

Frese Rotary Actuators

ROL-series

Application

Electric ROL-series actuators are used in connection with OMEGA Compact 3-way Rotary Control Valves and Frese Butterfly Valves to provide simple, accurate and reliable flow regulation for both diverting and mixing and on/off applications in marine, industrial processes and district heating.

Benefits ROL-S type

- Designed for small quarter-turn applications.
- The actuator can automate valves requiring up to 270° rotation.
- Engineered to be lightweight and compact for greater versatility.
- The unique housing design allows various options to be installed without the additional cost of an external enclosure.
- 4-LED lights are located inside the high impact dome indicator. When the actuator reaches the full open or full close position, the dome lights will illuminate and allow added visibility over a greater distance or in low light areas.
- Designed for mounting in any orientation.

Benefits ROL-L type

- Actuator is an engineered products which has been designed for usage of automation of 90° rotary valve or same operating principle equipment
- Internal provisions like as self-locking which prevent reverse action from valve, manual override, and mechanical torque switches (except for 006 & 009) which protect actuator from overload
- Space heater for anti-condensation provide optimum condition for actuator operation
- Actuators have double worm gearing, and the mechanism is fully filled with grease
- There is no leak of lubricant because housing is totally enclosed structure



Features

- Suitable for OMEGA Compact and Frese Butterfly valves sizes from DN50 to DN800
- Rotating torque from 90 Nm to 3000 Nm
- To help protect the components and extend the actuator's life, a 5-watt anti-condensation heater is included as standard
- Included with the end of travel motor switches are two additional dry-contacts for auxiliary indication
- A thermal protector is provided to protect the motor from over heating
- The worm gear drive eliminates the possibility of back drive and the need for motor brakes
- In case of a power loss, the manual over-ride is provided for positioning the valve
- Optional failsafe function with Super Capacitor for the actuator sizes 90 Nm, 150 Nm and 280 Nm

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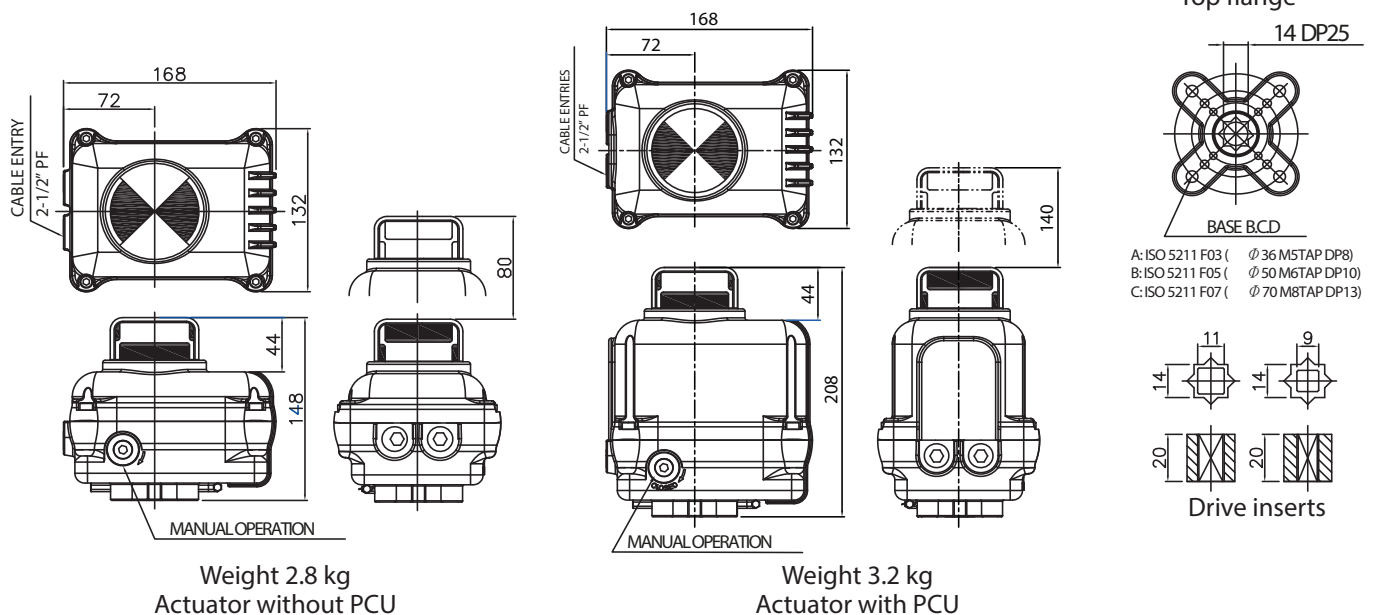
Technical data · ROL-S type

Supply Voltage AC:	See table below
Supply Voltage Frequenz AC:	50/60 Hz
Control:	See table below
With PCU	Proportional Control Unit incl PIU (Potentiometer) 4-20mA, (0)2-10V, 1-5V
Without PCU	2/3 point control
Protection class:	IP 67 to EN 60529 (NEMA 4 & 6)
Ambient operating conditions:	-20°C to 70°C
Cable:	Not included
Cable glands:	2 x M20 x 1.5 (Accessories)
Indicator:	Dome type (LED light inside)
Limit switches:	2 Open/Close + Dry contact 2 Open/Close
Manual operation:	By L-wrench (6mm hexagon)
Space heater:	5 W (110/230 V AC, 24 V DC)
Travel angle:	90° ± 5°
Valve adaption:	Actuator drive is 14x14 Drive inserts for 11x11 and 9x9 are included as standard.



Types and Operation Data

Type	Supply Voltage	Torque [Nm]	Control	Running time 90° 50/(60) [Hz]	Power consumption Class F
58-8940	24 V AC/DC	90 (ROL-S 009)	2/3-point	17/(14)	51 VA/W
58-8941	110-230 V AC				39-56 VA
58-8942	24 V AC/DC		64 VA/W		
58-8943	110-230 V AC		49-66 VA		



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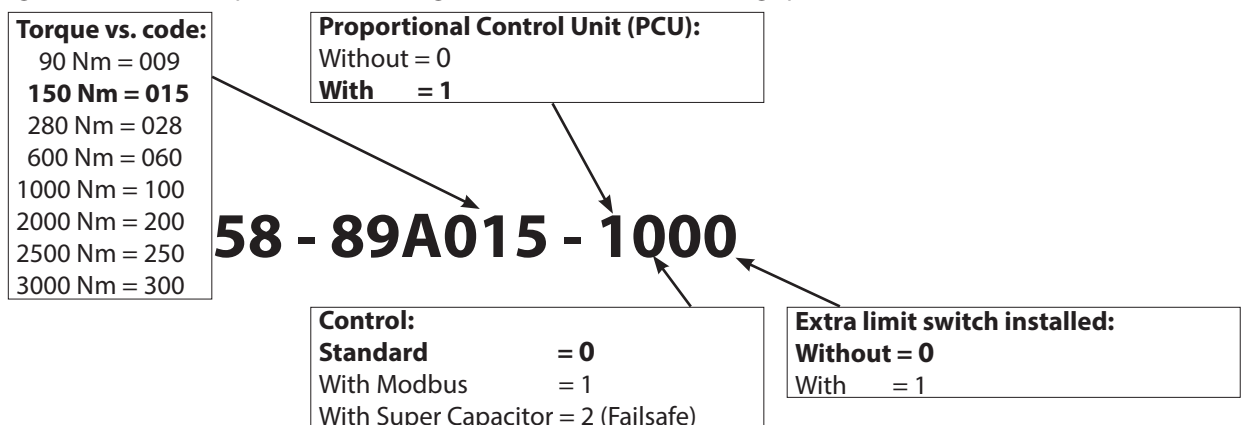
Technical data · ROL-L type

Supply Voltage AC:	230 V AC - 1 phase
Supply Voltage Frequenz AC:	50/60 Hz
Protection class:	IP 67 to EN 60529 (NEMA 4 & 6)
Ambient operating conditions:	-20°C to 70°C (150°C/1hr)
Manual operation:	Manual handle
Cable:	Not included
Cable glands:	2 x M20 x 1.5 (Accessories)
Limit switches:	2 Open / Close
Torque switches:	2 Open / Close
Travel angle:	90° ± 5°
Mechanical stop:	External adjustable screws
Space heater:	20 W
Option	
EXP & IP68:	Explosion Proof, EX d IIB T4 Watertight Enclosure IP68
ALS	Auxiliary Open, Close Limit Switch
PCU:	Proportional Control Unit
Input:	DC 4-20mA, (0)2-10V, 1-5V
Output:	DC 4-20mA
Field-Bus:	Modbus
Failsafe function:	Super Capacitor Available: 90 Nm, 150 Nm, 280 Nm



Part numbers

Frese rotating electric actuators part numbers are generated from the following specifications:



Types and Operation Data

Type	Torque [NM]	Running time 90° 50/(60) [Hz]	Power consumption Class F	Power consumption Class F - Failsafe
58 - 89A009-XXXX	90	17/(14)	129VA (184VA*)	81VA (109VA*)
58 - 89A015-XXXX	150	20/17	173VA (242VA*)	95VA (138VA*)
58 - 89A028-XXXX	280	20/(17)	173VA(299VA*)	249VA (527VA*)
58 - 89A060-XXXX	600	29/(24)	276VA (529VA*)	
58 - 89A100-XXXX	1000	29/(24)	460VA (759VA*)	
58 - 89A200-XXXX	2000	87/(72)	460VA (759VA*)	
58 - 89A250-XXXX	2500	87/72	460VA (759VA*)	
58 - 89A300-XXXX	3000	116/(96)	460VA (759VA*)	

*) For transformer sizing

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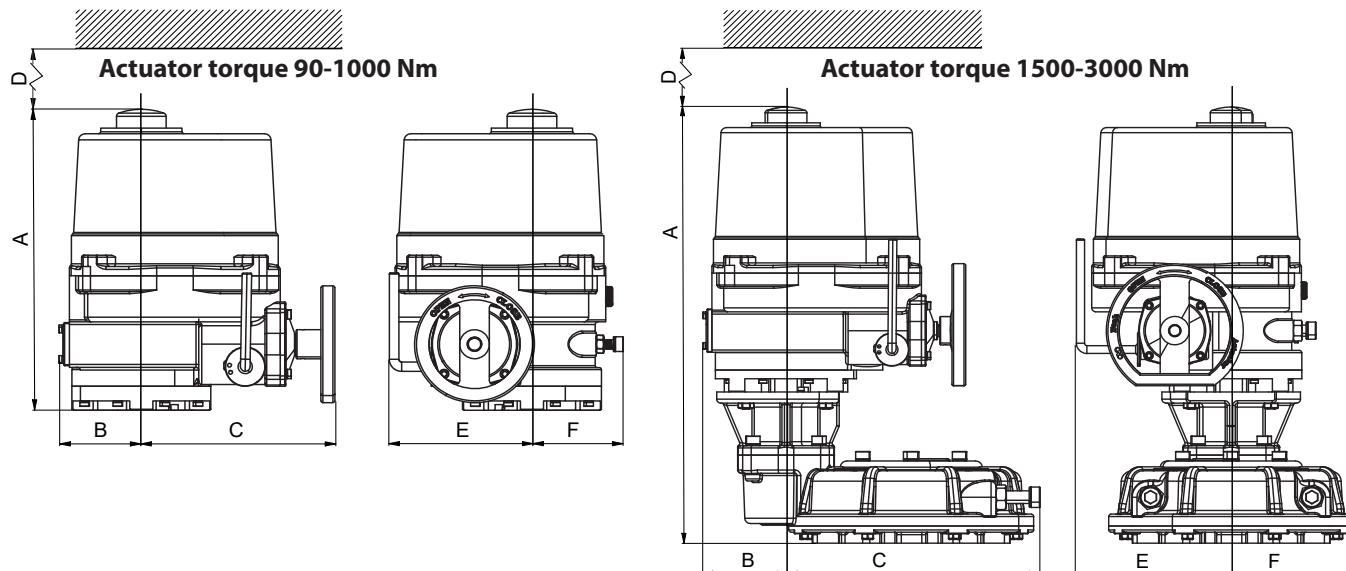
Accessories

Product	Dimension	Suitable cable type diameter [mm]	Type	Item number
Cable gland	M20 x 1,5	8 - 15	With lock nut, IP 69	07-21381

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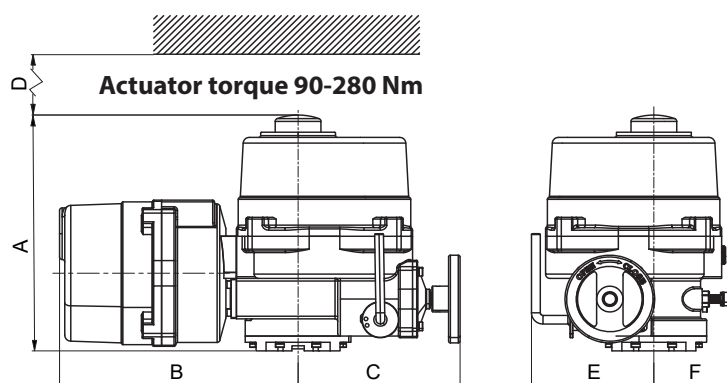
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Dimension & Weight standard actuators



Type	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	Weight [kg]
58 - 89A009-XXXX	270	55	174	108	120	68	9
58 - 89A015-XXXX	274	70	184	108	139	85	11.5
58 - 89A028-XXXX	274	70	184	108	139	85	11.5
58 - 89A060-XXXX	362	92	223	178	192	105	24
58 - 89A100-XXXX	362	92	223	178	192	105	24
58 - 89A200-XXXX	554	92	315	178	192	152	60
58 - 89A250-XXXX	554	92	315	178	192	152	60
58 - 89A300-XXXX	554	92	315	178	192	152	60

Dimension & Weight Super Capacitor actuators



Type	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	Weight [kg]
58 - 89A009-XXXX	270	250	174	108	120	68	13.5
58 - 89A015-XXXX	274	271	184	108	139	85	16
58 - 89A028-XXXX	322	276,5	203	130	149	95	18.5

Frese Rotary Actuators

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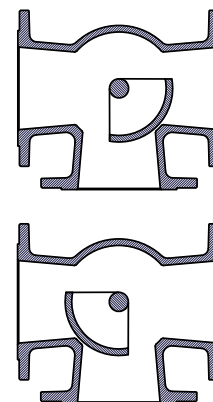
Actuator selection for OMEGA Compact

Leakguard series · C-left & C-right

Frese Rotary Actuators ROL-series can be selected from the matrix below.

Torque and relating actuator code:

90 Nm = 009
150 Nm = 015
280 Nm = 028
600 Nm = 060
1000 Nm = 100
2000 Nm = 200
2500 Nm = 250
3000 Nm = 300



Adapters

Adapter code	Type	Actuator type ROL-L	Actuator bushing	
			Actuator square from	Actuator square to
1	58-89A000-A	015	19	15
2	58-89A000-B	028	27	19
3	58-89A000-C	060	27	32
4	58-89A000-D	100	32	27
5	58-89A000-E	200	46	32

Actuator / (Adapter) Codes in relation to differential pressure across the valve

Valve size	$\Delta P \leq 5\text{bar}$	$\Delta P \leq 10\text{bar}$	$\Delta P \leq 16\text{bar}$	$\Delta P \leq 25\text{bar}$
DN65	ROL-L 009	ROL-L 009	ROL-L 009	ROL-L 009
DN80	ROL-L 009	ROL-L 009	ROL-L 009	ROL-L 009
DN100	ROL-L 009	ROL-L 009	ROL-L 009	ROL-L 015 / (1)
DN125	ROL-L 015	ROL-L 015	ROL-L 015	ROL-L 028 / (2)
DN150	ROL-L 015	ROL-L 015	ROL-L 028 / (2)	
DN200	ROL-L 028	ROL-L 028	ROL-L 060	
DN250	ROL-L 028	ROL-L 060	ROL-L 060	
DN300	ROL-L 060	ROL-L 060	ROL-L 100 / (4)	
DN350	ROL-L 100	ROL-L 200 / (5)		
DN400	ROL-L 100	ROL-L 200 / (5)		
DN450	ROL-L 100	ROL-L 200		
DN500	ROL-L 200	ROL-L 200		
DN550	ROL-L 200	ROL-L 200		
DN600	ROL-L 200	ROL-L 250		
DN650	ROL-L 200	ROL-L 250		
DN700	ROL-L 250			
DN800	ROL-L 300			

Frese Rotary Actuators

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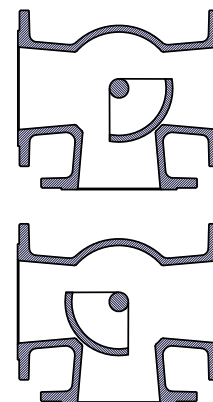
Actuator selection for OMEGA Compact

Standard series · C-left & C-right

Frese Rotary Actuators ROL-series can be selected from the matrix below.

Torque and relating actuator code:

90 Nm = 009
150 Nm = 015
280 Nm = 028
600 Nm = 060
1000 Nm = 100
2000 Nm = 200
2500 Nm = 250
3000 Nm = 300



Adapters

Adapter code	Type	Actuator type ROL-L	Actuator bushing	
			Actuator square from	Actuator square to
1	58-89A000-A	015	19	15
2	58-89A000-B	028	27	19
3	58-89A000-C	060	27	32
4	58-89A000-D	100	32	27
5	58-89A000-E	200	46	32

Actuator / (Adapter) Codes in relation to differential pressure across the valve

Valve size	$\Delta P \leq 5\text{bar}$	$\Delta P \leq 10\text{bar}$	$\Delta P \leq 16\text{bar}$	$\Delta P \leq 25\text{bar}$
DN65	ROL-L 009	ROL-L 009	ROL-L 009	ROL-L 009
DN80	ROL-L 009	ROL-L 009	ROL-L 009	ROL-L 009
DN100	ROL-L 009	ROL-L 009	ROL-L 009	ROL-L 009
DN125	ROL-L 015	ROL-L 015	ROL-L 015	ROL-L 015
DN150	ROL-L 015	ROL-L 015	ROL-L 015	
DN200	ROL-L 028	ROL-L 028	ROL-L 028	
DN250	ROL-L 028	ROL-L 028	ROL-L 060	
DN300	ROL-L 028	ROL-L 060	ROL-L 060	
DN350	ROL-L 060 / (3)	ROL-L 100		
DN400	ROL-L 100	ROL-L 200 / (5)		
DN450	ROL-L 100	ROL-L 200		
DN500	ROL-L 200	ROL-L 200		
DN550	ROL-L 200	ROL-L 200		
DN600	ROL-L 200	ROL-L 250		
DN650	ROL-L 200	ROL-L 250		
DN700	ROL-L 250			
DN800	ROL-L 300			

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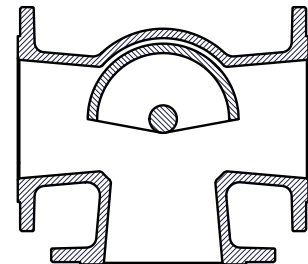
Actuator selection for OMEGA Compact

Leakguard series · C-Middle

Frese Rotary Actuators ROL-series can be selected from the matrix below.

Torque and relating actuator code:

90 Nm = 009
150 Nm = 015
280 Nm = 028
600 Nm = 060
1000 Nm = 100
2000 Nm = 200
2500 Nm = 250
3000 Nm = 300



Adapters

Adapter code	Type	Actuator type ROL-L	Actuator bushing	
			Actuator square from	Actuator square to
1	58-89A000-A	015	19	15
2	58-89A000-B	028	27	19
3	58-89A000-C	060	27	32
4	58-89A000-D	100	32	27
5	58-89A000-E	200	46	32

Actuator / (Adapter) Codes in relation to differential pressure across the valve

Valve size	$\Delta P \leq 5\text{bar}$	$\Delta P \leq 10\text{bar}$	$\Delta P \leq 16\text{bar}$	$\Delta P \leq 25\text{bar}$
DN65	ROL-L 009	ROL-L 009	ROL-L 009	ROL-L 009
DN80	ROL-L 009	ROL-L 009	ROL-L 009	ROL-L 009
DN100	ROL-L 009	ROL-L 009	ROL-L 015	ROL-L 015
DN125	ROL-L 015	ROL-L 015	ROL-L 028 / (2)	ROL-L 028 / (2)
DN150	ROL-L 028 / (2)	ROL-L 028 / (2)	ROL-L 028 / (2)	
DN200	ROL-L 028	ROL-L 060	ROL-L 060	
DN250	ROL-L 060	ROL-L 060	ROL-L 100 / (4)	
DN300	ROL-L 100 / (4)	ROL-L 100 / (4)	ROL-L 100 / (4)	
DN350	ROL-L 200 / (5)	ROL-L 200 / (5)		
DN400	ROL-L 200 / (5)	ROL-L 200 / (5)		
DN450	ROL-L 200			
DN500	ROL-L 200			
DN550				
DN600				
DN650				
DN700				
DN800				

Frese Rotary Actuators

ROL-series

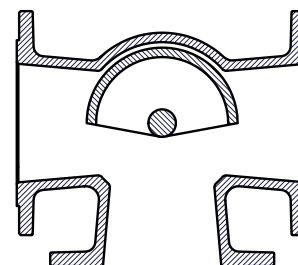
Actuator selection for OMEGA Compact

Standard series · C-Middle

Frese Rotary Actuators ROL-series can be selected from the matrix below.

Torque and relating actuator code:

90 Nm = 009
150 Nm = 015
280 Nm = 028
600 Nm = 060
1000 Nm = 100
2000 Nm = 200
2500 Nm = 250
3000 Nm = 300



Adapters

Adapter code	Type	Actuator type ROL-L	Actuator bushing	
			Actuator square from	Actuator square to
1	58-89A000-A	015	19	15
2	58-89A000-B	028	27	19
3	58-89A000-C	060	27	32
4	58-89A000-D	100	32	27
5	58-89A000-E	200	46	32

Actuator / (Adapter) Codes in relation to differential pressure across the valve

Valve size	$\Delta P \leq 5\text{bar}$	$\Delta P \leq 10\text{bar}$	$\Delta P \leq 16\text{bar}$	$\Delta P \leq 25\text{bar}$
DN65	ROL-L 009	ROL-L 009	ROL-L 009	ROL-L 009
DN80	ROL-L 009	ROL-L 009	ROL-L 009	ROL-L 009
DN100	ROL-L 009	ROL-L 009	ROL-L 009	ROL-L 009
DN125	ROL-L 015	ROL-L 015	ROL-L 015	ROL-L 015
DN150	ROL-L 015	ROL-L 015	ROL-L 015	
DN200	ROL-L 028	ROL-L 028	ROL-L 028	
DN250	ROL-L 028	ROL-L 028	ROL-L 060	
DN300	ROL-L 060	ROL-L 060	ROL-L 060	
DN350	ROL-L 060 / (3)	ROL-L 100		
DN400	ROL-L 100	ROL-L 200 / (5)		
DN450	ROL-L 200			
DN500	ROL-L 200			
DN550				
DN600				
DN650				
DN700				
DN800				

Frese Rotary Actuators

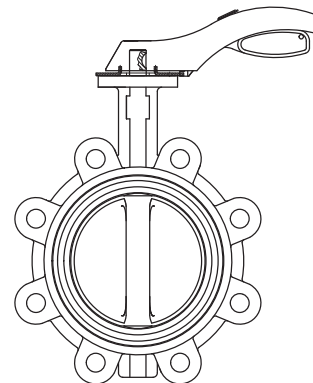
ROL-series

Actuator selection for Frese Butterfly valves

Frese Rotary Actuators ROL-series can be selected from the matrix below.

Torque and relating actuator code:

90 Nm = 009
150 Nm = 015
280 Nm = 028
600 Nm = 060
1000 Nm = 100
2000 Nm = 200
2500 Nm = 250
3000 Nm = 300



Adapters

Adapter code	Type	Actuator type ROL-L	Bushing square from	Bushing square to
11	58-89A000-F	015	19	14
12	58-89A000-G	015	19	17
13	58-89A000-H	028	27	17
14	58-89A000-J	028	27	22
15	58-89A000-K	060	27	22

Adapter code	Type	Actuator type ROL-L	Bushing square from	Bushing Key to
20	58-89A000-P	060-100	27	Ø 31.7
21	58-89A000-Q	100	27	Ø 33.2
22	58-89A000-R	200	46	Ø 38
23	58-89A000-S	200	46	Ø 41.2
24	58-89A000-T	250-300	65	Ø 50.7

Adapter code	Type	Actuator type ROL-L	Actuator Base BCD from	Actuator Base BCD to
30	58-89A000-M	060	F14 - F12	F14 - F10

Actuator / (Adapter) Codes in relation to differential pressure across the valve

Valve size	$\Delta P \leq 5 \text{ bar}$	$\Delta P \leq 10 \text{ bar}$	$\Delta P \leq 16 \text{ bar}$
DN50	ROL-S 009	ROL-S 009	ROL-S 009
DN65	ROL-S 009	ROL-S 009	ROL-S 009
DN80	ROL-S 009	ROL-S 009	ROL-S 009
DN100	ROL-S 009	ROL-S 009	ROL-S 009
DN125	ROL-S 009	ROL-S 009*	ROL-S 009*
DN150	ROL-S 009	ROL-S 009*	ROL-L015 / (11)
DN200	ROL-L015 / (12)	ROL-L028 / (13)	ROL-L028 / (13)
DN250	ROL-L028 / (14)	ROL-L060 / (15) & (30)	ROL-L060 / (15) & (30)
DN300	ROL-L060 / (15)	ROL-L060 / (15)	ROL-L060 / (15)
DN350	ROL-L060 (20)	ROL-L100 (20)	ROL-L100 (20)
DN400	ROL-L100 (21)	ROL-L100 (21)	NA
DN450	ROL-L200 (22)	ROL-L200 (22)	
DN500	ROL-L200 (23)	ROL-L200 (23)	
DN600	ROL-L250 (24)	ROL-L300 (24)	ROL-L300 (24)

*) Not recommended for 24 V AC

Frese Rotary Actuators

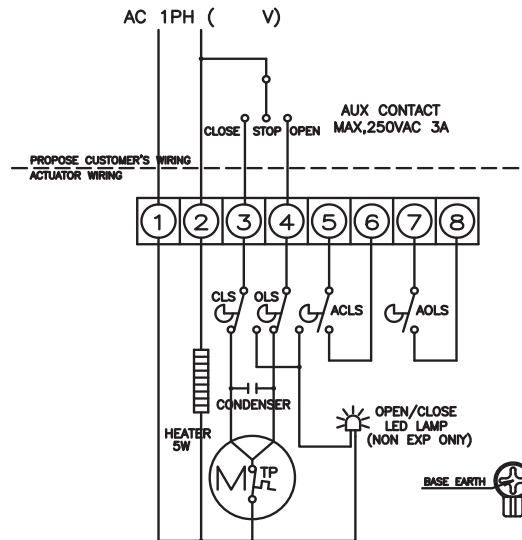
ROL-series

Electric wiring ROL-S type
90 Nm (Actuator Code 009)

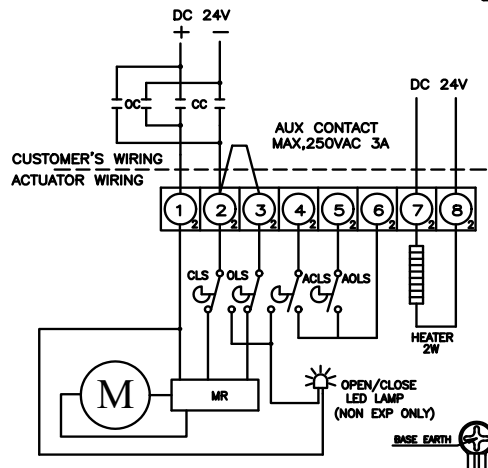
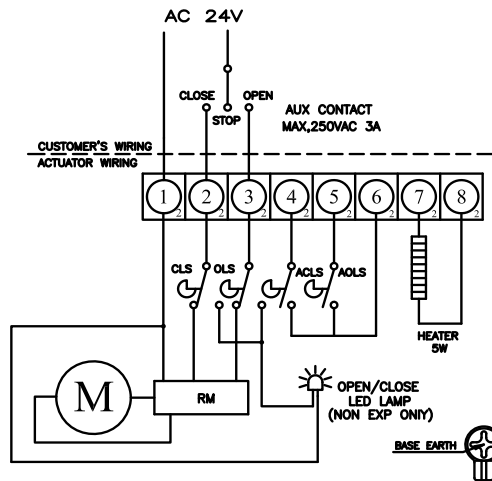
CLS : Close Limit Switch (250VAC 3A)
 OLS : Open Limit Switch (250VAC 3A)
 ACLS : Aux Close Limit Switch (250VAC 3A)
 AOLS : Aux Open Limit Switch (250VAC 3A)
 TP : Thermal Protector
 RM : Motor Regulation

**For wiring on ROL-L
please see IOM manual**

Type 58-8941



Type 58-8940



Frese Rotary Actuators

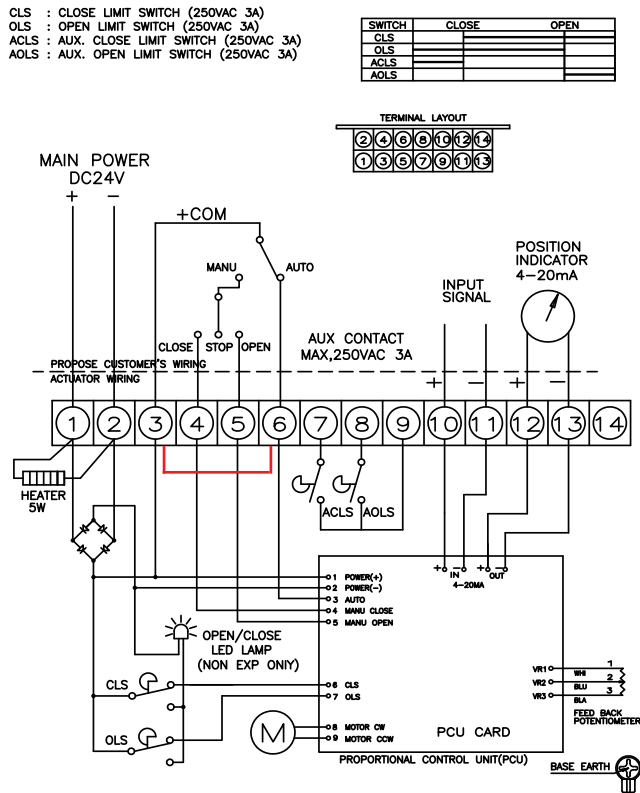
ROL-series

Electric wiring ROL-S type with PCU
90 Nm (Actuator Code 009)

Type 58-8942



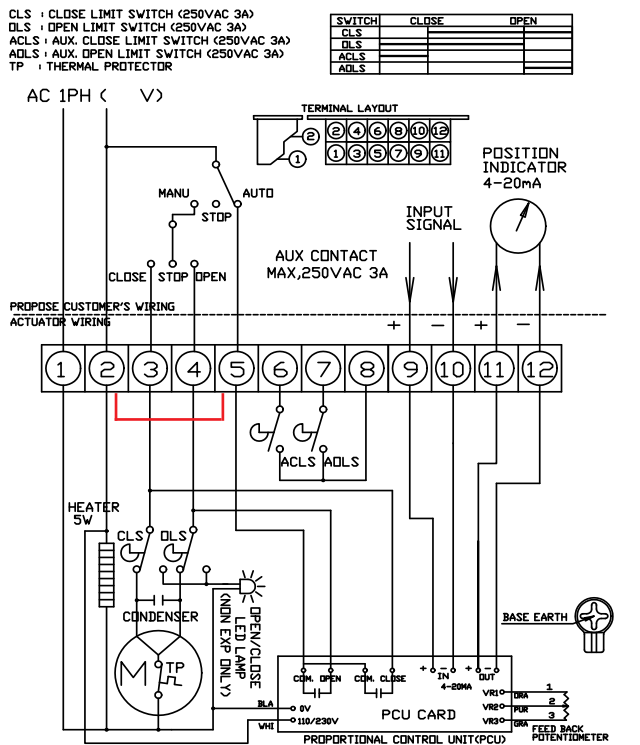
To enable 4-20mA control signal on INPUT terminals:
Connect terminal 3 to 6 using a jumper.



Type 58-8943



To enable 4-20mA control signal on INPUT terminals:
Connect terminal 2 to 5 using a jumper.



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Frese A/S
Tel: +45 58 56 00 00
info@frese.dk