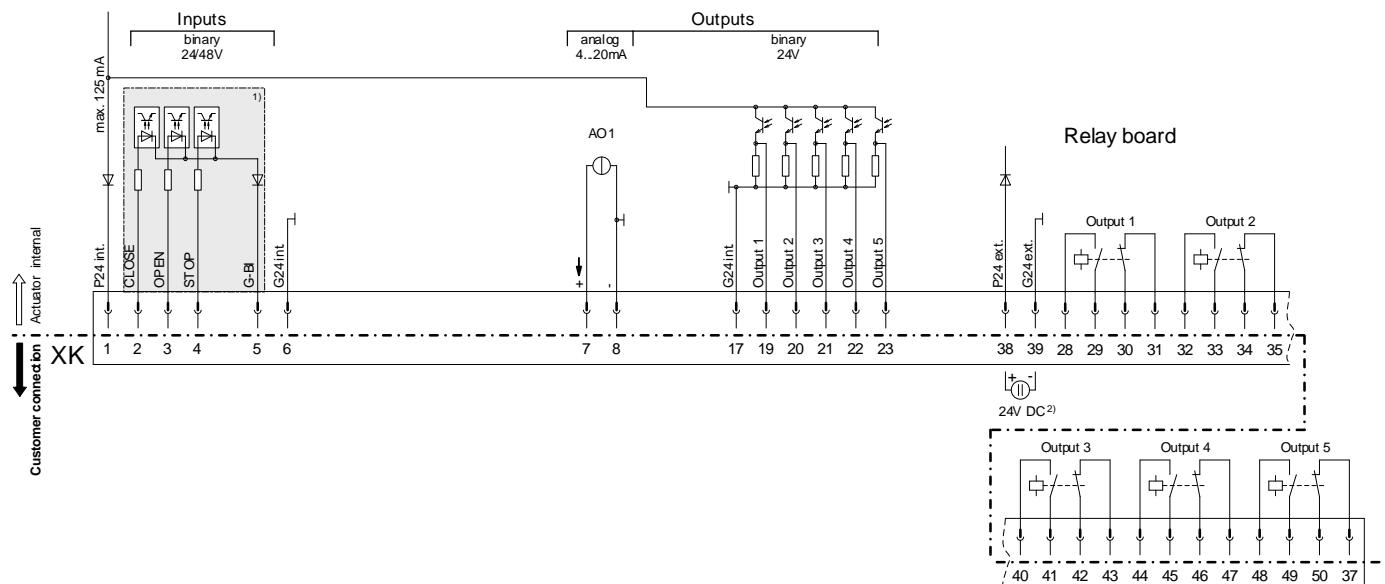
- 6 mm<sup>2</sup> Power supply
- 2.5 mm<sup>2</sup> Control and feedback signals

The control/feedback wire must be shielded!

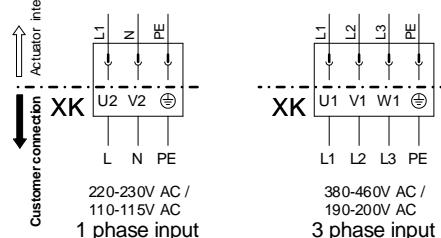
## Wiring diagram ECOTRON with SIPOS 5 compatible relay board "C54"

Y070.533

## Connection control and feedback signals



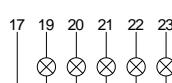
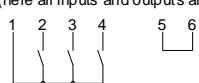
## Connection power supply



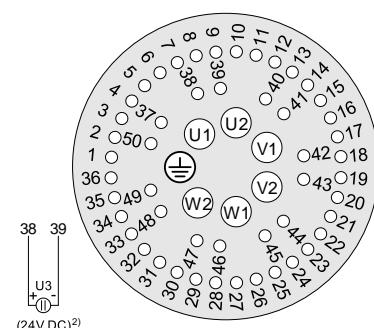
## Customer connection - wiring examples:

## Wiring example I: „internal 24V DC supply“

(here all inputs and outputs are supplied internally from the electronics unit with 24V DC)



## Plug assignment XK



1) galvanically isolated area: can be supplied from different source with 24/48V DC

2) auxiliary 24V DC supply for electronics unit (if required)  
(In case of mains failure both actual position value and actuator status (binary outputs 1-5) will continued to be signalled.  
Communication via COM-SIPOS – changes of parameters resp. download of actuator data – is possible.)

Wire cross-section max.:
 

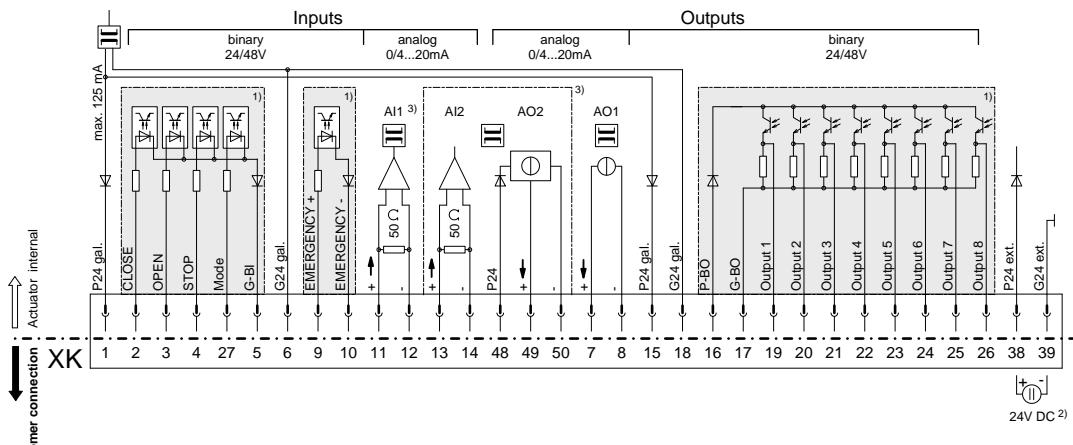
- 6 mm<sup>2</sup> Power supply
- 2.5 mm<sup>2</sup> Control and feedback signals

 The control/feedback wire **must** be shielded!

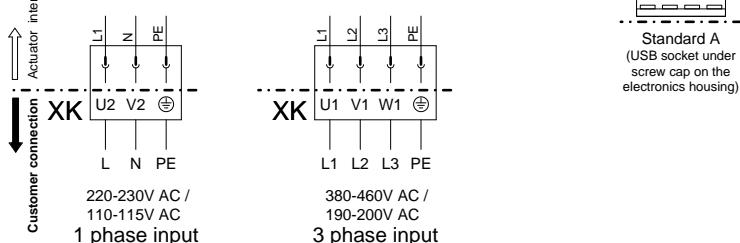
### Wiring diagram PROFITRON

Y070.247

#### Connection control and feedback signals

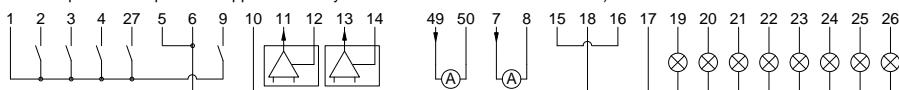


#### Connection power supply

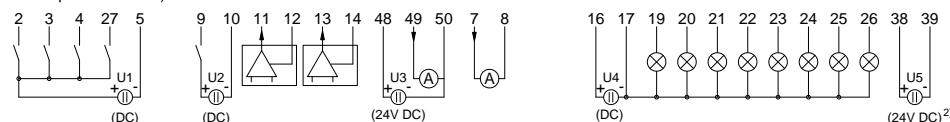


#### Customer connection - wiring examples:

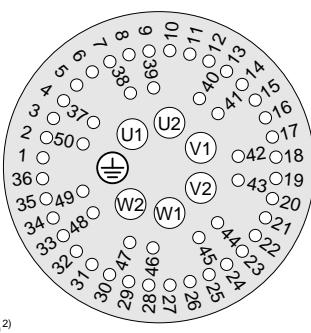
Wiring example I: „internal 24V DC supply“  
(here all inputs and outputs are supplied internally from the electronics unit with 24V DC)



Wiring example II: „external 24/48V DC supplies“  
(in this example all galvanically isolated areas are supplied externally from different 24/48V DC power sources)



#### Plug assignment XK



1) galvanically isolated areas: can be supplied from different sources with 24/48V DC

2) auxiliary 24V DC supply for electronics unit (if required)

(In case of mains failure both actual position value and actuator status (binary outputs 1-8) will continue to be signalled.  
Communication via COM-SIPOS – changes of parameters resp. download of actuator data – is possible.)

3) option

Wire cross-section max.:

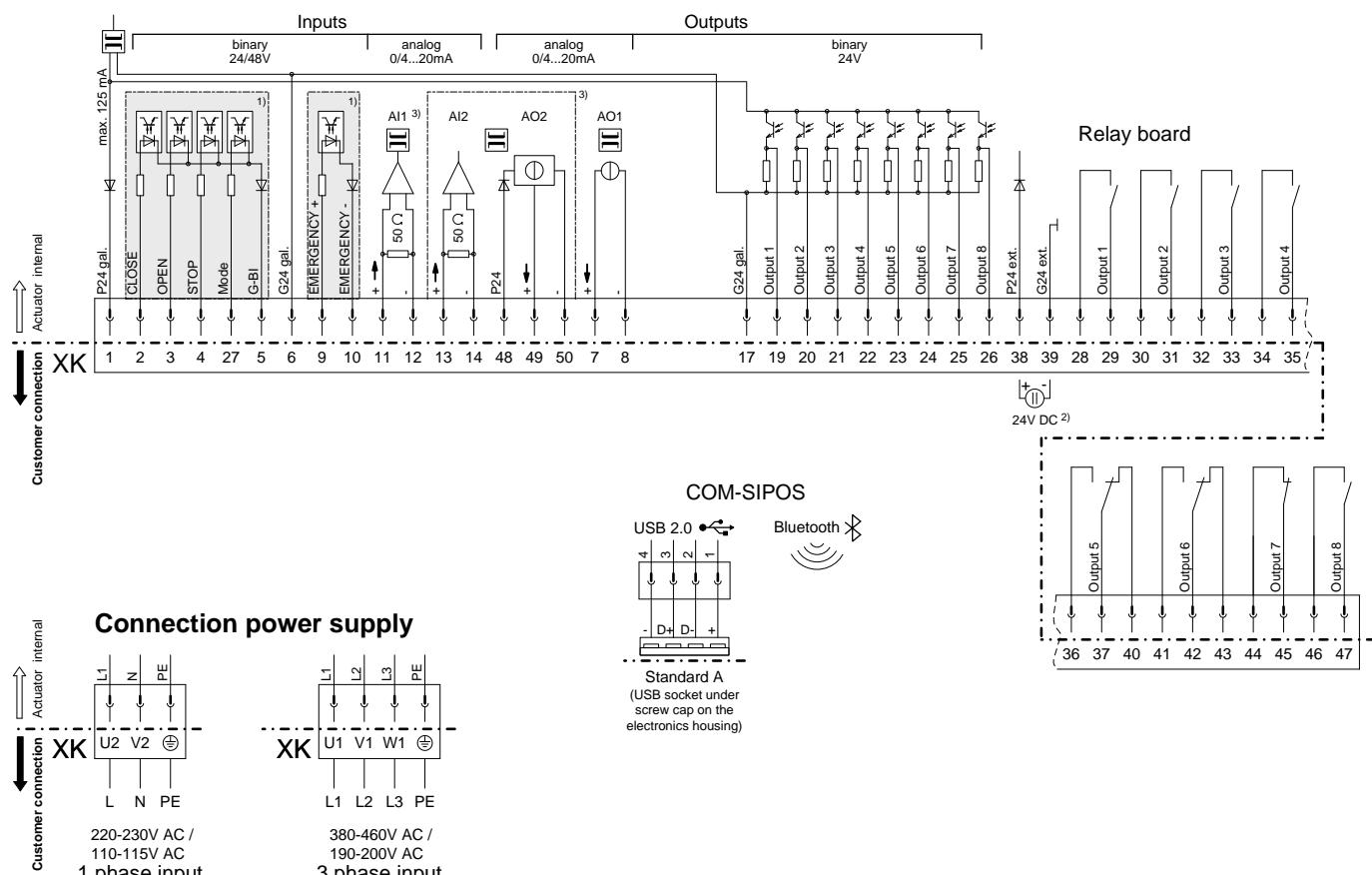
- 6 mm<sup>2</sup> Power supply
- 2.5 mm<sup>2</sup> Control and feedback signals

The control/feedback wire must be shielded!

## Wiring diagram PROFITRON with relay board

Y070.248

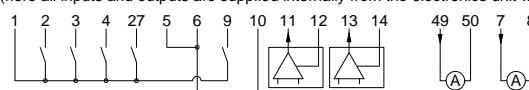
## Connection control and feedback signals



## Customer connection - wiring examples:

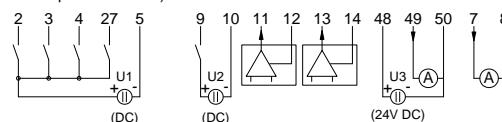
## Wiring example I: „internal 24V DC supply“

(here all inputs and outputs are supplied internally from the electronics unit with 24V DC)



## Wiring example II: „external 24/48V DC supplies“

(in this example all galvanically isolated areas are supplied externally from different 24/48V DC power sources)



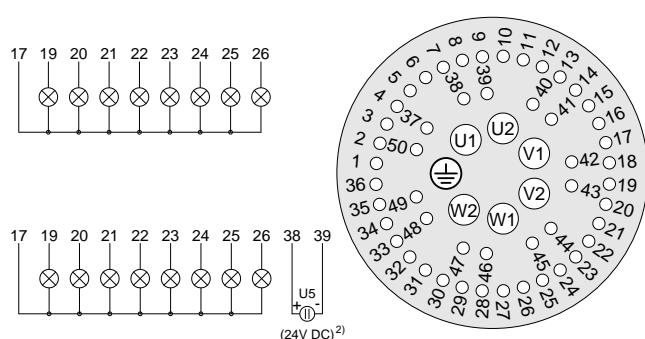
1) galvanically isolated areas: can be supplied from different sources with 24/48V DC

2) auxiliary 24V DC supply for electronics unit (if required)

(In case of mains failure both actual position value and actuator status (binary outputs 1-8) will continue to be signalled.  
Communication via COM-SIPOS – changes of parameters resp. download of actuator data – is possible.)

3) option

## Plug assignment XK



Wire cross-section max.:

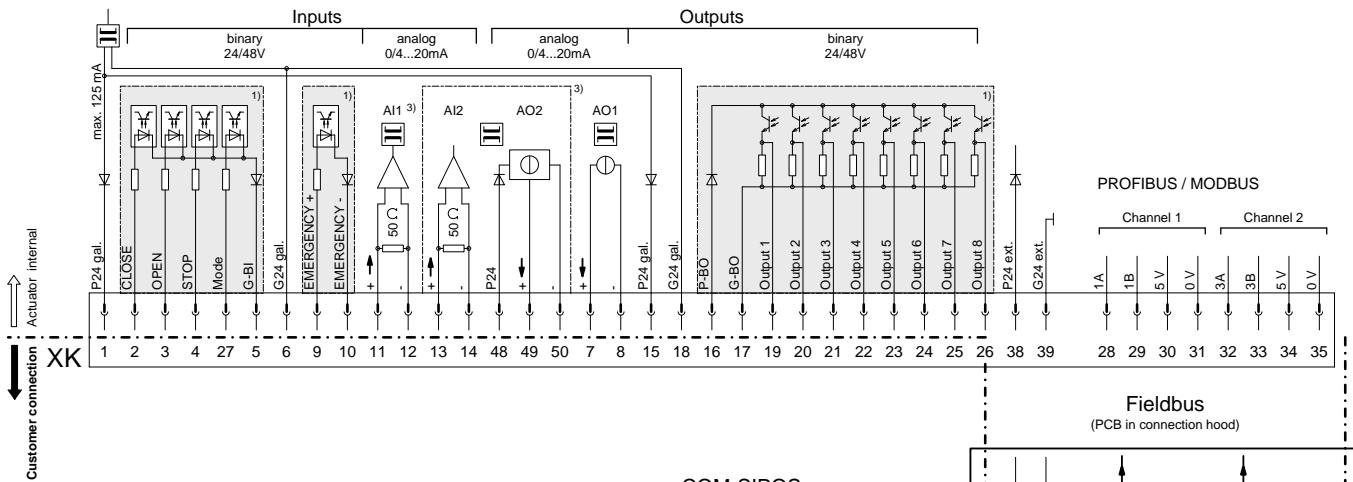
- 6 mm<sup>2</sup> Power supply
- 2.5 mm<sup>2</sup> Control and feedback signals

The control/feedback wire must be shielded!

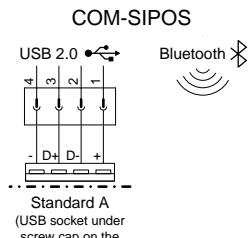
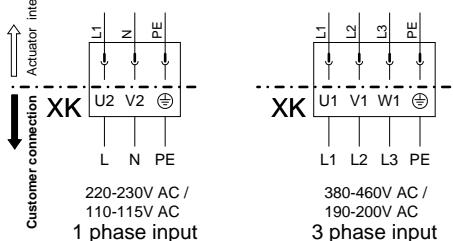
## Wiring diagram PROFITRON with Fieldbus

Y070.249

### Connection control and feedback signals

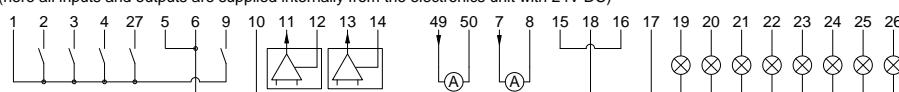


### Connection power supply

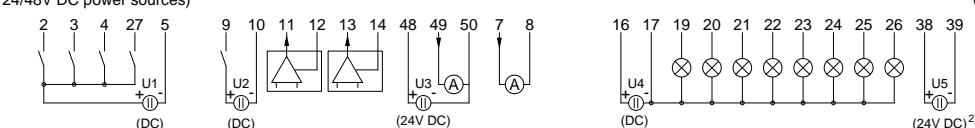


### Customer connection - wiring examples:

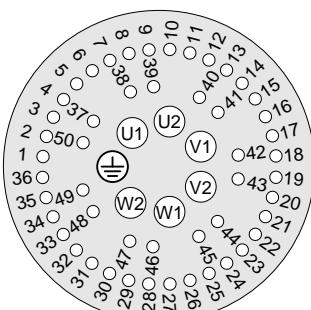
Wiring example I: „internal 24V DC supply“  
(here all inputs and outputs are supplied internally from the electronics unit with 24V DC)



Wiring example II: „external 24/48V DC supplies“  
(in this example all galvanically isolated areas are supplied externally from different 24/48V DC power sources)



### Plug assignment XK



- 1) galvanically isolated areas: can be supplied from different sources with 24/48V DC
- 2) auxiliary 24V DC supply for electronics unit (if required)  
(In case of mains failure both actual position value and actuator status (binary outputs 1-8) will continue to be signalled.  
Communication via COM-SIPOS or fieldbus – changes of parameters resp. download of actuator data – is possible.)
- 3) option
- 5) up to 4 connectors P24 and M on the fieldbus connection PCB

Wire cross-section max.:  

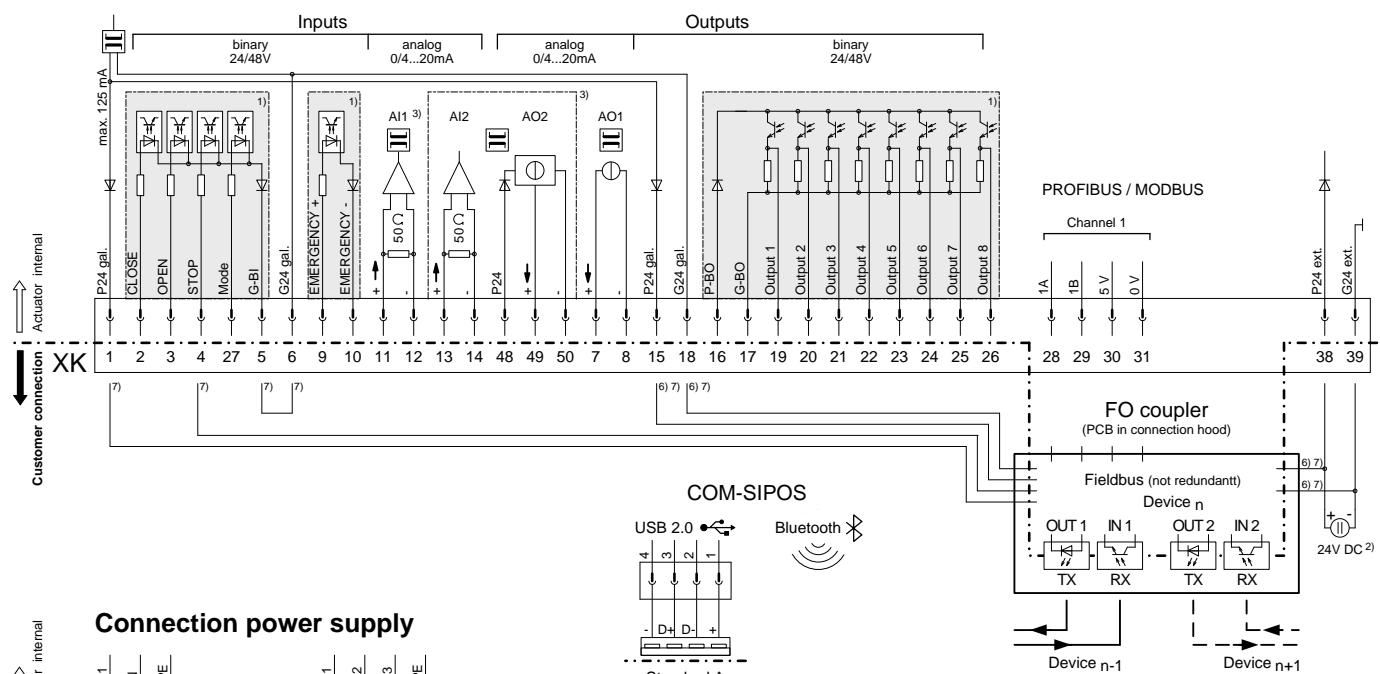
- 6 mm<sup>2</sup> Power supply
- 2.5 mm<sup>2</sup> Control and feedback signals

The control/feedback wire must be shielded!

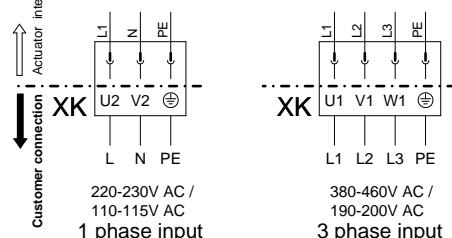
## Wiring diagram PROFITRON with Fieldbus and FO

Y070.361

## Connection control and feedback signals



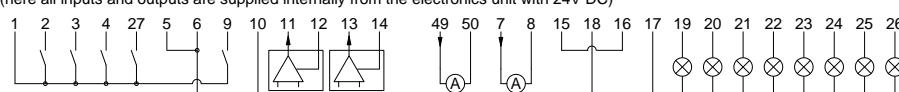
## Connection power supply



## Customer connection - wiring examples:

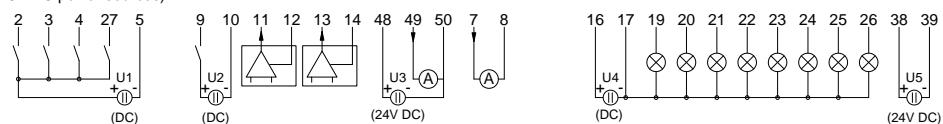
## Wiring example I: „internal 24V DC supply“

(here all inputs and outputs are supplied internally from the electronics unit with 24V DC)

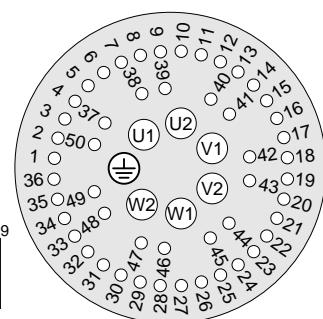


## Wiring example II: „external 24/48V DC supplies“

(in this example all galvanically isolated areas are supplied externally from different 24/48V DC power sources)



## Plug assignment XK



1) galvanically isolated areas: can be supplied from different sources with 24/48V DC

2) auxiliary 24V DC supply for electronics unit (if required)

(In case of mains failure both actual position value and actuator status (binary outputs 1-8) will continue to be signalled.  
Communication via COM-SIPOS or fieldbus – changes of parameters resp. download of actuator data – is possible.)

3) option

6) factory-wired connection cable only with option „C17“ (FO in linear or star topology)

7) factory-wired connection cable only with option „C18“ (PROFIBUS, FO in ring topology)

Wire cross-section max.:

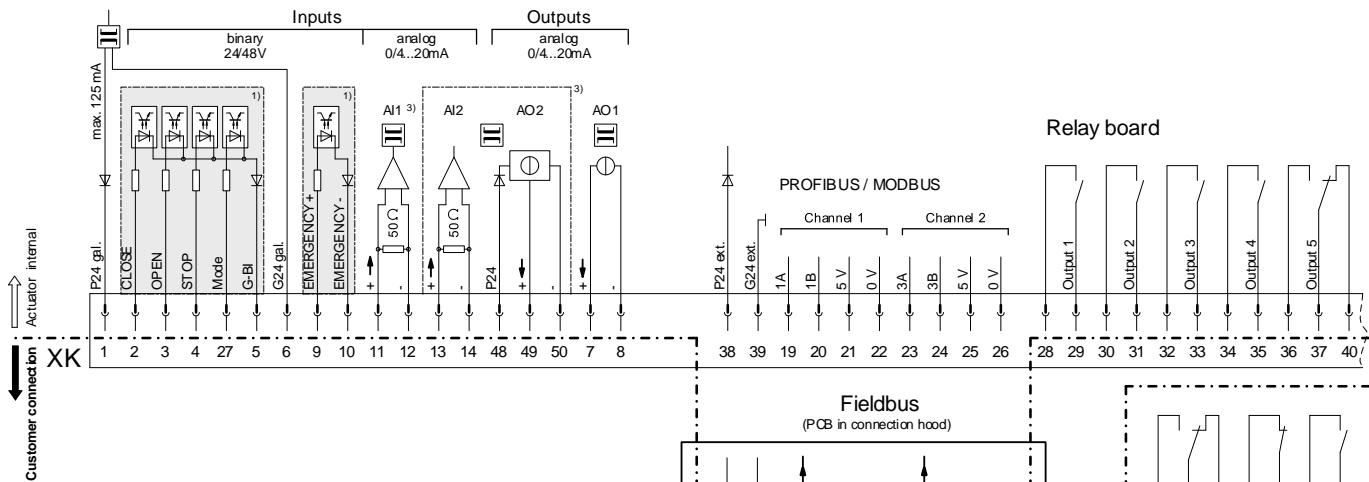
- 6 mm<sup>2</sup> Power supply- 2.5 mm<sup>2</sup> Control and feedback signals

The control/feedback wire must be shielded!

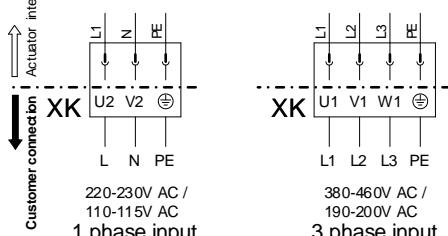
## Wiring diagram PROFITRON with Fieldbus and relay board

Y070.469

### Connection control and feedback signals

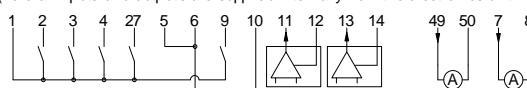


### Connection power supply

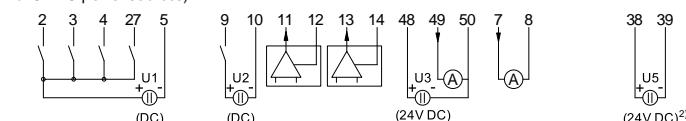


### Customer connection - wiring examples:

Wiring example I : „internal 24V DC supply“  
(here all inputs and outputs are supplied internally from the electronics unit with 24V DC)

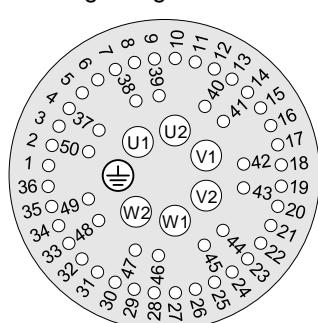


Wiring example II: „external 24/48V DC supplies“  
(in this example all galvanically isolated areas are supplied externally from different 24/48V DC power sources)



- 1) galvanically isolated areas: can be supplied from different sources with 24/48V DC
- 2) auxiliary 24V DC supply for electronics unit (if required)  
(In case of mains failure both actual position value and actuator status (binary outputs 1-8) will continue to be signalled.  
Communication via COM-SIPOS or fieldbus – changes of parameters resp. download of actuator data – is possible.)
- 3) option
- 5) up to 4 connectors P24 and M on the fieldbus connection PCB

### Plug assignment XK



Wire cross-section max.:  

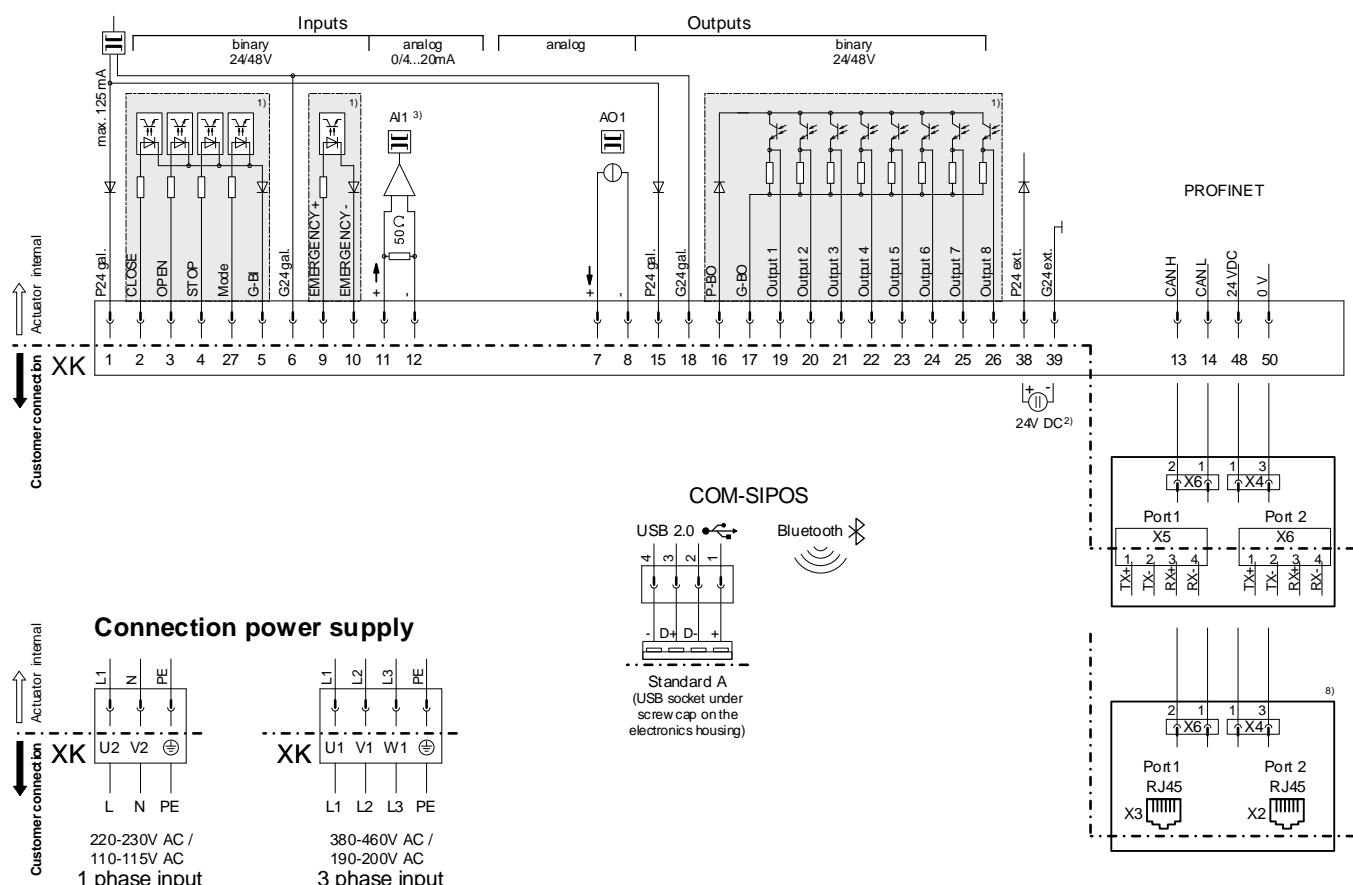
- 6 mm<sup>2</sup> Power supply
- 2.5 mm<sup>2</sup> Control and feedback signals

The control/feedback wire must be shielded!

## Wiring diagram PROFITRON with PROFINET

Y070.527

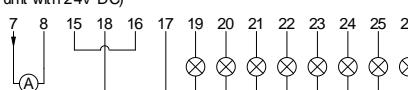
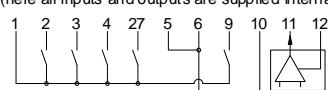
## Connection control and feedback signals



## Customer connection - wiring examples:

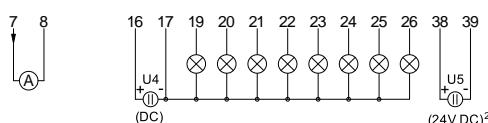
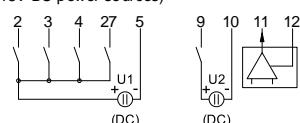
## Wiring example I: „internal 24 V DC supply“

(here all inputs and outputs are supplied internally from the electronics unit with 24V DC)



## Wiring example II: „external 24/48V DC supplies“

(in this example all galvanically isolated areas are supplied externally from different 24/48V DC power sources)



1) galvanically isolated areas: can be supplied from different sources with 24/48V DC

2) auxiliary 24V DC supply for electronics unit (if required)

(In case of mains failure both actual position value and actuator status (binary outputs 1-8) will continue to be signalled.  
Communication via COM-SIPOS or fieldbus – changes of parameters resp. download of actuator data – is possible.)

3) option

8) option C13 - PROFINET connection with RJ45 (X2, X3) instead of insulation displacement connection (X5, X6)

Wire cross-section max.:
 

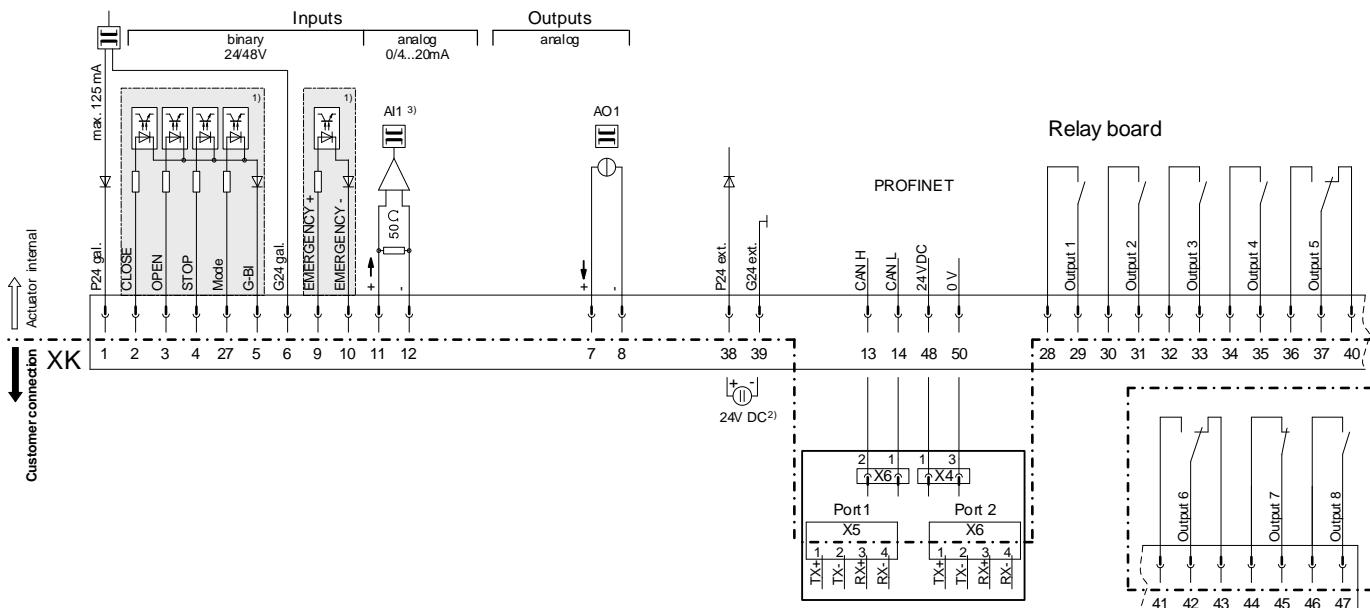
- 6 mm<sup>2</sup> Power supply
- 2.5 mm<sup>2</sup> Control and feedback signals

 The control/feedback wire must be shielded!

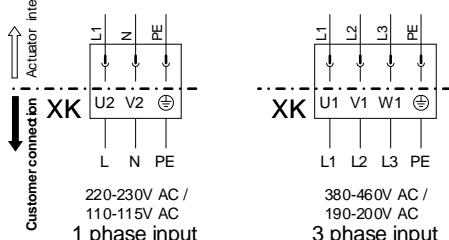
## Wiring diagram PROFITRON with PROFINET and relay board

Y070.528

### Connection control and feedback signals



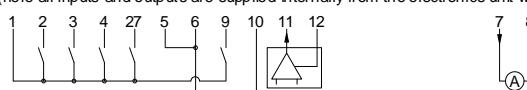
### Connection power supply



### Customer connection - wiring examples:

#### Wiring example I: „internal 24V DC supply“

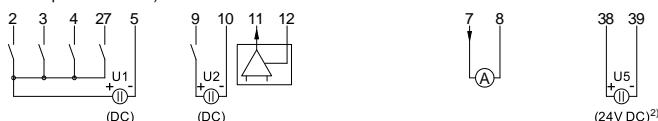
(here all inputs and outputs are supplied internally from the electronics unit with 24V DC)



7  
8  
(A)

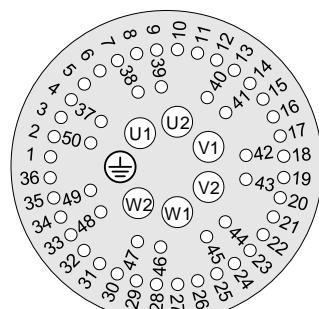
#### Wiring example II: „external 24/48V DC supplies“

(in this example all galvanically isolated areas are supplied externally from different 24/48V DC power sources)



7  
8  
(A)  
38  
39  
(24V DC)<sup>2</sup>

### Plug assignment XK



1) galvanically isolated areas: can be supplied from different sources with 24/48V DC

2) auxiliary 24V DC supply for electronics unit (if required)

(In case of mains failure both actual position value and actuator status (binary outputs 1-8) will continue to be signalled.  
Communication via COM-SIPOS or fieldbus – changes of parameters resp. download of actuator data – is possible.)

3) option

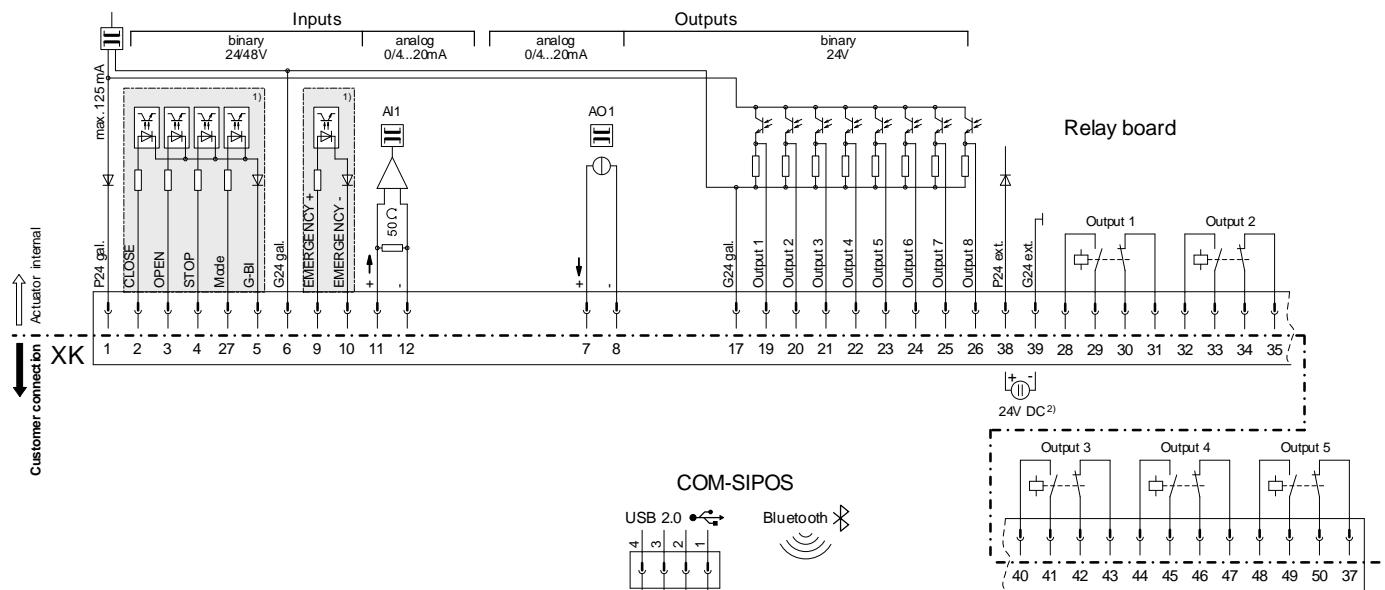
8) option C13 - PROFINET connection with RJ45 (X2, X3) instead of Insulation displacement connection (X5, X6)

Wire cross-section max.:-  
- 6 mm<sup>2</sup> Power supply  
- 2.5 mm<sup>2</sup> Control and feedback signals  
The control/feedback wire must be shielded!

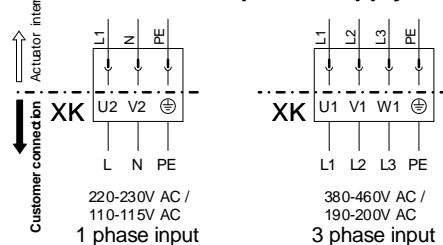
## Wiring diagram PROFITRON with SIPOS 5 compatible relay board "C54"

Y070.534

## Connection control and feedback signals



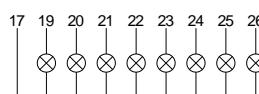
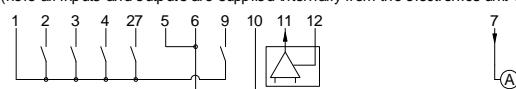
## Connection power supply



## Customer connection - wiring examples:

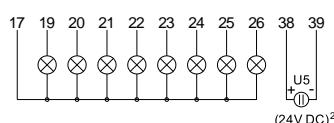
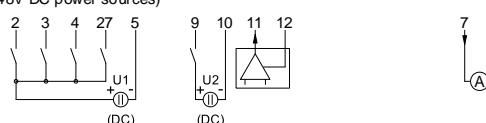
## Wiring example I: „internal 24V DC supply“

(here all inputs and outputs are supplied internally from the electronics unit with 24V DC)

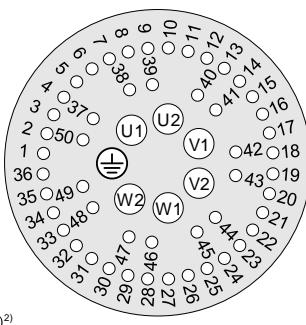


## Wiring example II: „external 24/48V DC supplies“

(in this example all galvanically isolated areas are supplied externally from different 24/48V DC power sources)



## Plug assignment XK



1) galvanically isolated areas: can be supplied from different sources with 24/48V DC

2) auxiliary 24V DC supply for electronics unit (if required)

(In case of mains failure both actual position value and actuator status (binary outputs 1-8) will continue to be signalled.  
Communication via COM-SIPOS – changes of parameters resp. download of actuator data – is possible.)

Wire cross-section max.:  
 - 6 mm<sup>2</sup> Power supply  
 - 2.5 mm<sup>2</sup> Control and feedback signals  
 The control/feedback wire must be shielded!



