



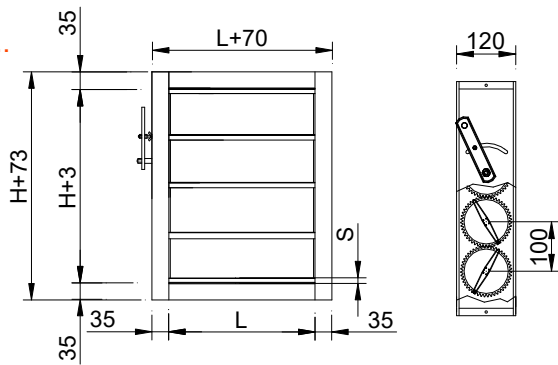
SQR compuertas de regulación para conducto rectangular

M A D E L®

Las compuertas de la serie **SQR** han sido diseñadas para su utilización en la regulación del caudal y de la presión, en instalaciones de aire acondicionado, ventilación y calefacción.

Aletas opuestas de 100mm.

SQR-...



H	S
100...1000	10
150...950	50

CLASIFICACIÓN

SQR-EH Compuerta de aletas de perfil romboidal, paralelas al lado mayor (cota L).

SQR-EV Compuerta de aletas de perfil romboidal, paralelas al lado menor (cota H).

SQR-CC Compuerta cuadrada de aletas de perfil romboidal y conexiones circulares.

.../MA/ Compuerta con mando manual.

.../MO/ Compuerta con eje para motorizar.

MATERIAL

Marco de aluminio extruído en forma de "U".

Lamas de forma aerodinámica de aluminio extruído con una junta de goma en los bordes.

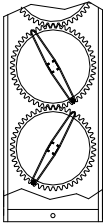
Eje de acero galvanizado.

Placa de protección del sistema de transmisión en acero galvanizado.

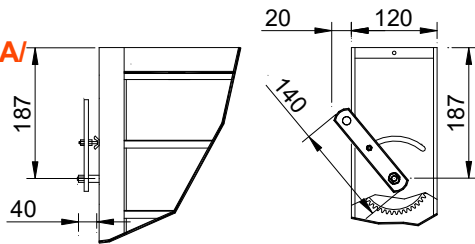
Casquillos de acetal de alta resistencia.

Transmisión por engranajes de poliamida-6, situados en la parte exterior de la compuerta, para evitar suciedad en la transmisión.

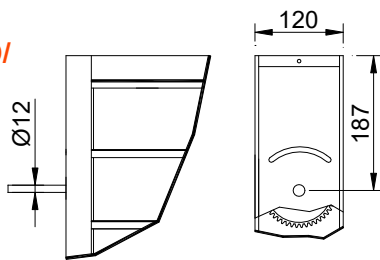
SQR-...



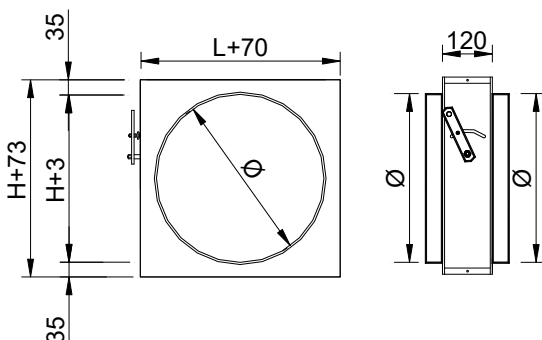
SQR-.../MA/



SQR-.../MO/



SQR-CC



SIEMENS



BELIMO



ON/OFF actuators

GSD141.1A-24v Siemens actuator On/Off 2N
 GSD141.1A-230v Siemens actuator On/Off 2N
 GDB141.1E-24v Siemens actuator On/Off 5N
 GDB141.1E-230v Siemens actuator On/Off 5N
 GLB141.1E-24v Siemens actuator On/Off 10N
 GLB341.1E-230v Siemens actuator On/Off 10N
 GEB141.1E-24v Siemens actuator On/Off 20N
 GEB341.1E-230v Siemens actuator On/Off 20N
 LM24A Belimo actuator On/Off 5N
 LM230A Belimo actuator On/Off 5N
 NM24A Belimo actuator On/Off 10N
 NM230A Belimo actuator On/Off 10N

ON/OFF actuators with switches device

GDB146.1E-24v Siemens actuator On/Off 5N, 2FC
 GDB346.1E-230v Siemens actuator On/Off 5N, 2FC
 GLB146.1E-24v Siemens actuator On/Off 10N, 2FC
 GLB346.1E-230v Siemens actuator On/Off 10N, 2FC
 GEB146.1E-24v Siemens actuator On/Off 15N, 2FC
 GEB346.1E-230v Siemens actuator On/Off 15N, 2FC
 LM24A-S Belimo actuator On/Off 5N, 1FC (*)
 LM230A-S Belimo actuator On/Off 5N, 1FC (*)
 NM24A-S Belimo actuator On/Off 10N, 1FC (*)
 NM230A-S Belimo actuator On/Off 10N, 1FC (*)
 * Belimo actuator with end of course switch for 2 contacts.

ON/OFF actuators with spring return

GPC121.1A-24v Siemens actuator On/Off 4N
 GPC321.1A-230v Siemens actuator On/Off 4N
 GMA121.1E-24v Siemens actuator On/Off 7N
 GMA321.1E-230v Siemens actuator On/Off 7N
 LF-24 Belimo actuator On/Off 4N
 LF-230 Belimo actuator On/Off 4N
 NFA Belimo actuator On/Off 24-230 VAC, 10N

ON/OFF act. with spring return and switches

GPC126.1A-24v Siemens actuator On/Off 4N
 GPC326.1A-230v Siemens actuator On/Off 4N
 GMA126.1E-24v Siemens actuator On/Off 7N
 GMA326.1E-230v Siemens actuator On/Off 4N
 LF-24-S Belimo actuator On/Off 4N
 LF-230-S Belimo actuator On/Off 4N
 NFA-S2 Belimo actuator On/Off 24-230 VAC, 10N

Proportional actuators

GDB161.1E-24v Siemens actuator proportional 5N
 GLB161.1E-24v Siemens actuator proportional 10N
 GEB161.1E-24v Siemens actuator proportional 15N
 LM24A-SR Belimo actuator proportional 5N
 LM230A-SR Belimo actuator proportional 5N
 NM24A-SR Belimo actuator proportional 10N
 NM230A-SR Belimo actuator proportional 10N

Proportional actuators with MODBUS

GDB111.1E/MO-24v Siemens actuator proportional 5N
 GLB111.1E/MO-24v Siemens actuator proportional 10N
 LM24A-MOD Belimo actuator proportional 5N
 NM24A-MOD Belimo actuator proportional 10N

SELECCIÓN DE POTENCIA DE SERVOMOTORES

Nota: Las compuertas /MO/ se suministran con el servomotor acoplado en fábrica.

L x H mm	actuador N	L x H mm	actuador N	L x H mm	actuador N
200x100	5 N	700x250	5 N	700x600	5 N
300x100	5 N	800x250	5 N	800x600	5 N
400x100	5 N	900x250	5 N	900x600	5 N
500x100	5 N	1000x250	5 N	1000x600	5 N
600x100	5 N	1200x250	5 N	1200x600	5 N
700x100	5 N	1400x250	5 N	1400x600	10 N
800x100	5 N	1600x250	5 N	1600x600	10 N
900x100	5 N	1800x250	5 N	1800x600	10 N
1000x100	5 N	2000x250	5 N	2000x600	10 N
1200x100	5 N	300x300	5 N	700x700	5 N
1400x100	5 N	400x300	5 N	800x700	5 N
1600x100	5 N	500x300	5 N	900x700	5 N
1800x100	5 N	600x300	5 N	1000x700	5 N
2000x100	5 N	700x300	5 N	1200x700	5 N
200x150	5 N	800x300	5 N	1400x700	10 N
300x150	5 N	900x300	5 N	1600x700	10 N
400x150	5 N	1000x300	5 N	1800x700	10 N
500x150	5 N	1200x300	5 N	2000x700	10 N
600x150	5 N	1400x300	5 N	800x800	5 N
700x150	5 N	1600x300	5 N	900x800	5 N
800x150	5 N	1800x300	5 N	1000x800	10 N
900x150	5 N	2000x300	5 N	1200x800	10 N
1000x150	5 N	400x400	5 N	1400x800	10 N
1200x150	5 N	500x400	5 N	1600x800	10 N
1400x150	5 N	600x400	5 N	1800x800	15 N
1600x150	5 N	700x400	5 N	2000x800	15 N
1800x150	5 N	800x400	5 N	900x900	10 N
2000x150	5 N	900x400	5 N	1000x900	10 N
200x200	5 N	1000x400	5 N	1200x900	10 N
300x200	5 N	1200x400	5 N	1400x900	10 N
400x200	5 N	1400x400	5 N	1600x900	15 N
500x200	5 N	1600x400	5 N	1800x900	15 N
600x200	5 N	1800x400	5 N	2000x900	15 N
700x200	5 N	2000x400	5 N	1000x1000	10 N
800x200	5 N	500x500	5 N	1200x1000	10 N
900x200	5 N	600x500	5 N	1400x1000	10 N
1000x200	5 N	700x500	5 N	1600x1000	15 N
1200x200	5 N	800x500	5 N	1800x1000	15 N
1400x200	5 N	900x500	5 N	2000x1000	15 N
1600x200	5 N	1000x500	5 N		
1800x200	5 N	1200x500	5 N	CC	actuador
2000x200	5 N	1400x500	5 N	mm	N
300x250	5 N	1600x500	10 N	400	5 N
400x250	5 N	1800x500	10 N	450	5 N
500x250	5 N	2000x500	10 N	500	5 N
600x250	5 N	600x600	5 N	630	5 N

TF



TF-RC



**CO2-WP
CO2-WR**



RDG 400



CO2-D



OS-360



ACCESORIOS DE CONTROL

TF Termostato con cables, de cambio de modo frío/calor manual, para el control de la temperatura de 1 zona con compuertas con servomotor On/Off.

TF-RC Termostato vía radio, cambio modo frío/calor manual para control de temperatura de 1 zona con compuertas con actuador Todo/Nada.

RDG 400 Controlador de temperatura ambiente proporcional Siemens, 0 ... 10 vcc aliment. 24VAC con display digital retroiluminado, selector confort / eco / parada, para servomotores de compuertas proporcionales.

CO2-WP Sonda / control de ambiente 24 vdc-vac. Visualización de lectura mediante LED. Salidas 0-10Vdc. Setpoint 600-800 -1000 ppm (Sondas de CO2 proporcionales, requieren servomotor proporcional)

CO2-D Sonda para conducto 24 vdc-vac con una salida 0-10Vdc, IP54 (Sondas de CO2 proporcionales, requieren servomotor proporcional)

CO2-WR Sonda ambiente de pared 24 vdc-vac. Visualización de lectura LED. Salida digital (relé 5A) Setpoint 800 - 1000 -1200 (sondas de CO2 con relé, requieren servomotor ON / OFF)

OS-360 Sensor de presencia por movimiento omnidireccional para techo, para el control de elementos terminales HVAC. Alimentación 24 Vac / Vdc. Salida de contacto conmutado parametrizable.

ACCESORIOS DE MONTAJE

FC Kit free-cooling para montar dos compuertas a 90°.

SISTEMES DE FIJACIÓN

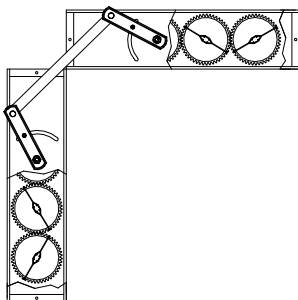
1) Cuello de conexión en ángulo a 90°.

CR Cuello de conexión recto.

TEXTO DE PRESCRIPCIÓN

Sum. y col. de compuerta de regulación de caudal para conducto rectangular y con mando manual serie **SQR-H/MA/ LxH**. Construidas en aluminio acabado natural y engranajes de poliamida. Con elementos necesarios para montaje. Marca **MADEL**.

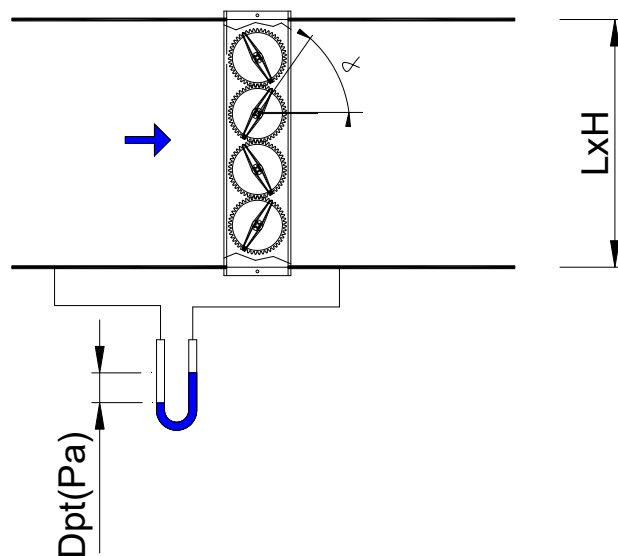
FC



SQR SERIES

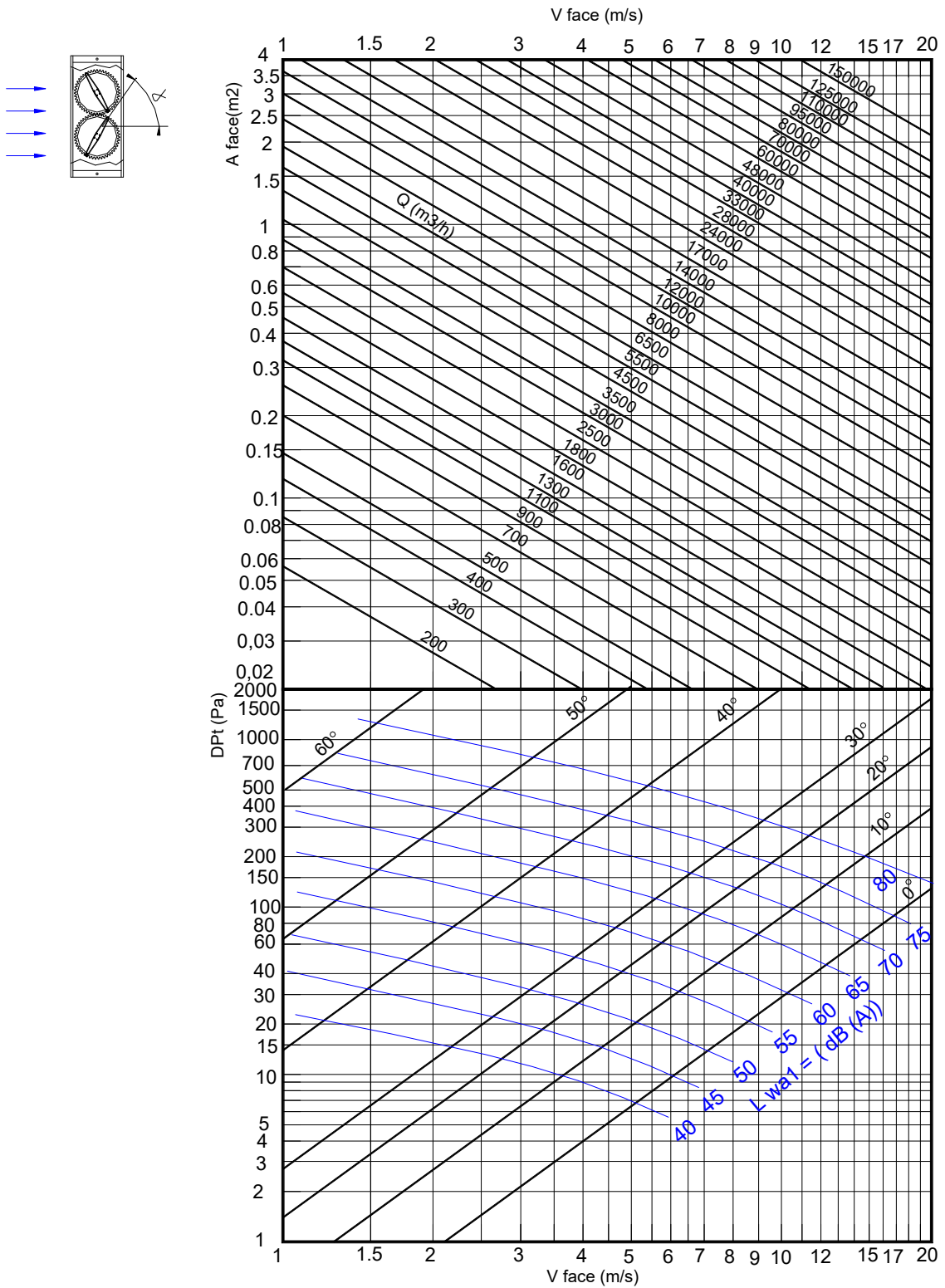
L x H [m²] (A face)

H [mm]	L [mm]											
	100	200	300	400	500	600	700	800	900	1000	1100	1200
100	0,010	0,020	0,030	0,040	0,050	0,060	0,070	0,080	0,090	0,100	0,110	0,120
150	0,015	0,030	0,045	0,060	0,075	0,090	0,105	0,120	0,135	0,150	0,165	0,180
200	0,020	0,040	0,060	0,080	0,100	0,120	0,140	0,160	0,180	0,200	0,220	0,240
250	0,025	0,050	0,075	0,100	0,125	0,150	0,175	0,200	0,225	0,250	0,275	0,300
300	0,030	0,060	0,090	0,120	0,150	0,180	0,210	0,240	0,270	0,300	0,330	0,360
350	0,035	0,070	0,105	0,140	0,175	0,210	0,245	0,280	0,315	0,350	0,385	0,420
400	0,040	0,080	0,120	0,160	0,200	0,240	0,280	0,320	0,360	0,400	0,440	0,480
450	0,045	0,090	0,135	0,180	0,225	0,270	0,315	0,360	0,405	0,450	0,495	0,540
500	0,050	0,100	0,150	0,200	0,250	0,300	0,350	0,400	0,450	0,500	0,550	0,600
550	0,055	0,110	0,165	0,220	0,275	0,330	0,385	0,440	0,495	0,550	0,605	0,660
600	0,060	0,120	0,180	0,240	0,300	0,360	0,420	0,480	0,540	0,600	0,660	0,720
650	0,065	0,130	0,195	0,260	0,325	0,390	0,455	0,520	0,585	0,650	0,715	0,780
700	0,070	0,140	0,210	0,280	0,350	0,420	0,490	0,560	0,630	0,700	0,770	0,840
750	0,075	0,150	0,225	0,300	0,375	0,450	0,525	0,600	0,675	0,750	0,825	0,900
800	0,080	0,160	0,240	0,320	0,400	0,480	0,560	0,640	0,720	0,800	0,880	0,960
850	0,085	0,170	0,255	0,340	0,425	0,510	0,595	0,680	0,765	0,850	0,935	1,020
900	0,090	0,180	0,270	0,360	0,450	0,540	0,630	0,720	0,810	0,900	0,990	1,080
950	0,095	0,190	0,285	0,380	0,475	0,570	0,665	0,760	0,855	0,950	1,045	1,140
1000	0,100	0,200	0,300	0,400	0,500	0,600	0,700	0,800	0,900	1,000	1,100	1,200



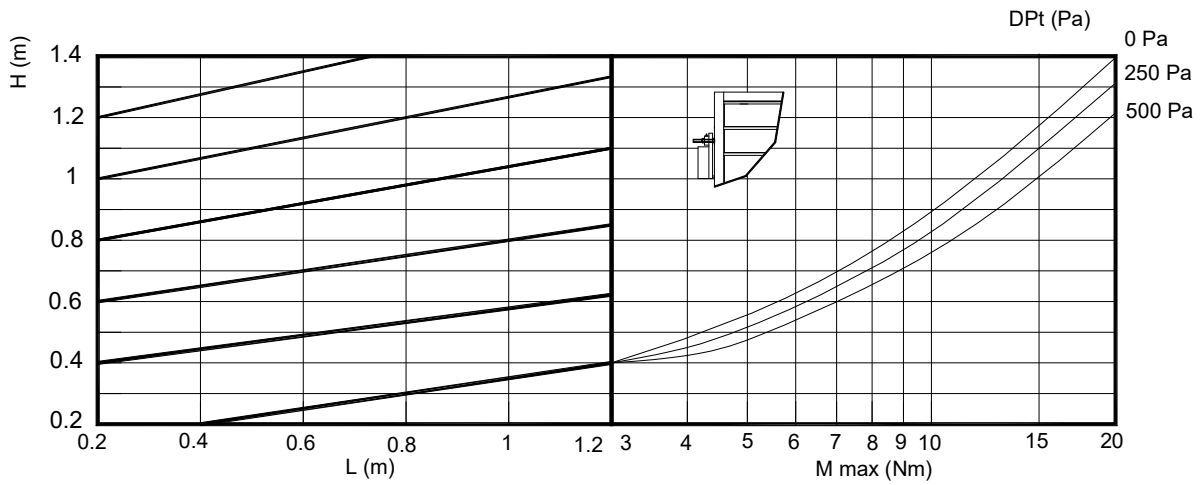
SQR SERIES

VELOCIDAD EN LA CARA, PERDIDA DE CARGA Y POTENCIA SONORA



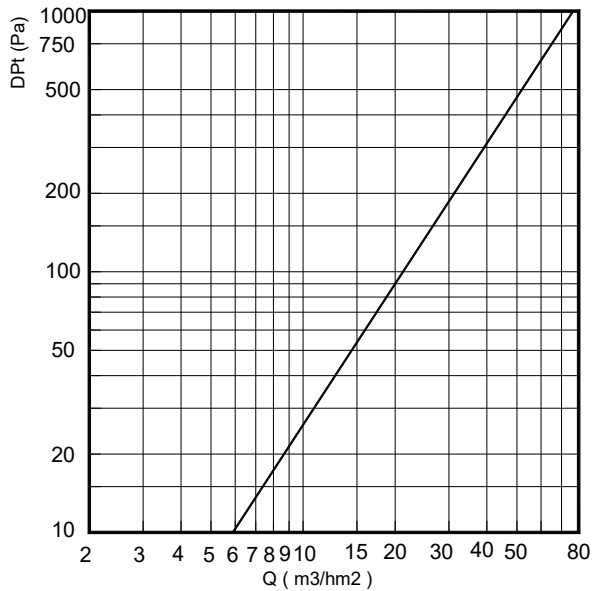
SQR SERIES

PAR DE GIRO.



SQR-EH

FUGAS.

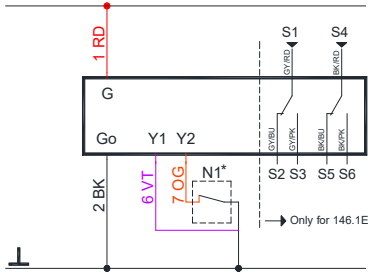


SIEMENS Wiring diagrams

ON/OFF – 3P CONTROL.

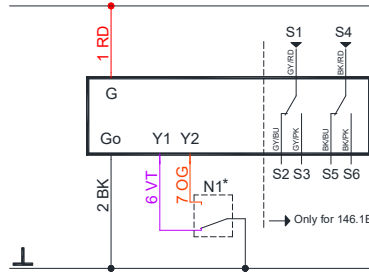
GDB / GLB 14..1E
Open-close, Single wire control

AC 24 V
DC 24 V ... 48 V ...



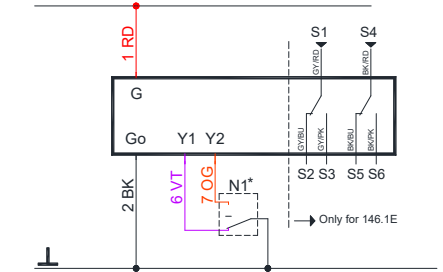
GDB / GLB 14..1E
Open-close, Two wire control

AC 24 V
DC 24 V ... 48 V ...



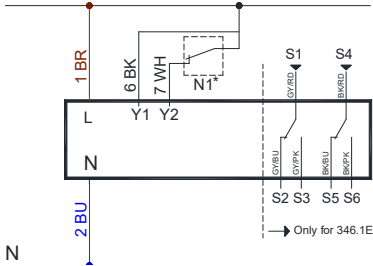
GDB / GLB 14..1E
GEB 13..1E
Three-position control

AC 24 V
DC 24 V ... 48 V ...



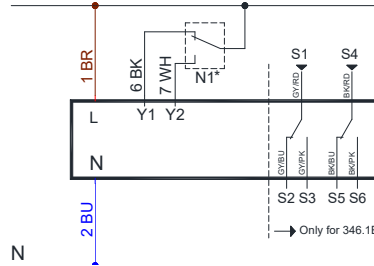
GDB / GLB 34..1E
Open-close, Single wire control

AC 100 ... 240 V



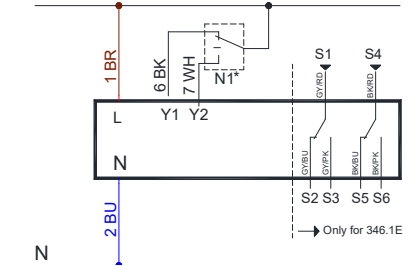
GDB / GLB 34..1E
Open-close, Two wire control

AC 100 ... 240 V



GDB / GLB 34..1E
GEB 33..1E
Three-position control

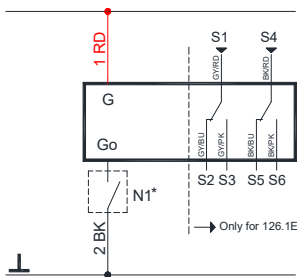
AC 100 ... 240 V



SPRING RETURN - ON/OFF – Two-position control

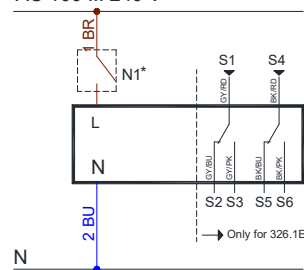
GMA 121.1E
Two-position control

AC 24 V
DC 24 V ... 48 V ...



GMA 321.1E
Two-position control

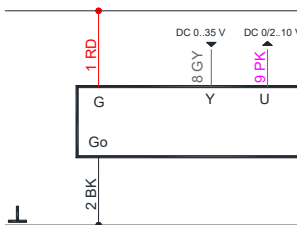
AC 100 ... 240 V



MODULATING control 0-10 V

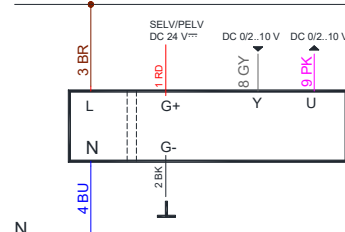
GDB / GLB / GEB 16..1E
Modulating control

AC 24 V
DC 24 V ... 48 V ...



GDB / GLB 36..1E
Modulating control

AC 100 ... 240 V



N1*. Accessory control. See wiring diagrams accessories.

Wiring	Code	N°	Color	Description
Actuators AC 24 V~ DC 24..48V	G	1	RD Red	System potential 24 AC/DC
	G0	2	BK Black	System Neutral
	Y1	6	VT Purple	Positioning AC/DC 0V. cw
	Y2	7	OG Orange	Positioning AC/DC 0V. ccw
	Y	8	GY Grey	Signal in (0-10V)
Actuators AC 230 V~	U	9	PK Pink	Signal out (0-10 V)
	L	3	BR Brown	Line 100 .. 240 AC
	N	4	BU Blue	Neutral conductor
	Y1	6	BK Black	Positioning AC 230V. cw
	Y2	7	WH White	Positioning AC 230V. ccw
Auxiliary contacts	G+	1	RD Red	Potential aux. 24 AC/DC
	G-	2	BK Black	Neutral aux. 24 AC/DC
	Y	8	GY Grey	Signal in (0-10V)
	U	9	PK Pink	Signal out (0-10 V)
	Q11	S1	GY/RD	Contact NC switch A
Q12	S2	GY/BU	Contact NC switch A	
Q14	S3	GY/PK	Contact NO switch A	
Q21	S4	BK/RD	Contact NO switch B	
Q22	S5	BK/BU	Contact NC switch B	
Q24	S6	BK/PK	Contact NO switch B	

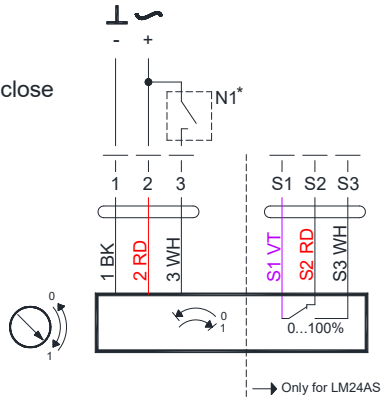
This information is provided by way of indication. Consult the manufacturer catalogue for all updated documentation.

<https://www.buildingtechnologies.siemens.com/bt/global/en/products/HVAC-Products/Damper-actuators/Actuators-for-HVAC-applications/Pages/Actuators-for-HVAC-applications-default.aspx>

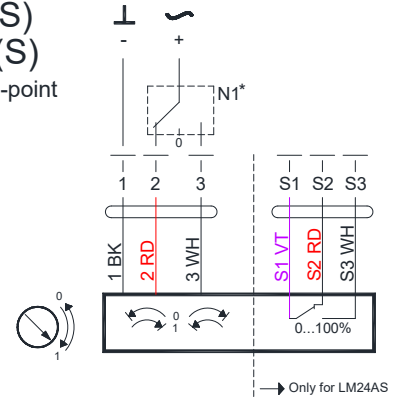
BELIMO Wiring diagrams

ON/OFF – 3P CONTROL.

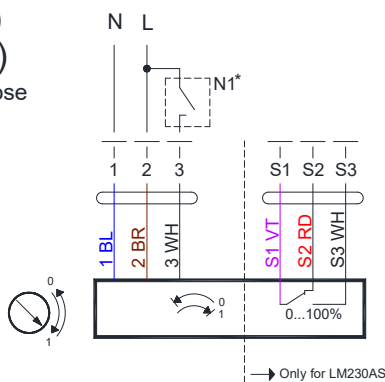
LM-24A..(S)
NM-24A..(S)
AC/DC 24 V, Open-close



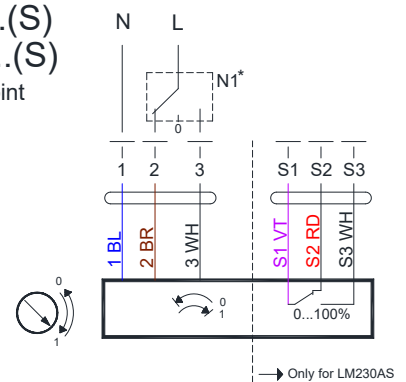
LM-24A..(S)
NM-24A..(S)
AC/DC 24 V, 3-point



LM-230A..(S)
NM-230A..(S)
AC 230 V, Open-close

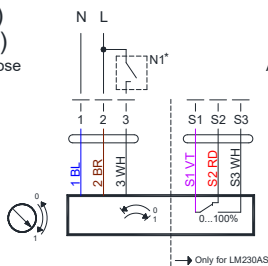


LM-230A..(S)
NM-230A..(S)
AC 230V, 3-point

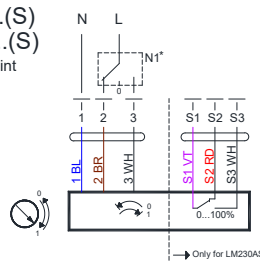


SPRING RETURN - ON/OFF – Two-position control

LM-230A..(S)
NM-230A..(S)
AC 230 V, Open-close



LM-230A..(S)
NM-230A..(S)
AC 230V, 3-point



N1*. Accessory control. See wiring diagrams accessories.

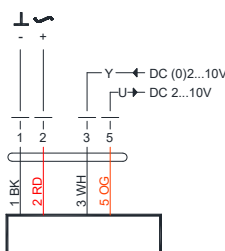
Wiring	Code	N°	Color	Description
Actuators Open-close AC 24 V~ DC 24..48V	-	1	BK Black	System Neutral
	+	2	RD Red	System potential 24 AC/DC
		3	WH White	Positioning AC/DC 0V.
Actuators modulating AC-DC 24 V AC 230V	-	1	BK Black	System Neutral
	+	2	RD Red	System potential 24 AC/DC
		3	WH White	Signal in (0) 2-10V
		5	OG Orange	Signal out 2-10V
Actuators AC 230 V~	L	1	BU Blue	Line 100 .. 240 AC
	N	2	BR Brown	Neutral conductor
	G+	1	BK Black	Neutral aux. 24 AC/DC
	G-	2	RD Red	SG..24
	Y	3	WH White	Signal in (0-10V)
Auxiliary contacts	S1	S1	VT Violet	Input switch A
	S2	S2	RD Red	Contact NC switch A
	S3	S3	WH White	Contact NO switch A

This information is provided by way of indication.
Consult the manufacturer catalogue for all updated
documentation.

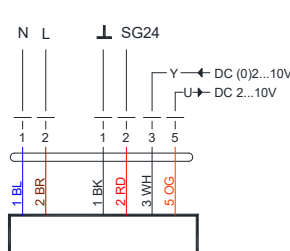
<http://www.belimo.ch/CH/EN/PDF/index.cfm>

MODULATING control 0-10 V

LM24A-SR
NM24A-SR
AC/DC 24 V, modulating



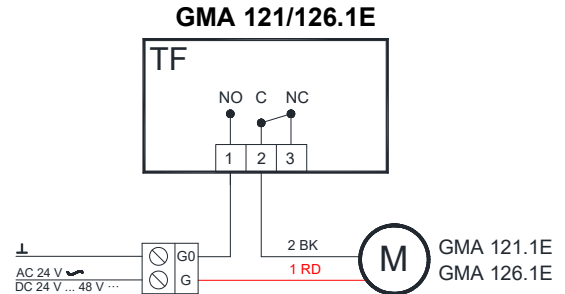
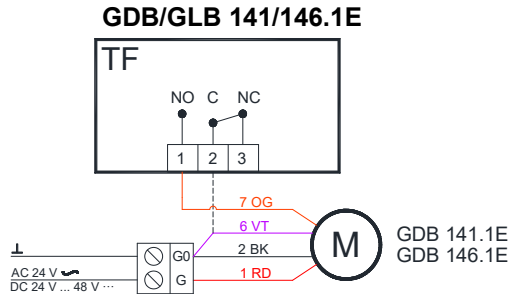
LM230A-SR
NM230A-SR
AC 230 V, Modulating



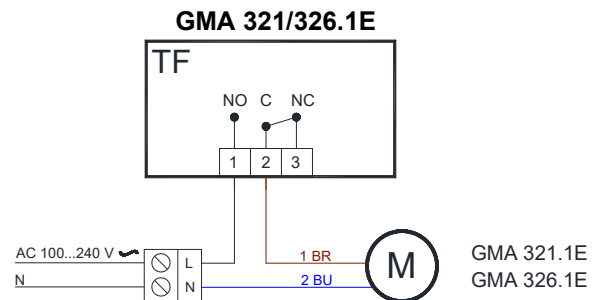
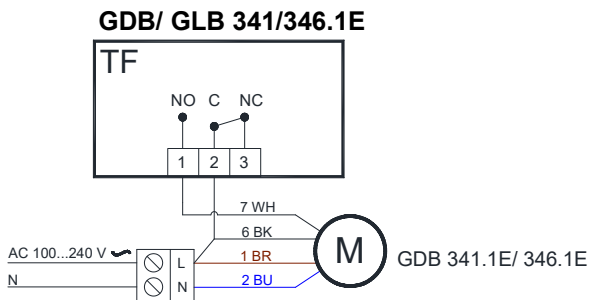
TF Wiring diagrams

TF + SIEMENS actuators

AC/DC 24 V - ON/ OFF control

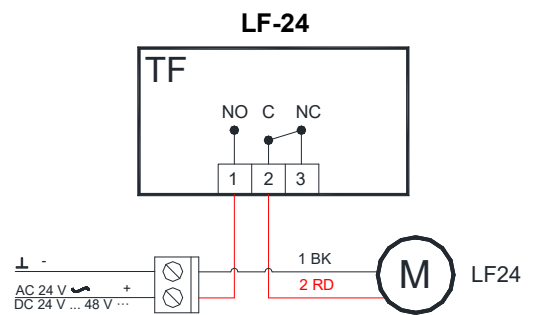
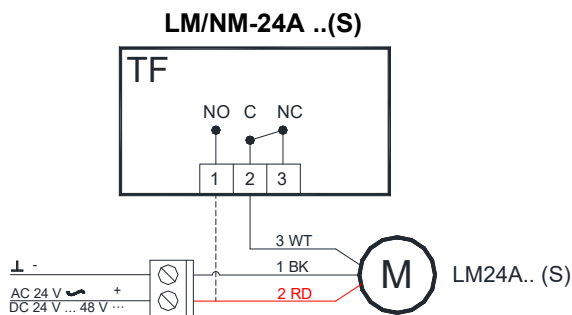


AC 230 V - ON/ OFF control

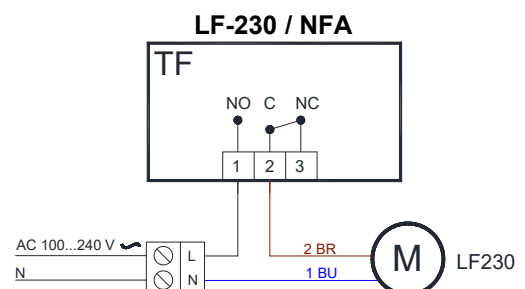
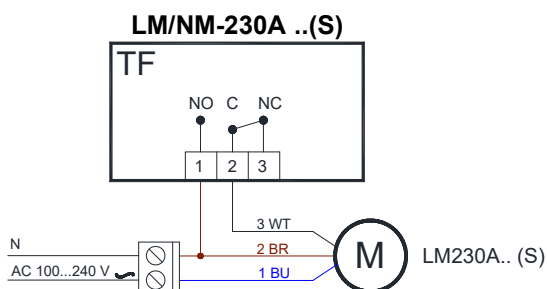


TF + BELIMO actuators

AC/DC 24 V - ON/ OFF control



AC 230 V - ON/ OFF control

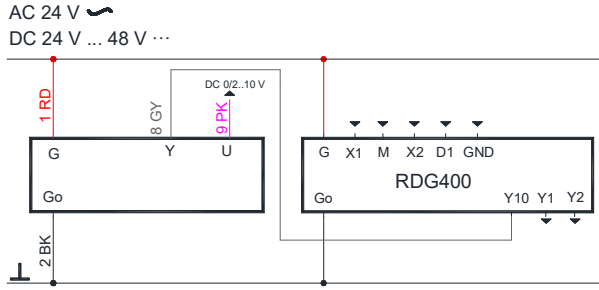


RDG400 Wiring diagrams

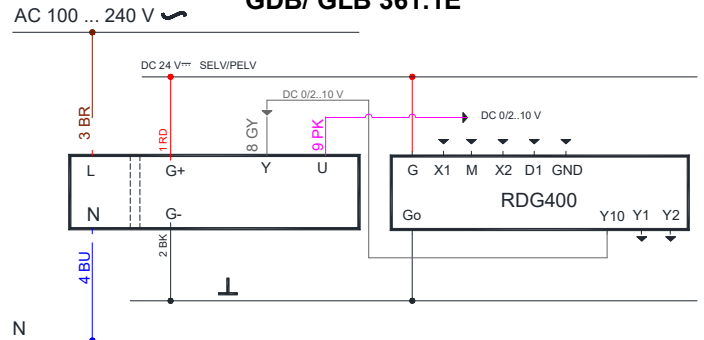
RDG 400 + SIEMENS actuators

Modulating control + manual changeover

GDB/GLB 161.1E



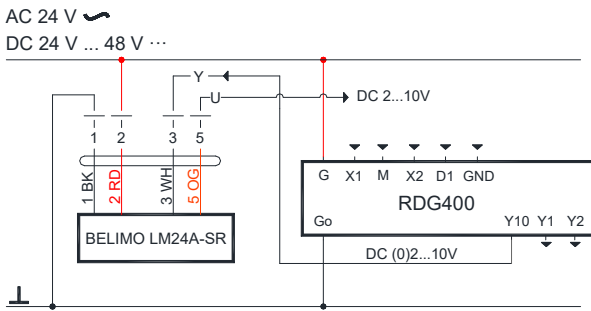
GDB/ GLB 361.1E



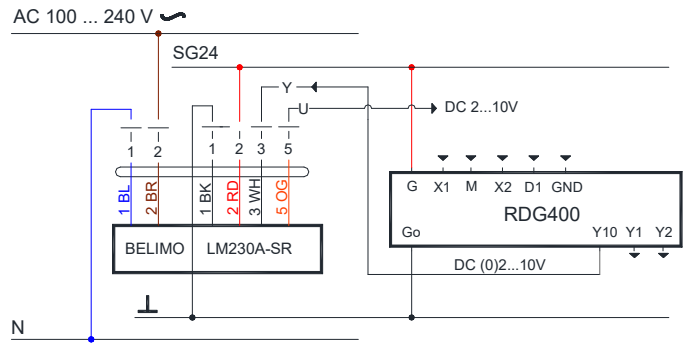
RDG 400 + BELIMO actuators

Modulating control + manual changeover

LM/ NM-24A -SR



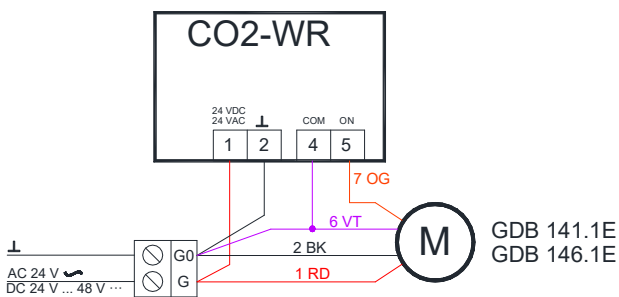
LM/NM230A-SR



CO2-WR Wiring diagrams

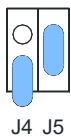
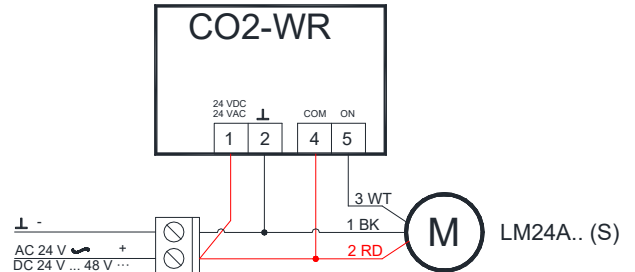
CO2-WR+ SIEMENS GDB/GLB 141.1E

On/OFF control



CO2-WR+ BELIMO LM/NM24A.. (S)

On/OFF control

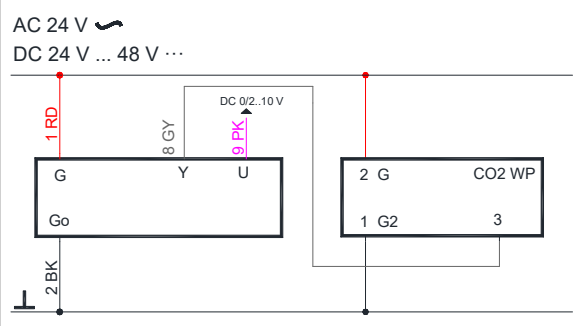


	J4	J5	Relay
800 ppm	disconnected	disconnected	CO2 > 900 ppm. Relay ON; CO2 < 700 ppm Relay OFF
1000 ppm	connected	disconnected	CO2 > 1100 ppm. Relay ON; CO2 < 900 ppm Relay OFF
1200 ppm (default)	disconnected	connected	CO2 > 1200 ppm. Relay ON; CO2 < 1100 ppm Relay OFF
1400 ppm	connected	connected	CO2 > 1500 ppm. Relay ON; CO2 < 1300 ppm Relay OFF

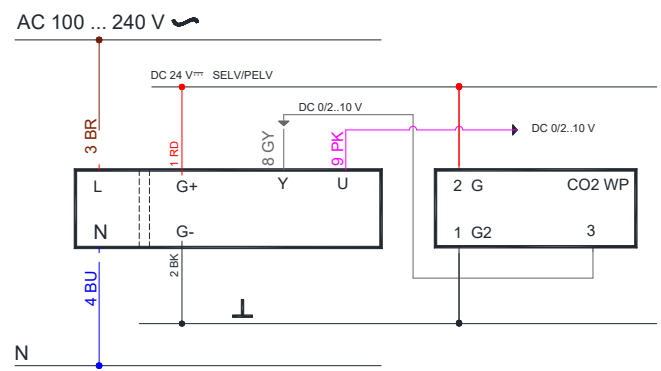
CO2-WP Wiring diagrams

CO2-WP + SIEMENS actuators

AC/DC 24 V – Modulating control
GDB/GLB 161.1E

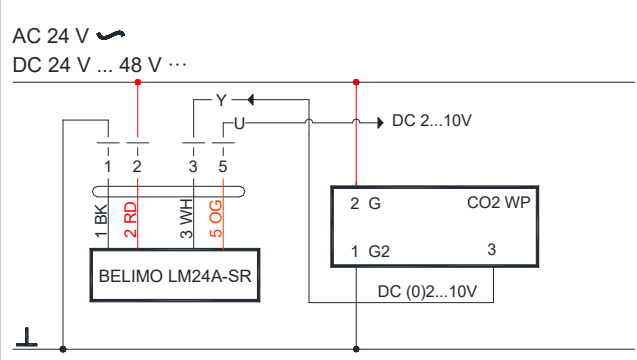


AC 230 V – Modulating control
GDB/GLB 361.1E



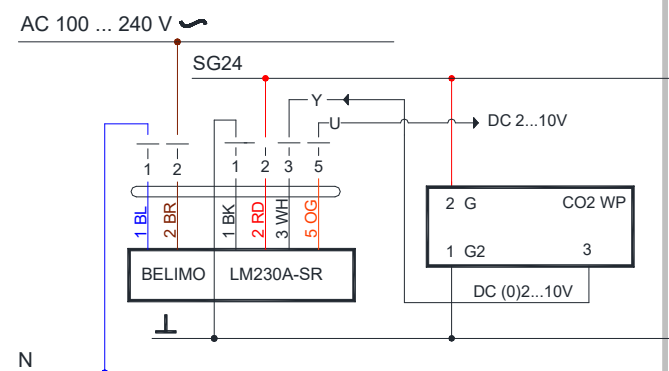
CO2-WP + BELIMO actuators

AC/DC 24 V – Modulating control
LM/NM 24A-SR

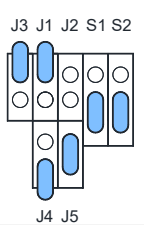


AC 230 V – Modulating control

LM/ NM 230A - SR



CO2-WP Setting



	J1	J2
0-10 VDC(default)	disconnected	disconnected
2-10 VDC	connected	disconnected

	J3
PID out put (default)	disconnected
Linear output	connected

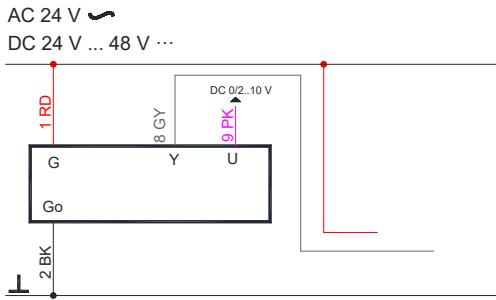
	J4	J5
350 ppm	disconnected	disconnected
500 ppm	connected	disconnected
800 ppm (default)	disconnected	connected
1200 ppm	connected	connected

CO2-D Wiring diagrams

CO2-WD + SIEMENS actuators

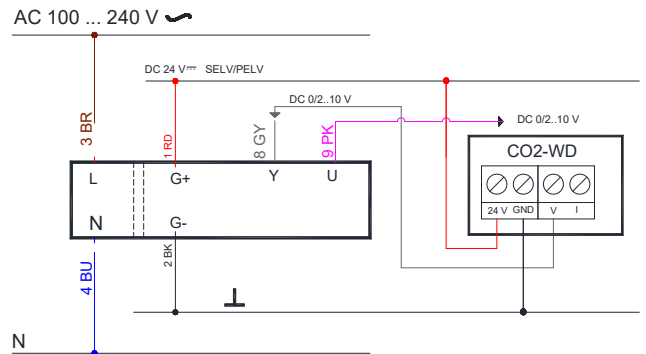
AC/DC 24 V – Modulating control

GDB/GLB 161.1E



AC 230 V – Modulating control

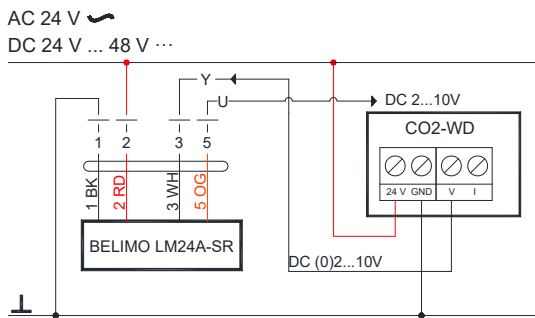
GDB/GLB 361.1E



CO2-WD + BELIMO actuators

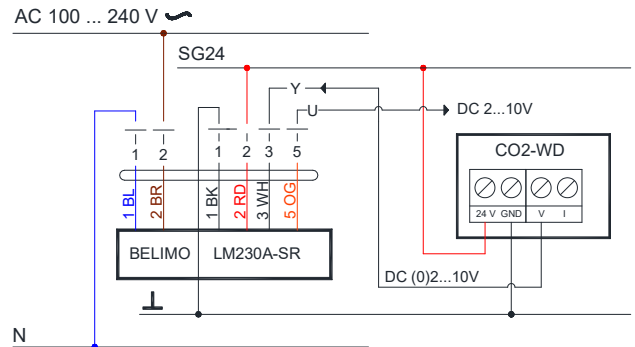
AC/DC 24 V – Modulating control

LM/NM24A-SR



AC 230 V – Modulating control

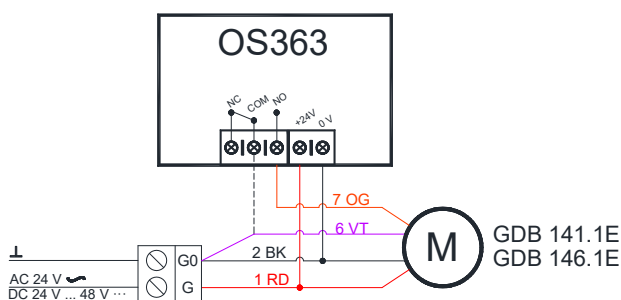
LM/NM230A - SR



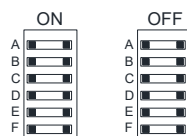
OS-360 Wiring diagrams

OS360+ SIEMENS GDB/GLB 141.1E

On/OFF control

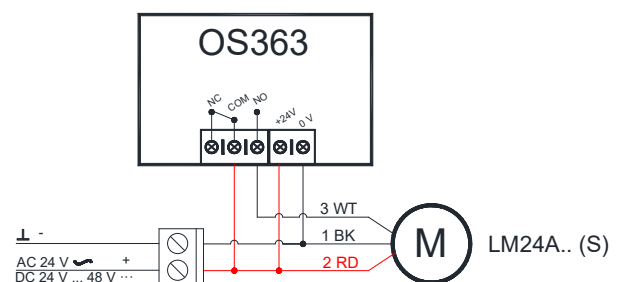


DELAY SETTING



OS360+BELIMO LM/NM 24A.. (S)

On/OFF control



	A	B	C	D	E	F
ON	0 sec	10 sec	30 sec	1 min	5 min	10 min
OFF	10 sec	1 min	5 min	10 min	20 min	30 min