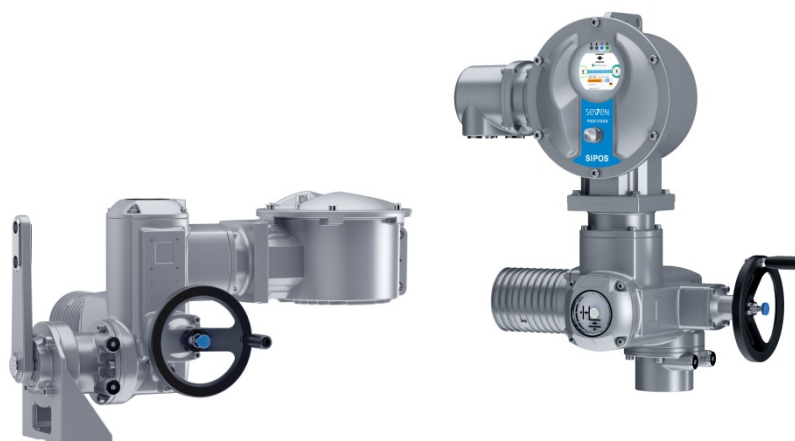


Technical Data

small electric Part-turn Actuators 2SQ7



Contents		Page
General data	Mounting position, duty classifications, noise level, paint finish and corrosion protection, lubrication, degree of protection, vibration performance, ambient temperature, installation altitude	2 - 3
Mechanical data	<ul style="list-style-type: none"> • ON-OFF duty (2SQ70), inching/positioning duty(2SQ73) and modulating duty (2SQ75) Actuating torque, cut-off torque, manual force, valve connection, positioning time • Coupling dimensions – Direct mounting • Gear box version • Dimensional drawings - Direct mounting • - Base + leverarm 	4 - 5 6 7 8 9
Electrical data	<ul style="list-style-type: none"> • Power supply ON-OFF duty (2SQ70), inching/positioning duty(2SQ73) and modulating duty (2SQ75) • Control and feedback signals • Wiring diagrams 	10 11 - 13 14 - 21

Technical Data

General data

SIPOS actuators are suitable for automatic and safe operation of industrial valves in accordance with EN 15714-2.

Mounting position

The actuator can be mounted in **any position**.

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

2SQ70..-

- o ON-OFF duty, class **A** according to EN 15714-2
- o Short-time duty **S2-15 min** according to DIN EN 60034

2SQ73..-

- o Inching/positioning duty, class **B** according to EN 15714-2

2SQ75..-

- o Modulating duty, class **C** according to EN 15714-2
- o 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 positioning time 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**.

- o Electronics unit: The housing material of the electronics unit consists of a **corrosion resistant aluminum alloy** for standard atmospheric environmental conditions. For this reason, the electronics unit can also be used without coating.
- o Part-turn unit: The housing as such is made of cast iron, base and lever are made of spheroidal cast iron. As standard, the part-turn unit, even in case of uncoated electronics unit, is provided with two-layer powder coating (2-component iron-mica combination).

The complete part-turn actuator is coated with a 2K-PUR-single-layer coating (2-component polyurethane single-coat paint) as standard. Both single-layer coating and powder coating are UV-resistant. They are applied with a minimum film thickness of 60 µm when dry with a 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/powder 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 EN15714-2 (EN ISO 12944-2):

Version	Standard version: Corrosivity category C5	Very high corrosion protection, corrosivity category C5 with long protection time >> 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

Technical Data

Lubrication

Part-turn gear units are lubricated for life with flow 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

Small electric part-turn actuators 2SQ7 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	1 g	5 – 500 Hz	1 octave/min	20 sweeps (10 cycles) / in 3 directions

Loads according to EN 60068-2-6 up to **2 g** for separate mounting of electronics and part-turn 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**.

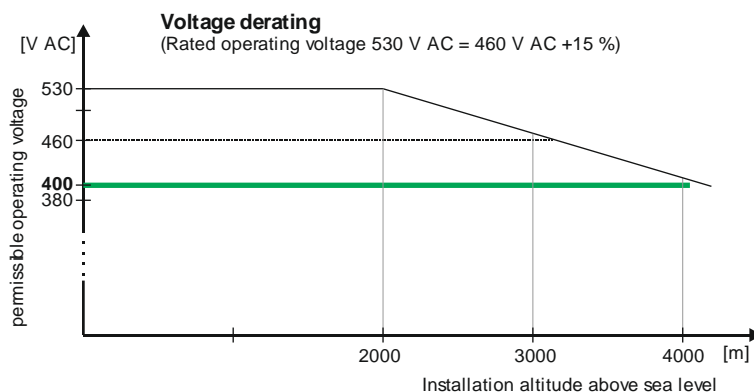
Ambient temperature

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 %).

Technical Data

Mechanical data

1 2 3 4 5 6 7 - 8 9 10 11 12 13 14 15 16
 2SQ7 2 - 1 - 4

Tripping torque

Duty classification acc. EN 15714-2	Adjustable tripping torque T_c [Nm] running torque max. 50 % $T_{C\ max}$.	Max. torque (running torque at modulating duty)	Weight \approx [kg]
ON-OFF Class A	75 – 150		27
Inching/Positioning Class B	75 – 150	75	27
Modulation Class C	75 – 150	75	27

Force for manual mode >> 16 revolutions / 90° <<	
Hand wheel dia.	at $T_{C\ max}$.
160 mm	83 N

continuously adjustable torque dependent cut-off

default setting: 50 % $T_{C\ max}$.	Tripping torque range [Nm]	continuously adjustable between 50 – 100% $T_{C\ max}$ [Nm]		
		50%	75%	100%
	75 - 150	75	112.5	150

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

Manual mode

>> Change-over only if actuator is at standstill! <<
 Manual operation is activated by pressing the hand wheel push button once.
 Manual operation is automatically disengaged when switching on the motor.
 The hand wheel does not rotate during motor operation!

Direction of rotation: Turning hand wheel clockwise results clockwise rotation of coupling resp. lever arm (standard: gear box of the part-turn unit in version RR). For RL version the hand wheel has to be turned anti-clockwise for closing. This results in an anti-clockwise rotation of the coupling resp. lever arm.

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

The hand wheel-gear transmission ratio is $i = 62$.

Self-locking

Small part-turn actuators 2SQ7 are designed as self-locking actuators.

Flange size / base + leverarm

DIN EN ISO 5211	Flange size / base + leverarm for the torque ranges [Nm]	add. weight \approx [kg]
F05 / F07	75 – 150	1
Base + leverarm	75 – 150	6

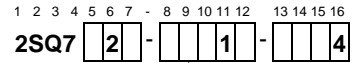
Valve connection

Valve connection (coupling or leverarm)			
Direct mounting ¹⁾ (standard dimensions / max dimensions) for the torque ranges [Nm]			
Coupling ²⁾ (splined bush) DIN EN ISO 5211	75 – 150 with flange F05/F07		
unbored			
bore \varnothing [mm]	22 / 25,4	with 1 keyway acc. to DIN 6885 Part 1	
square bore [mm]	17 / 22		
bore with two flats [mm]	17 / 22		
Base + leverarm			
Leverarm lengths [mm]	for the torque ranges [Nm]		Bore Cone 1:10 suitable damper rod
150 / 200	75 - 150		16 H8 2SX7304-0KG00

Dimensions to coupling, see page 6

1) without spigot at the connecting flange
 2) coupling with thread and grub screw

Technical Data



Positioning time

Positioning range	Positioning time ^[sec/90°]		default setting
	for the torque ranges [Nm] (Positioning time $t_{120°} = 1.33 \times t_{90°}$)		
80 - 10	75 - 150	28	

Positioning time setting

Positioning time 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 positioning times can be set for OPEN, CLOSE, EMERGENCY OPEN and EMERGENCY CLOSE.

ECOTRON: 7-step adjustable positioning time within selected positioning range

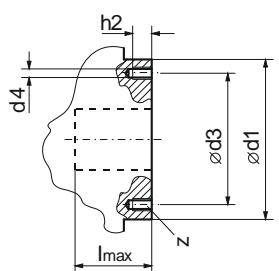
Positioning range (sec _{max.} - sec _{min.})	adjustable in seven steps; step-up factor 1.4 ^[sec/90°]						
	1	2	3	4	5	6	7
80 - 10	80	56	40	28	20	14	10

PROFITRON: continuous adjustable positioning time within selected positioning range

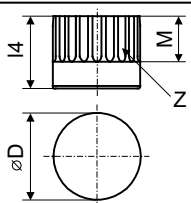
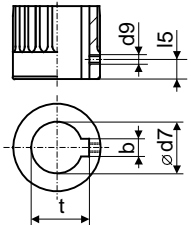
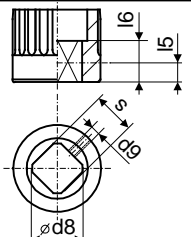
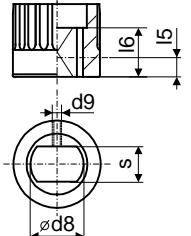
Positioning range (sec _{max.} - sec _{min.})	continuous adjustable between 12.5 - 100% sec _{max.} ^[sec/90°]			
	12.5%	...	35%	100%
80 - 10	80	...	28	10

Technical Data

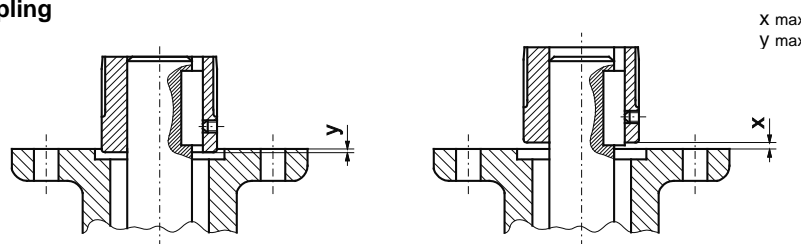
Coupling dimensions – Direct mounting

Flange dimensions		Part-turn actuator type	21	
		2SQ7. □□	F05	F07
		Flange size	EN ISO 5211	
		d1	50	70
		d3	M6	M8
		d4	12	15
		h2		
		l max	40	
		z ¹⁾	4	

Coupling dimensions

unbored 	D l4 M Z (No. of teeth)	41.75 35 20 32
Bore with keyway ²⁾ acc. to EN ISO 5211 and DIN 6885 part 1 	bJS9 ³⁾ d7H8 d7 max. d9 l5 t ³⁾	6 22 25.4 M5 8 24.8
Square bore ²⁾ acc. to EN ISO 5211 	d8 min. d8 max. d9 l5 l6 min. sH11 sH11 max.	22.2 28.2 M5 8 30 17 22
Bore with two-flats ²⁾ acc. to EN ISO 5211 	d8 min. d8 max. d9 l5 l6 min. sH11 sH11 max.	22.2 28.2 M5 8 25 17 22

Mounting position of coupling

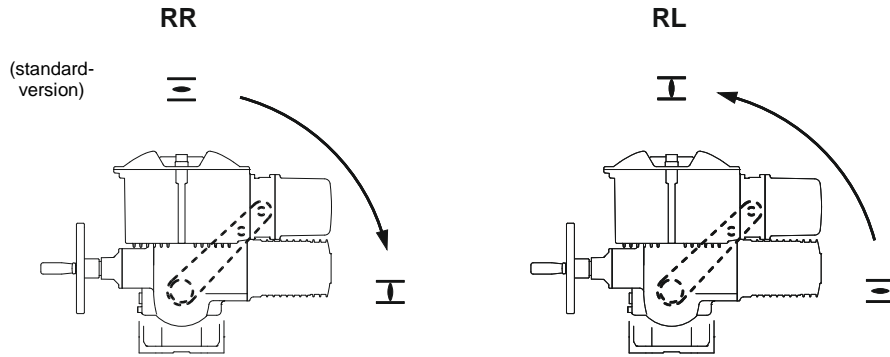


x max. 3
y max. 2

¹⁾ number of tapped holes d4 ²⁾ thread with grub screw
³⁾ dimensions depend on Ø d7, refer to DIN 6885 part 1

Technical Data

Gear box version



Representation of gearbox with top view of electronics unit

1 2 3 4 5 6 7 - 8 9 10 11 12 13 14 15 16
 2SQ7 2 - 1 - 4

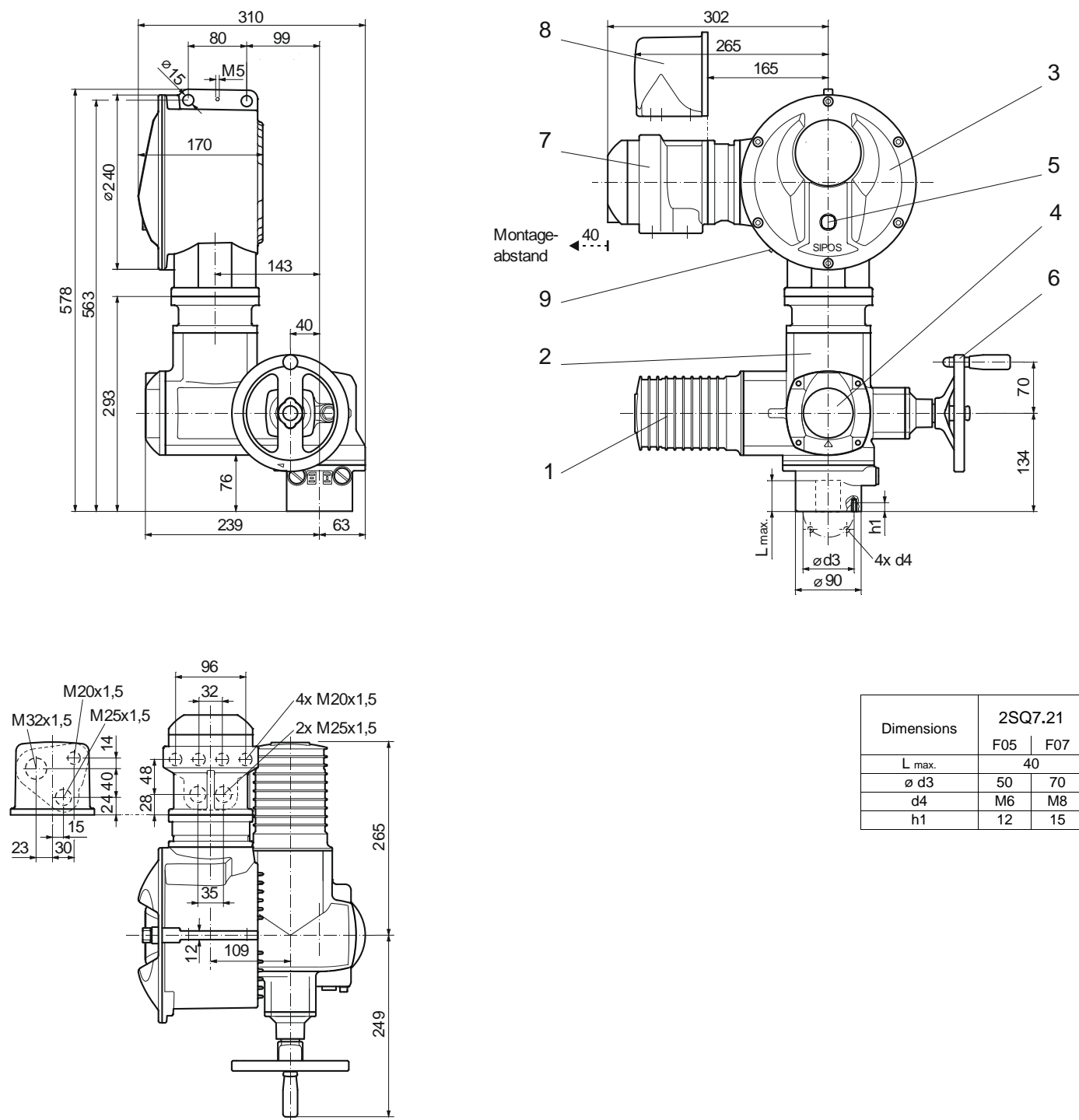
Gear box version	Direction of rotation at output/leverarm ¹⁾	Swing angle	
RR	clockwise closed	90° ²⁾	0
		120° ³⁾	4
RL	anti-clockwise closed	90° ²⁾	2
		120° ³⁾	6

1) Considering the marginal conditions and using splines, the lever can be mounted in any position on the drive shaft.
 2) adjustable between 75° and < 105°
 3) adjustable between 105° and < 135°

Technical Data

Dimensional drawing 2SQ7.21

R866859

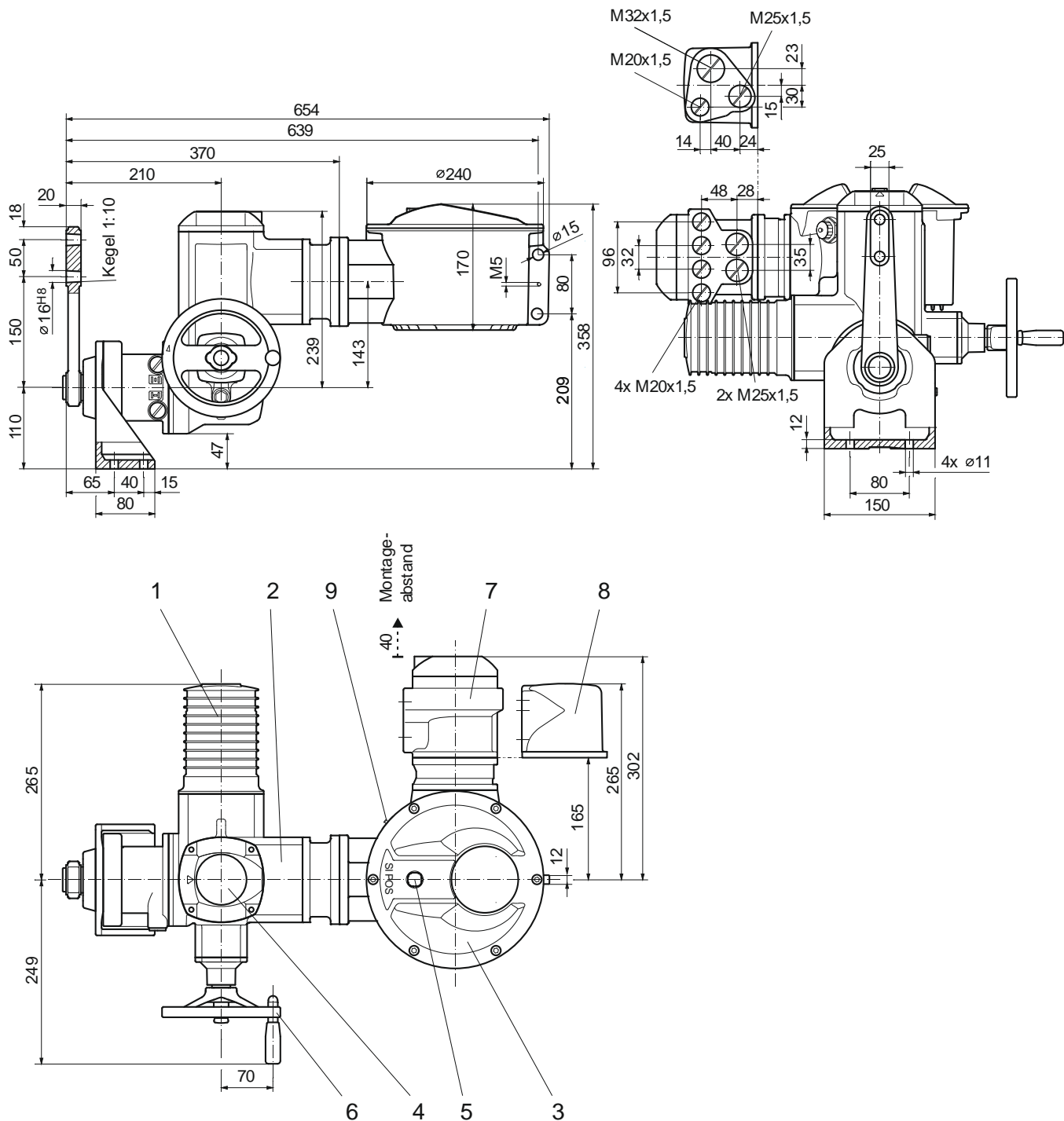


- 1 Motor
- 2 Gear unit
- 3 Electronics unit
- 4 Position indicator
- 5 Local control station
- 6 Hand wheel
- 7 Field bus connection
- 8 Plug connection
- 9 USB interface (only PROFITRON)

Technical Data

Dimensional drawing 2SQ7.28

R866860



- | | | | | | |
|---|------------------|---|-----------------------|---|--------------------------------|
| 1 | Motor | 4 | Position indicator | 7 | Field bus connection |
| 2 | Gear unit | 5 | Local control station | 8 | Plug connection |
| 3 | Electronics unit | 6 | Hand wheel | 9 | USB interface (only PROFITRON) |

Technical Data

**Electrical data – Power supply of ON-OFF duty (2SQ70)
Inching/positioning duty (2SQ73) and
Modulating duty (2SQ75)**

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

Type 2SQ70.. 2SQ73.. 2SQ75..	$t_{min.}$ [sec/90°]	$T_C \text{ max.}$ [Nm]	Current (110 V) ^{2) 3)}		Power P_N ⁴⁾ [W]	Motor power [W]	Fuse slow blowing [A]
			Nominal current I_N ⁴⁾ [A]	$\approx I_{max.}$ ⁵⁾ [A]			
..... 2. -CB	10	150	1.3	1.3	100	100	6

↓
small
electronics-
unit

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

Type 2SQ70.. 2SQ73.. 2SQ75..	$t_{min.}$ [sec/90°]	$T_C \text{ max.}$ [Nm]	Current (230 V) ^{2) 3)}		Power P_N ⁴⁾ [W]	Motor power [W]	Fuse slow blowing [A]
			Nominal current I_N ⁴⁾ [A]	$\approx I_{max.}$ ⁵⁾ [A]			
..... 2. -CD	10	150	0.6	0.6	100	100	6

↓
small
electronics-
unit

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

Type 2SQ70.. 2SQ73.. 2SQ75..	$t_{min.}$ [sec/90°]	$T_C \text{ max.}$ [Nm]	Current (200 V) ^{2) 3)}		Power P_N ⁴⁾ [W]	Motor power [W]	Fuse slow blowing [A]
			Nominal current I_N ⁴⁾ [A]	$\approx I_{max.}$ ⁵⁾ [A]			
..... 2. -CJ	10	150	0.7	0.7	100	100	6

↓
small
electronics-
unit

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

Type 2SQ70.. 2SQ73.. 2SQ75..	$t_{min.}$ [sec/90°]	$T_C \text{ max.}$ [Nm]	Current (400 V) ^{2) 3)}		Power P_N ⁴⁾ [W]	Motor power [W]	Fuse slow blowing [A]
			Nominal current I_N ⁴⁾ [A]	$\approx I_{max.}$ ⁵⁾ [A]			
..... 2. -CE	10	150	0.4	0.4	100	100	6

↓
small
electronics-
unit

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 positioning time 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.

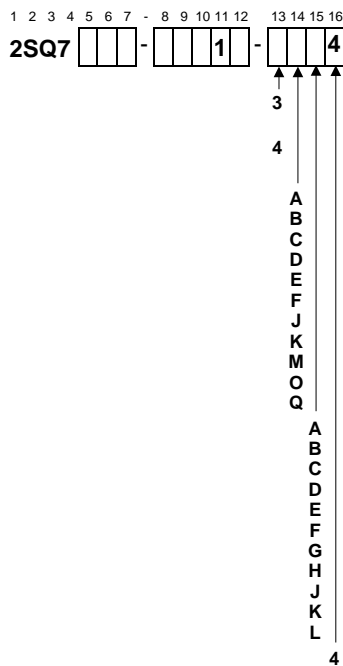
Motor space heater (programmable for PROFITRON, for ECOTRON only with option „M18“)

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.

- 1) full torque for voltage fluctuations between -30 % and +15 %
(in case of undervoltage from U_N -30% to -10%, operation may be performed with increased positioning time t)
- 2) lower voltage increases the current, higher voltage reduces the current
- 3) starting current $I_s \leq$ nominal current I_N
- 4) at 35% of the maximum torque $T_C \text{ max.}$
- 5) maximum current $I_{max.}$ is present for torque-dependent cut-off mode and for a running torque of 50% the maximum torque $T_C \text{ max.}$

Technical Data

Electrical data – 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
PROFIBUS DP 2 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

A standard software-function
B positioner
C process controller
D travel dependent output speed adjustment
E positioner + travel dependent output speed adjustment
F external analog output speed setpoint
G positioner + external analog output speed setpoint
H positioner with split-range functionality
J travel dependent freely adjustable positioning times
K positioner + travel dependent freely adjustable positioning times
L process controller + travel dependent freely adjustable positioning times

	ECOTRON 2SQ7.	PROFITRON		
		2SQ70	2SQ73	2SQ75
A	X	X	X	X
B			X	X
C				X
D		X	X	X
E			X	X
F		X	X	X
G			X	X
H			X	X
J		X	X	X
K			X	X
L				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				with option „Y12“	
	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

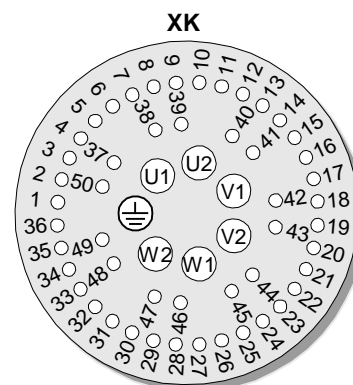
Optional free assignment of outputs, NO/NC optional (can be changed locally)

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

Technical Data

Connections at round plug (plug assignment)

Inputs and outputs		ECOTRON	PROFITRON	
		2SG7.	2SG70	2SG73 2SG75
Binary	Inputs	2, 3, 4 and 5	2, 3, 4, 5, 9, 10 and 27	
	Outputs	16 ¹⁾ , 17, 19, 20, 21, 22 and 23	16 ¹⁾ , 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	
Fieldbus (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	
Voltage output „P24 int.“ resp. „P24 gal.“		1, 6, 15 ¹⁾ and 18 ¹⁾	1, 6, 15 ¹⁾ and 18 ¹⁾	
Auxiliary 24 VDC supply for electronics unit „P24 ext.“		38 and 39	38 and 39	



Plug assignment for the external round plug connection

Position recording

Position recording is performed via precision film potentiometer at the electromechanical control unit with microcontroller assessment. The electromechanical control unit reduces the revolutions required for travel to the permissible rotation angle of the precision film potentiometer.

Positioner

Defining an analog position setpoint (0/4–20mA) 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

1) Not applicable for version with relay board.

Technical Data

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 – 4	0 – 2.5	0 – 2.5
	H - potential (high -)	[V DC]	16 – 30	16 – 60	18 – 30	18 – 60
Current (per input or output)		[mA]	4 – 7	7 – 15	max. 100	max. 50
Resistance		[Ω]	4000	4000	max. 10	max. 10

Analog inputs and outputs

- analog inputs** - AE1: 0/4-20mA
- AE2: 0/4-20mA (add-on PCB)
- analog outputs** - AA1: Position actual value (0/4-20mA) active, i.e. with internal power supply 24 V DC
- AA2: Position actual value (0/4-20mA) passive, i.e. with external power supply 24 V DC (add-on PCB)

Analog inputs and outputs are galvanically isolated (only PROFITRON).
 AE2 and AA2 are located on a common add-on PCB and have the same potential.
 For existing add-on PCB (AE2+AA2), assignment of AE1 and AE2 analog inputs as well as AA1 and AA2 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 0-20mA or 4-20mA with rising or falling level can be adjusted for PROFITRON; for ECOTRON, the curve is rising (4-20mA).

Relay outputs

Relay outputs are galvanically isolated.

	DC for resistive load			AC
	max. switching capacity	180 W (for 30 V)		
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 24V 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 24V 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 24V 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 Modbus TCP/IP	[mA]	+50	+50
with HART	[mA]	+18	+21
with relay board	[mA]	+50	+60
with actual position value	[mA]	+20	+20
with Bluetooth	[mA]	+10	+10

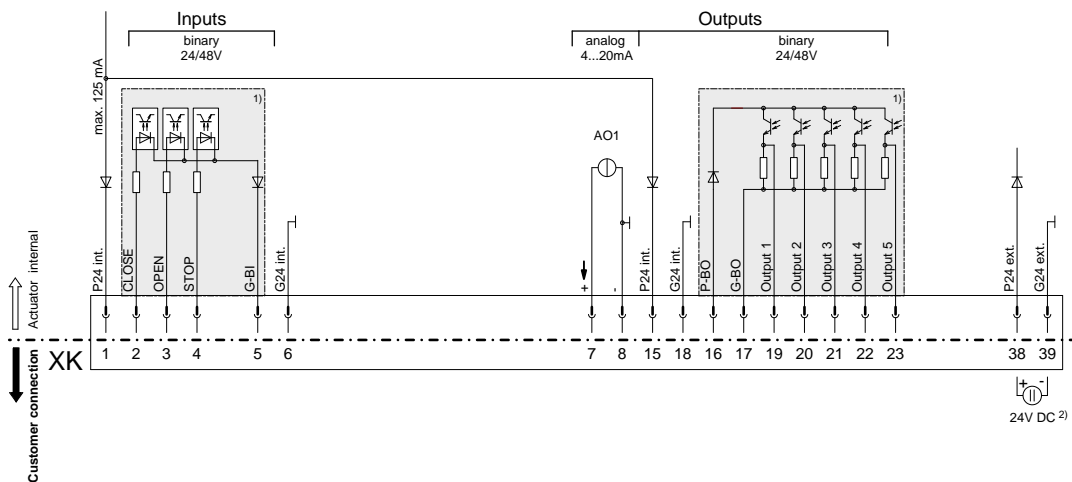
Technical Data

Wiring diagram

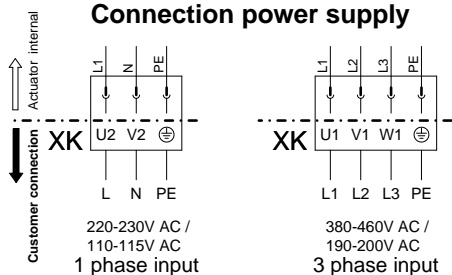
ECOTRON

Y070.243

Connection control and feedback signals



Connection power supply



Customer connection - wiring examples:

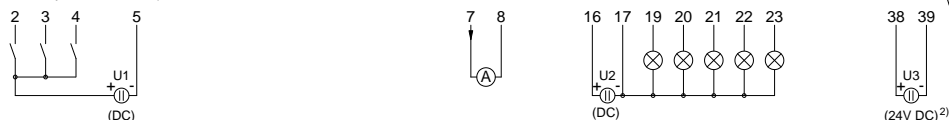
Wiring example I: „internal 24V DC supply“

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

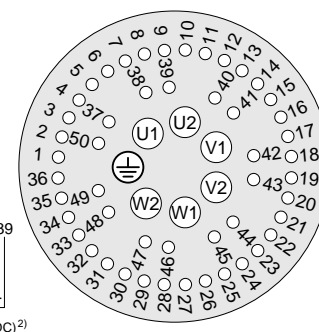


Wiring example II: „external 24/48V DC supplies“

(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 continued to be signalled.
Communication via COM-SIPOS – changes of parameters resp. download of actuator data – is possible.)

Wire cross-section max.:

- 6 mm² Power supply
- 2.5 mm² Control and feedback signals

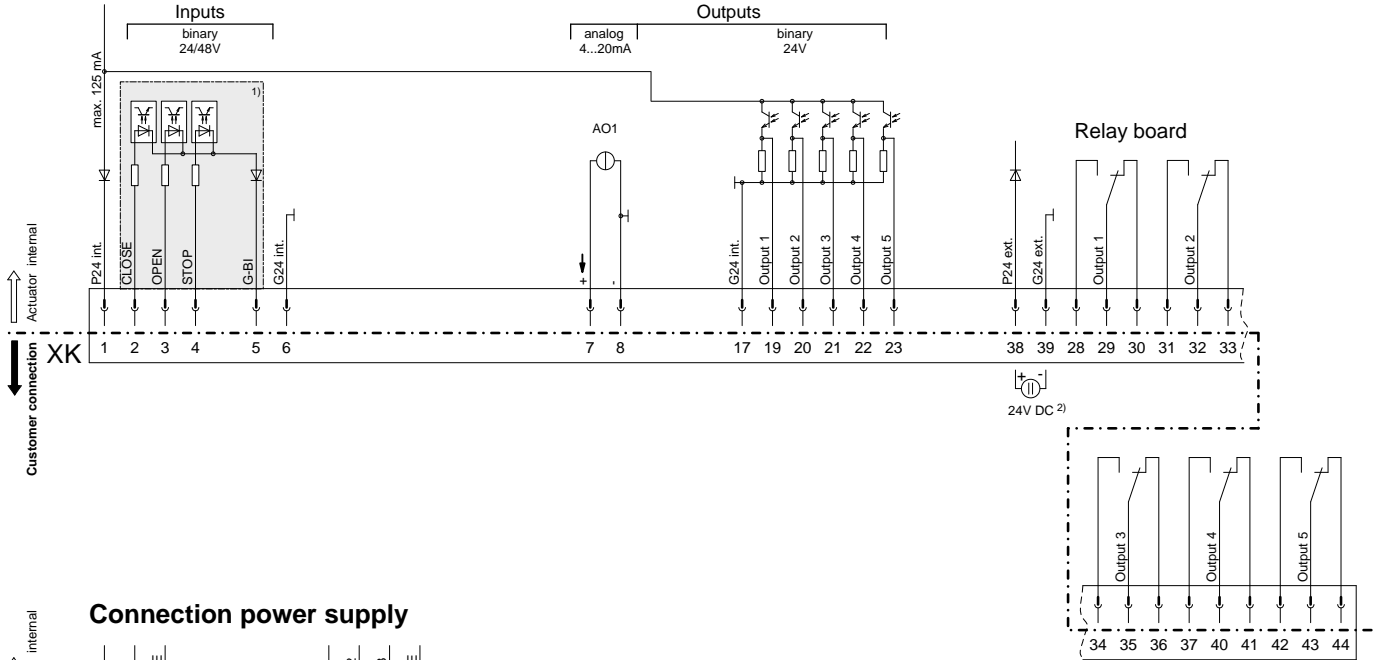
The control/feedback wire **must** be shielded!

Technical Data

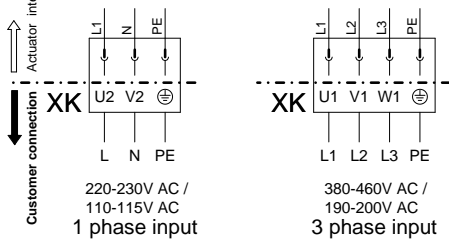
Wiring diagram **ECOTRON with relay board**

Y070.244

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)

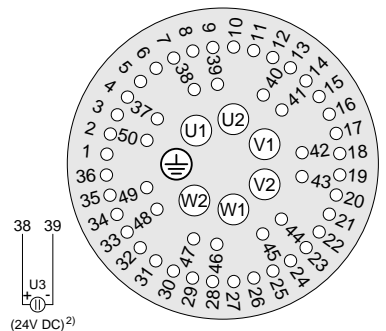


Wiring example II: „external 24/48V DC supplies“

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



Plug assignment XK



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

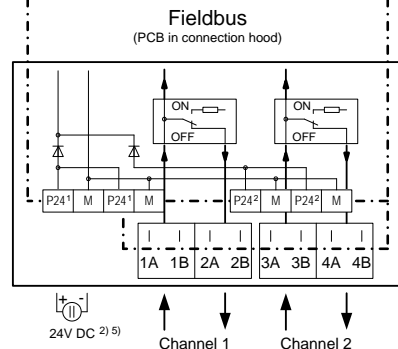
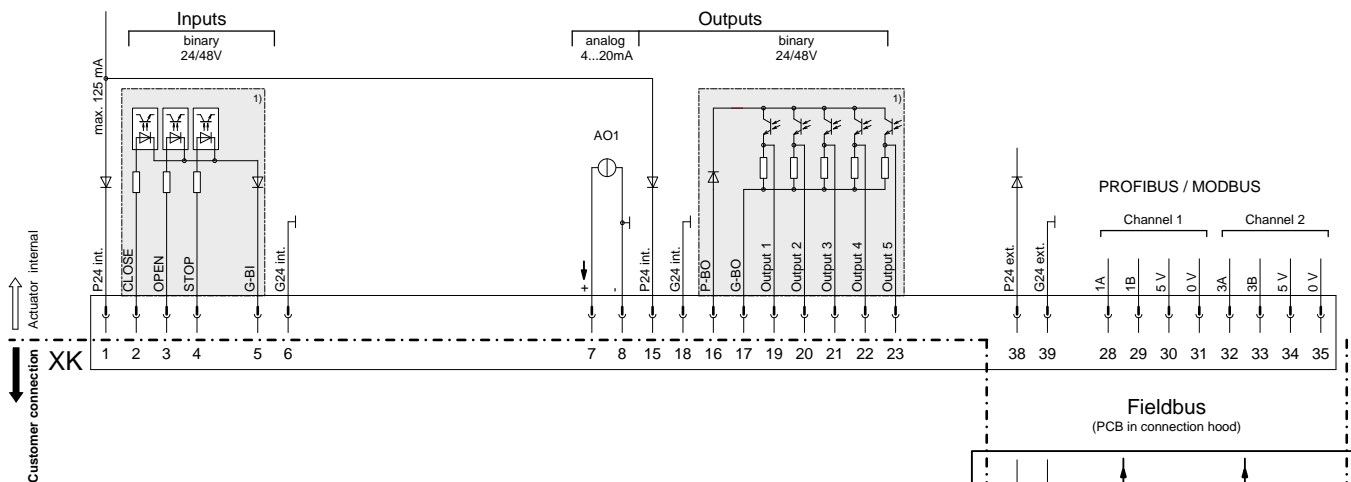
Wire cross-section max.:
 - 6 mm² Power supply
 - 2.5 mm² Control and feedback signals
 The control/feedback wire **must** be shielded!

Technical Data

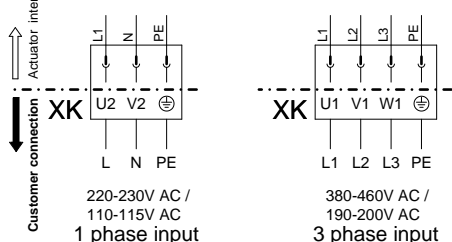
Wiring diagram ECOTRON with Fieldbus

Y070.245

Connection control and feedback signals



Connection power supply



Customer connection - wiring examples:

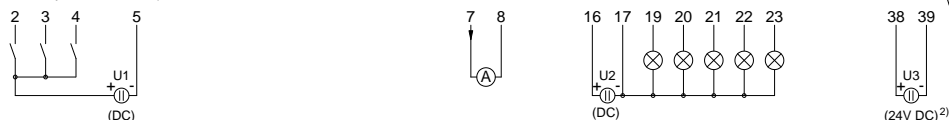
Wiring example I: „internal 24V DC supply“

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

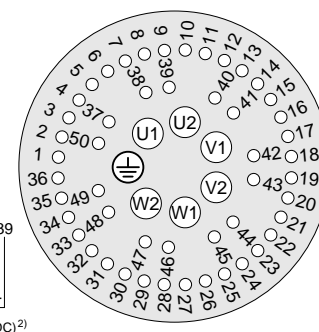


Wiring example II: „external 24/48V DC supplies“

(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 continued 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

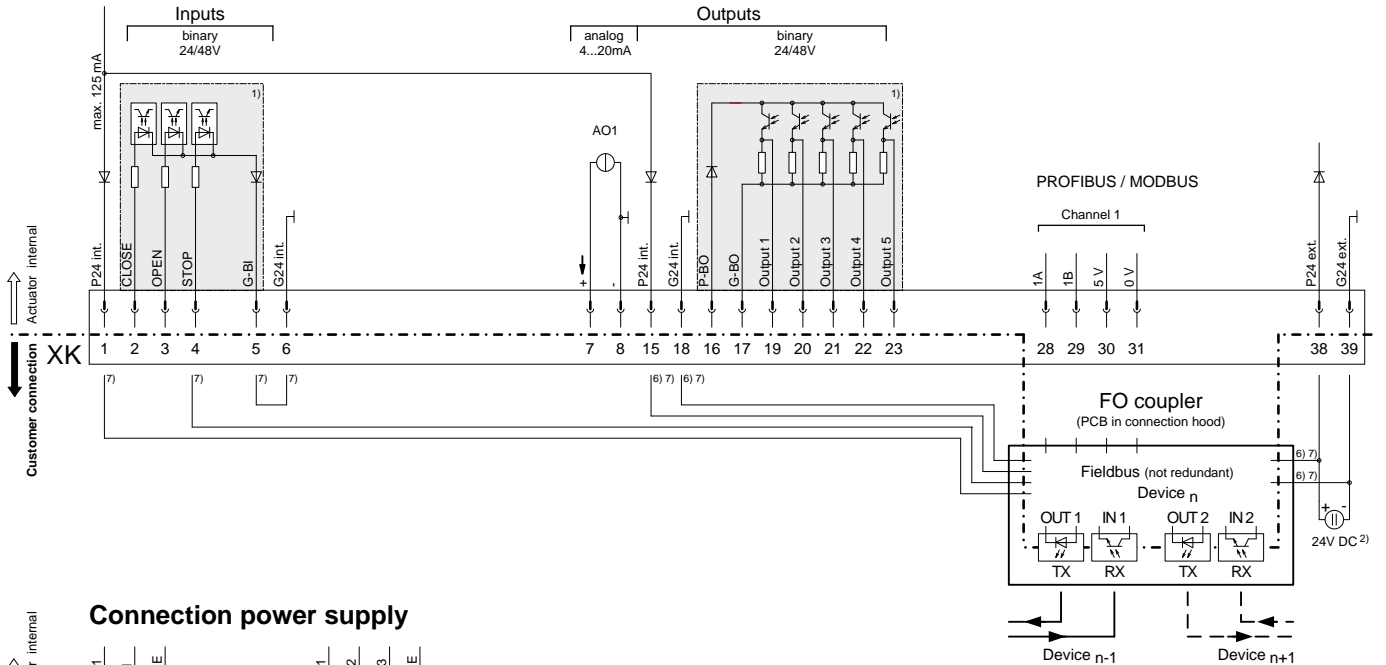
Wire cross-section max.:
 - 6 mm² Power supply
 - 2.5 mm² Control and feedback signals
 The control/feedback wire **must** be shielded!

Technical Data

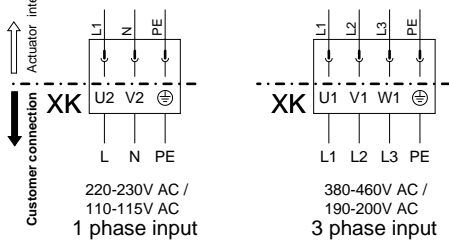
Wiring diagram ECOTRON with Fieldbus and FO

Y070.360

Connection control and feedback signals



Connection power supply



Customer connection - wiring examples:

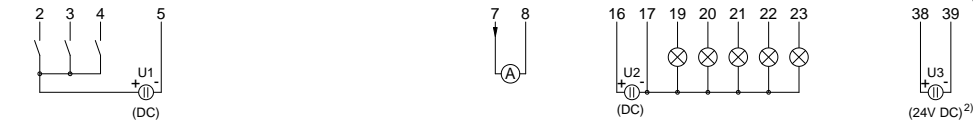
Wiring example I: „internal 24V DC supply“

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

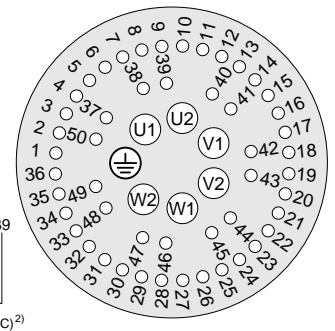


Wiring example II: „external 24/48V DC supplies“

(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 continued 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 mm² Power supply
- 2.5 mm² Control and feedback signals

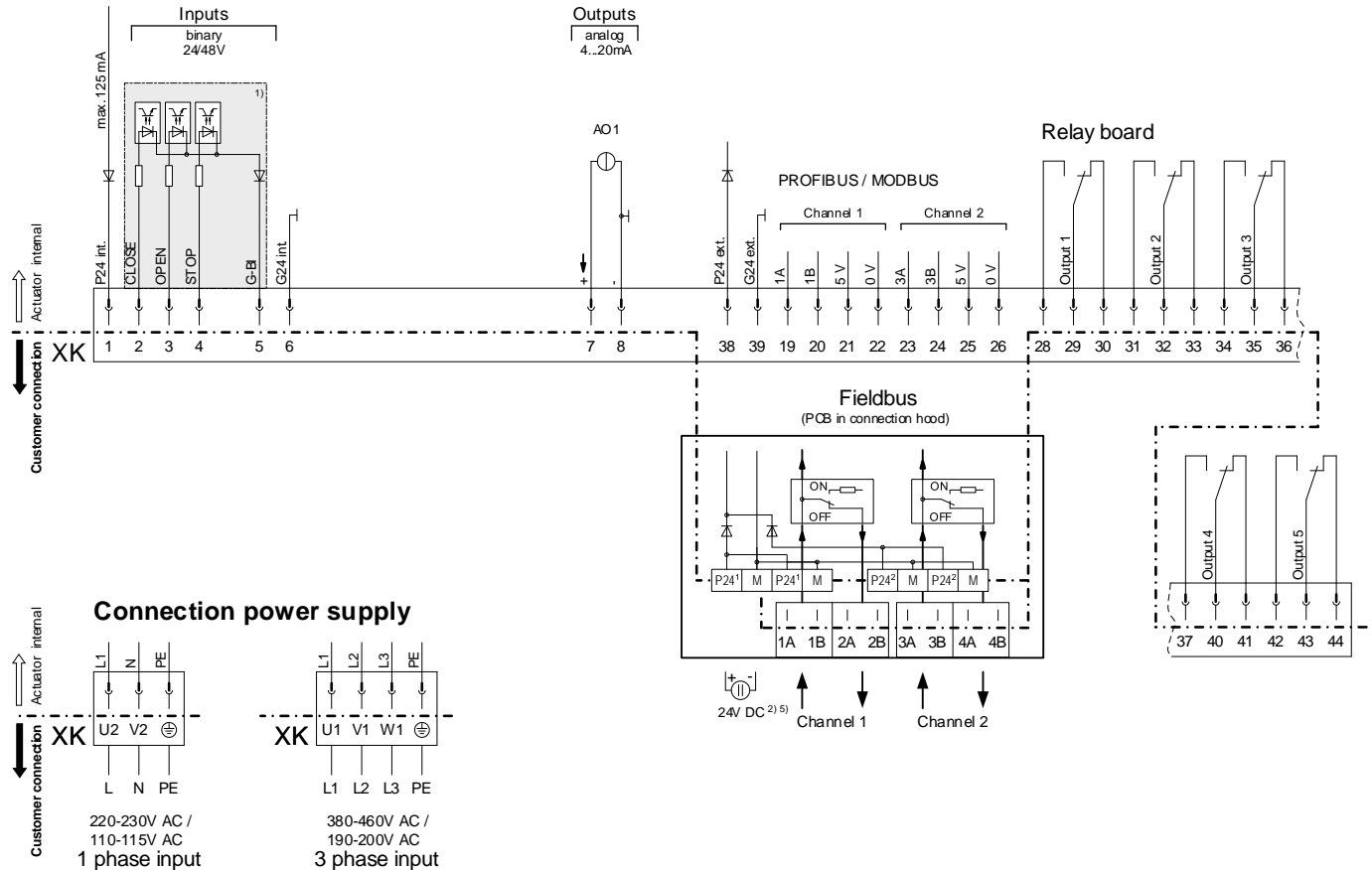
The control/feedback wire **must** be shielded!

Technical Data

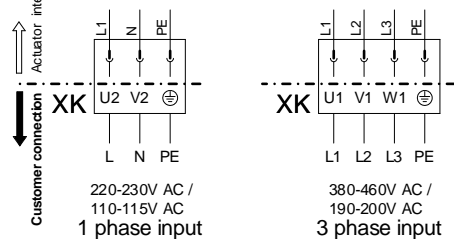
Wiring diagram **ECOTRON with Fieldbus and relay board**

Y070.468

Connection control and feedback signals



Connection power supply



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)

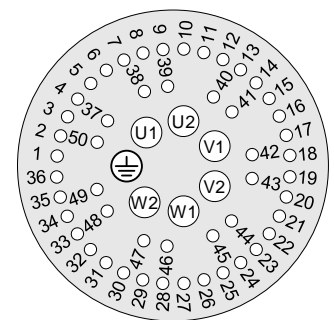


Wiring example II: „external 24/48V DC supplies“

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



Plug assignment XK



- galvanically isolated area: can be supplied from different source with 24/48V DC
- 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 or fieldbus – changes of parameters resp. download of actuator data – is possible.)
- up to 4 connectors P24 and M on the fieldbus connection PCB

Wire cross-section max.:
 - 6 mm² Power supply
 - 2.5 mm² Control and feedback signals
 The control/feedback wire **must** be shielded!

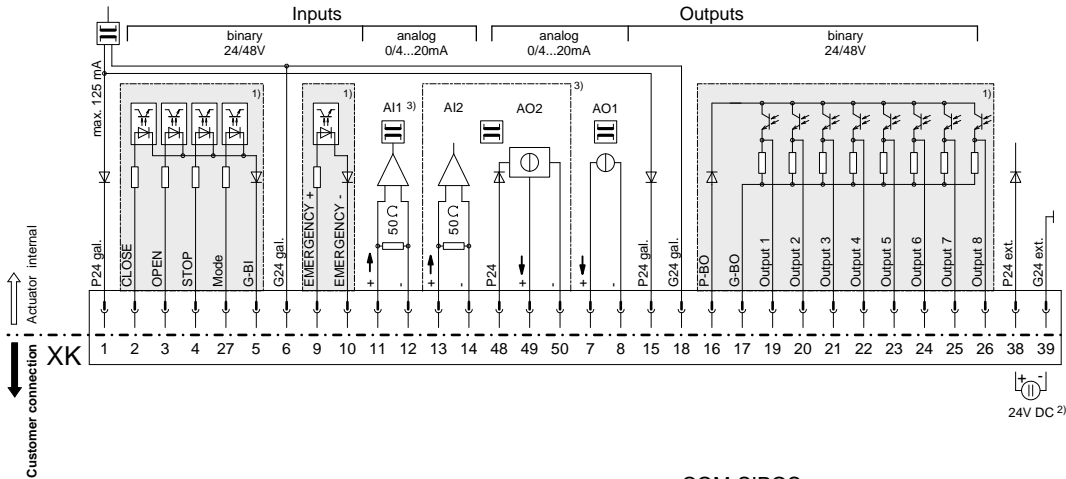
Technical Data

Wiring diagram

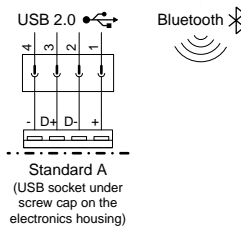
PROFITRON

Y070.247

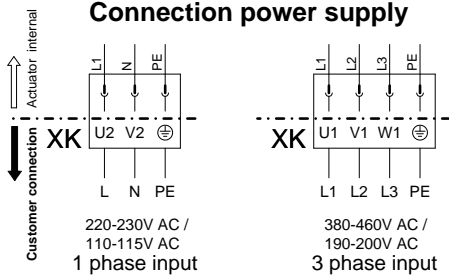
Connection control and feedback signals



COM-SIPOS



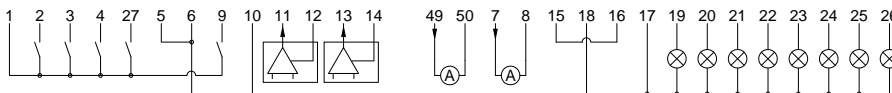
Connection power supply



Customer connection - wiring examples:

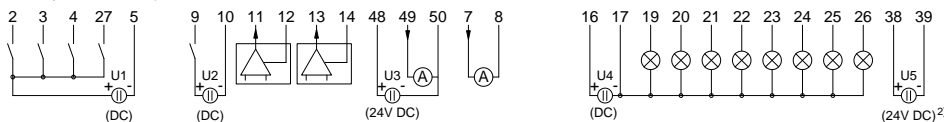
Wiring example I: „internal 24V DC supply“

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

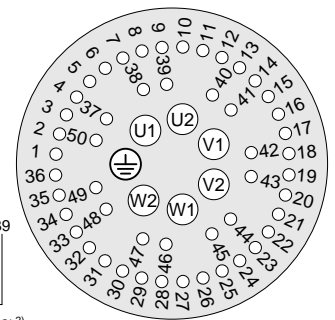


Wiring example II: „external 24/48V DC supplies“

(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 continued to be signalled.
Communication via COM-SIPOS – changes of parameters resp. download of actuator data – is possible.)
- 3) option

Wire cross-section max.:

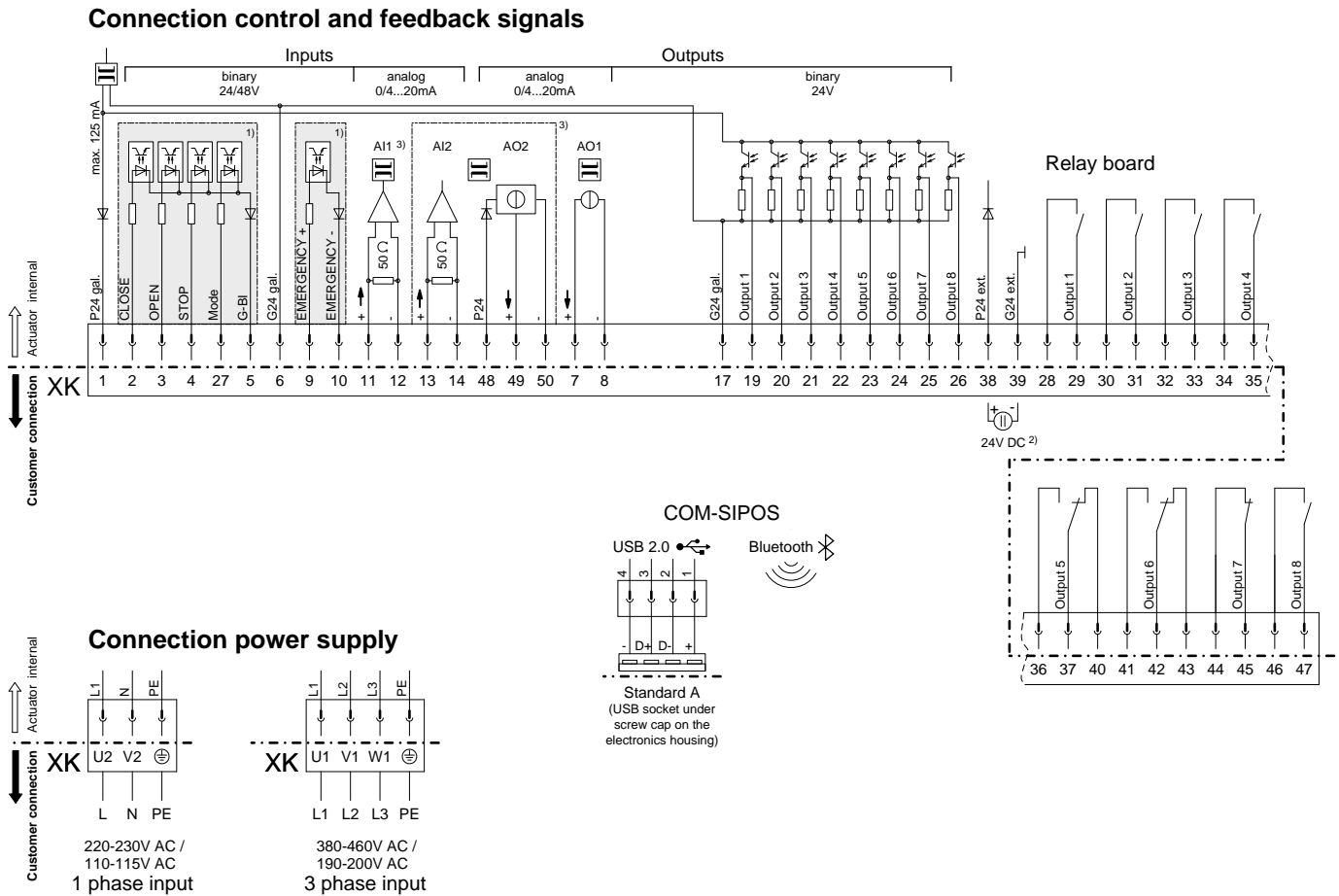
- 6 mm² Power supply
- 2.5 mm² Control and feedback signals

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

Technical Data

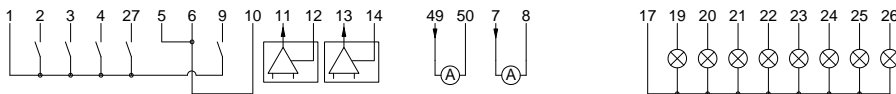
Wiring diagram PROFITRON with relay board

Y070.248

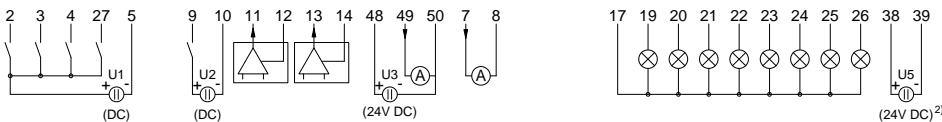


Customer connection - wiring examples:

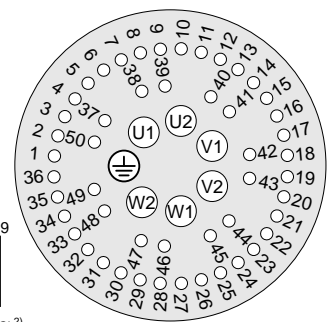
Wiring example I: „internal 24V DC supply“
(here all inputs and outputs are supplied internally from the electronics unit with 24V DC)



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 continued to be signalled.
Communication via COM-SIPOS – changes of parameters resp. download of actuator data – is possible.)
- 3) option

Wire cross-section max.:

- 6 mm² Power supply
- 2.5 mm² Control and feedback signals

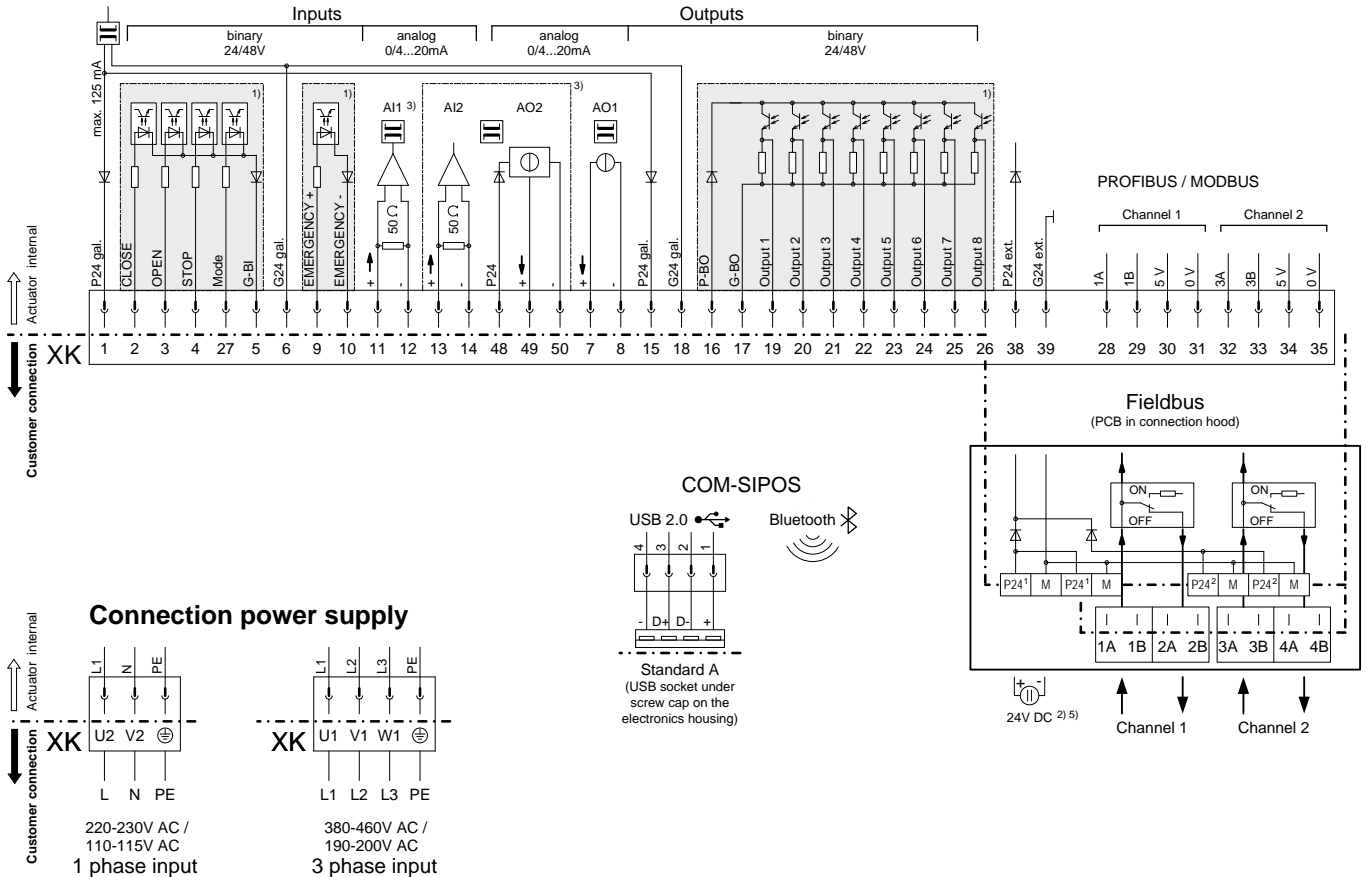
The control/feedback wire **must** be shielded!

Technical Data

Wiring diagram PROFITRON with Fieldbus

Y070.249

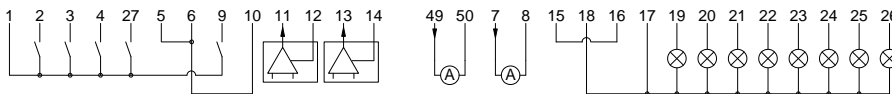
Connection control and feedback signals



Customer connection - wiring examples:

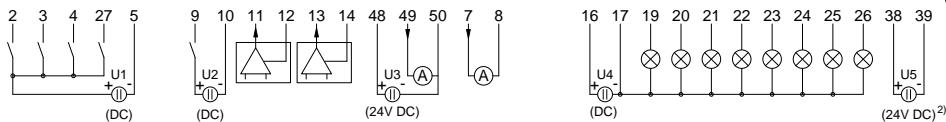
Wiring example I: „internal 24V DC supply“

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

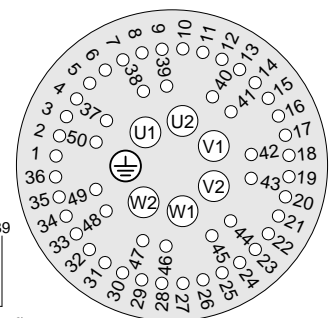


Wiring example II: „external 24/48V DC supplies“

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



Plug assignment XK



- galvanically isolated areas: can be supplied from different sources with 24/48V DC
- 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 continued to be signalled.
Communication via COM-SIPOS or fieldbus – changes of parameters resp. download of actuator data – is possible.)
- option
- up to 4 connectors P24 and M on the fieldbus connection PCB

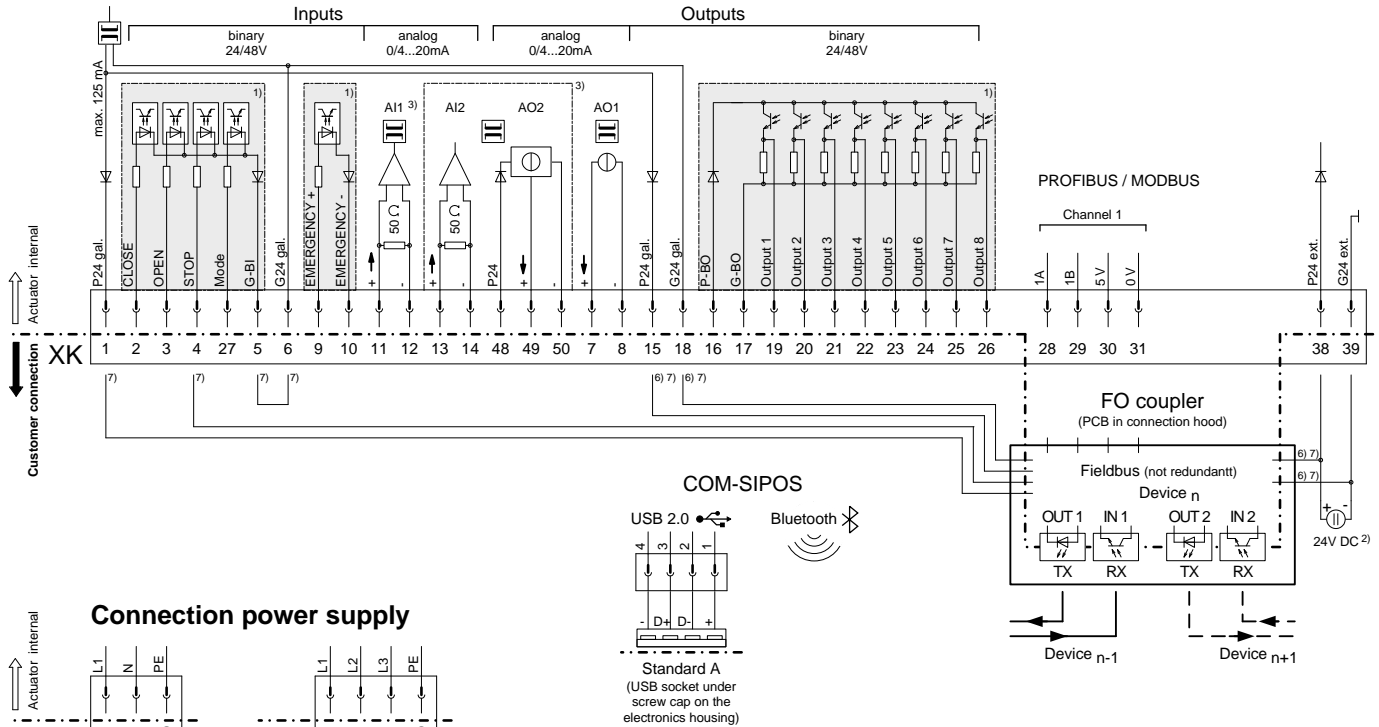
Wire cross-section max.:
 - 6 mm² Power supply
 - 2.5 mm² Control and feedback signals
 The control/feedback wire **must** be shielded!

Technical Data

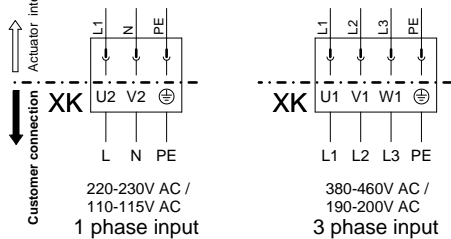
Wiring diagram PROFITRON with Fieldbus and FO

Y070.361

Connection control and feedback signals



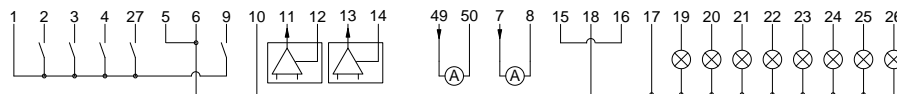
Connection power supply



Customer connection - wiring examples:

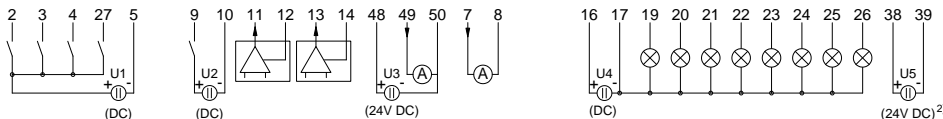
Wiring example I: „internal 24V DC supply“

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

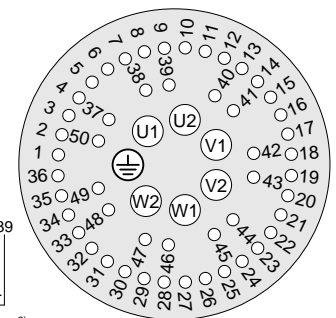


Wiring example II: „external 24/48V DC supplies“

(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 continued 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 mm² Power supply
- 2.5 mm² Control and feedback signals

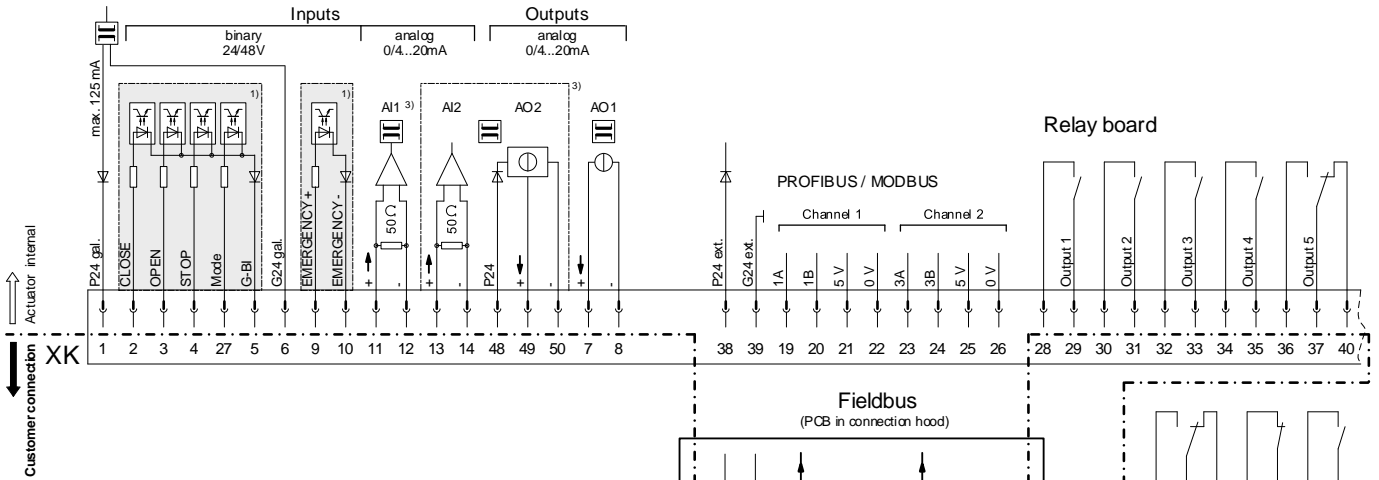
The control/feedback wire **must** be shielded!

Technical Data

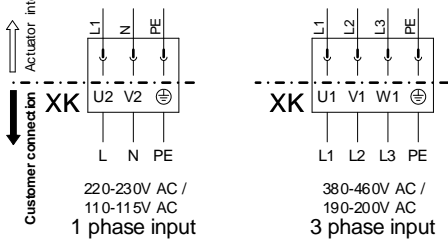
Wiring diagram PROFITRON with Fieldbus and relay board

Y070.469

Connection control and feedback signals

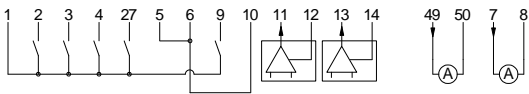


Connection power supply

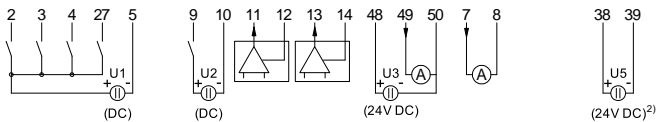


Customer connection - wiring examples:

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

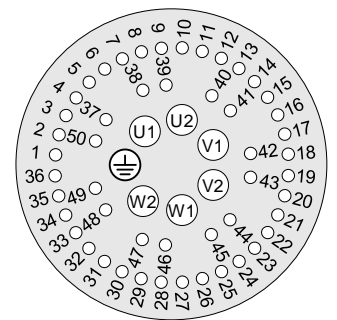


Wiring example II: „external 24/48V DC supplies“
(in this example all galvanically isolated areas are supplied externally from different 24/48V DC power sources)



- 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 continued 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 mm² Power supply
 - 2.5 mm² Control and feedback signals
 The control/feedback wire **must** be shielded!

Technical Data
