COMPUERTAS DE REGULACIÓN

MADEL

SQR

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 100 mm.

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.

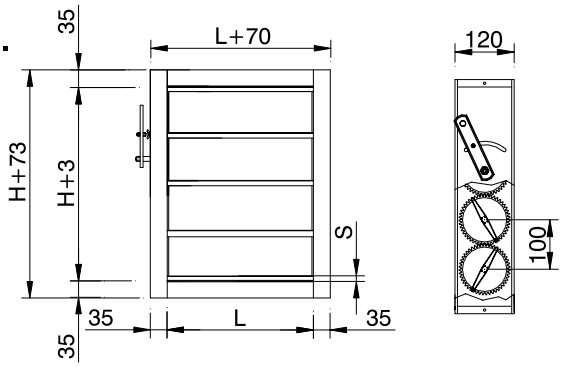
Eje de acero galvanizado.

Placa de protección del sistema de transmisión en acero galvanizado.

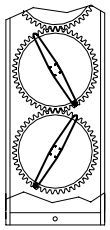
Casquillos de acetal de alta resistencia.

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

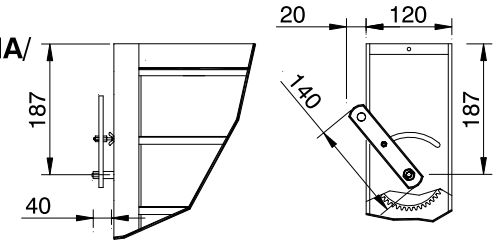
SQR-...



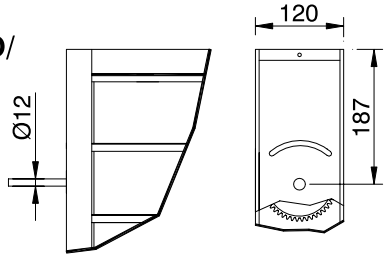
SQR-...



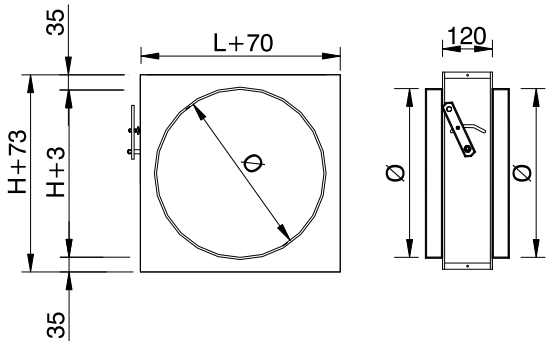
SQR-.../MA/



SQR-.../MO/



SQR-CC



MADEL

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

SIEMENS

BELIMO

SELECCIÓN DE POTÉNCIA DE SERVOMOTORES

MADEL

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

L x H mm	actuator N	L x H mm	actuator N	L x H mm	actuator N
200 x 100	5 N	700 x 250	5 N	700 x 600	5 N
300 x 100	5 N	800 x 250	5 N	800 x 600	5 N
400 x 100	5 N	900 x 250	5 N	900 x 600	5 N
500 x 100	5 N	1 000 x 250	5 N	1 000 x 600	5 N
600 x 100	5 N	1 200 x 250	5 N	1 200 x 600	5 N
700 x 100	5 N	1 400 x 250	5 N	1 400 x 600	10 N
800 x 100	5 N	1 600 x 250	5 N	1 600 x 600	10 N
900 x 100	5 N	1 800 x 250	5 N	1 800 x 600	10 N
1 000 x 100	5 N	2 000 x 250	5 N	2 000 x 600	10 N
1 200 x 100	5 N	**300 x 300**	5 N	**700 x 700**	5 N
1 400 x 100	5 N	400 x 300	5 N	800 x 700	5 N
1 600 x 100	5 N	500 x 300	5 N	900 x 700	5 N
1 800 x 100	5 N	600 x 300	5 N	1 000 x 700	5 N
2 000 x 100	5 N	700 x 300	5 N	1 200 x 700	5 N
200 x 150	5 N	800 x 300	5 N	1 400 x 700	10 N
300 x 150	5 N	900 x 300	5 N	1 600 x 700	10 N
400 x 150	5 N	1 000 x 300	5 N	1 800 x 700	10 N
500 x 150	5 N	1 200 x 300	5 N	2 000 x 700	10 N
600 x 150	5 N	1 400 x 300	5 N	**800 x 800**	5 N
700 x 150	5 N	1 600 x 300	5 N	900 x 800	5 N
800 x 150	5 N	1 800 x 300	5 N	1 000 x 800	10 N
900 x 150	5 N	2 000 x 300	5 N	1 200 x 800	10 N
1 000 x 150	5 N	**400 x 400**	5 N	1 400 x 800	10 N
1 200 x 150	5 N	500 x 400	5 N	1 600 x 800	10 N
1 400 x 150	5 N	600 x 400	5 N	1 800 x 800	15 N
1 600 x 150	5 N	700 x 400	5 N	2 000 x 800	15 N
1 800 x 150	5 N	800 x 400	5 N	**900 x 900**	10 N
2 000 x 150	5 N	900 x 400	5 N	1 000 x 900	10 N
200 x 200	5 N	1 000 x 400	5 N	1 200 x 900	10 N
300 x 200	5 N	1 200 x 400	5 N	1 400 x 900	10 N
400 x 200	5 N	1 400 x 400	5 N	1 600 x 900	15 N
500 x 200	5 N	1 600 x 400	5 N	1 800 x 900	15 N
600 x 200	5 N	1 800 x 400	5 N	2 000 x 900	15 N
700 x 200	5 N	2 000x 400	5 N	**1 000 x 1 000**	10 N
800 x 200	5 N	**500 x 500**	5 N	1 200 x 1 000	10 N
900 x 200	5 N	600 x 500	5 N	1 400 x 1 000	10 N
1 000 x 200	5 N	700 x 500	5 N	1 600 x 1 000	15 N
1 200 x 200	5 N	800 x 500	5 N	1 800 x 1 000	15 N
1 400 x 200	5 N	900 x 500	5 N	2 000 x 1 000	15 N
1 600 x 200	5 N	1 000 x 500	5 N		
1 800 x 200	5 N	1 200 x 500	5 N	**CC mm**	**actuator N**
2 000 x 200	5 N	1 400 x 500	5 N		
300 x 250	5 N	1 600 x 500	10 N	400	5 N
400 x 250	5 N	1 800 x 500	10 N	**450**	5 N
500 x 250	5 N	2 000 x 500	10 N	500	5 N
600 x 250	5 N	**600 x 600**	5 N	630	5 N

MADEL

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. 24 VAC 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 - 10 Vdc. Set point 600 - 800 -1 000 ppm (Sondas de CO^2 proporcionales, requieren servomotor proporcional).

CO²-D Sonda para conducto 24 vdc-vac con una salida 0-10Vdc, IP54 (Sondas de CO^2 proporcionales, requieren servomotor proporcional).

CO²-WR Sonda ambiente de pared 24 vdc-vac. Visualización de lectura LED. Salida digital (relé 5A) Setpoint 800 - 1 000 - 1 200 (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.

TF

TF-RC

CO2-WP
CO2-WR

RDG 400

CO2-D

OS-360

ACCESORIOS DE MONTAJE

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

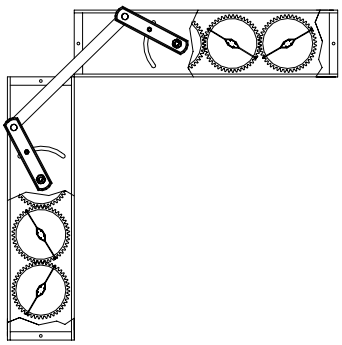
SISTEMES DE FIJACIÓN

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.

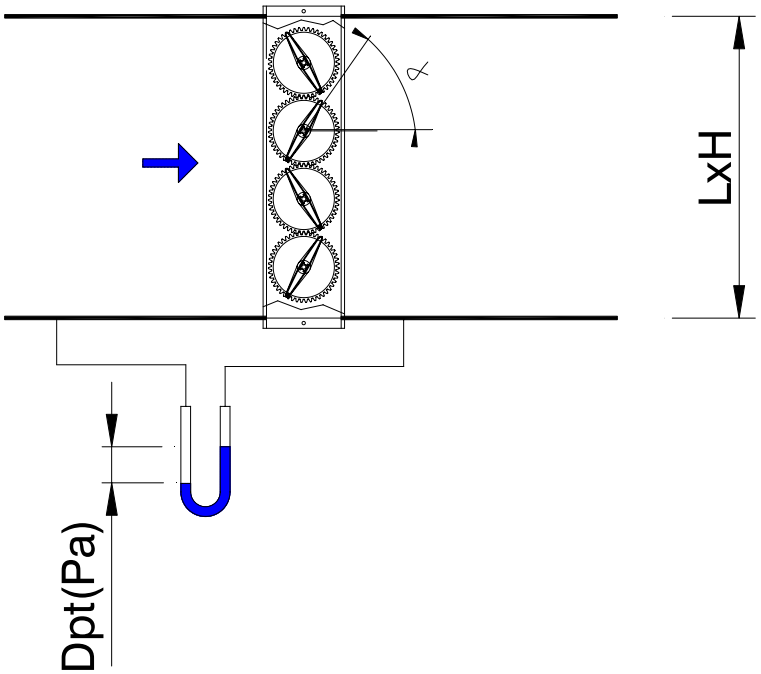
FC



L x H [m²] (A face)

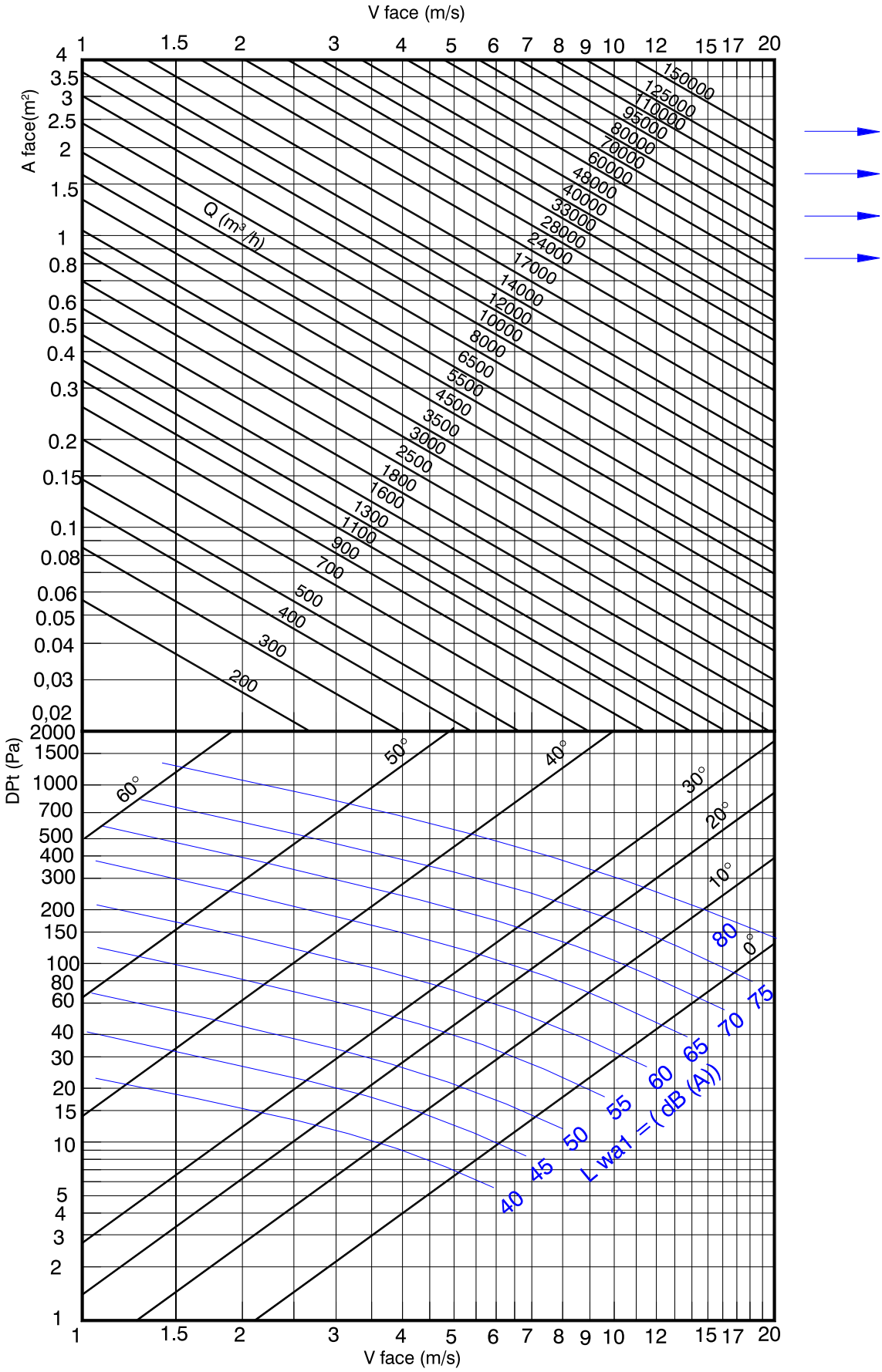
MADEL

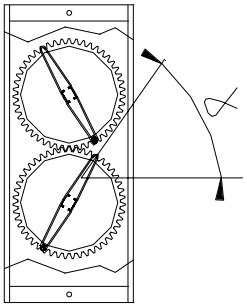
H [mm]	L [mm]											
	100	200	300	400	500	600	700	800	900	1000	1 100	1 200
100	0,010	0,020	0,030	0,040	0,050	0,060	0,070	0,080	0,090	0,100	0,110	0,120
150	0,015	0,030	0,045	0,060	0,075	0,090	0,105	0,120	0,135	0,150	0,165	0,180
200	0,020	0,040	0,060	0,080	0,100	0,120	0,140	0,160	0,180	0,200	0,220	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
1 000	0,100	0,200	0,300	0,400	0,500	0,600	0,700	0,800	0,900	1,000	1,100	1,200



VELOCIDAD EN LA CARA, PÉRDIDA DE CARGA Y POTENCIA SONORA

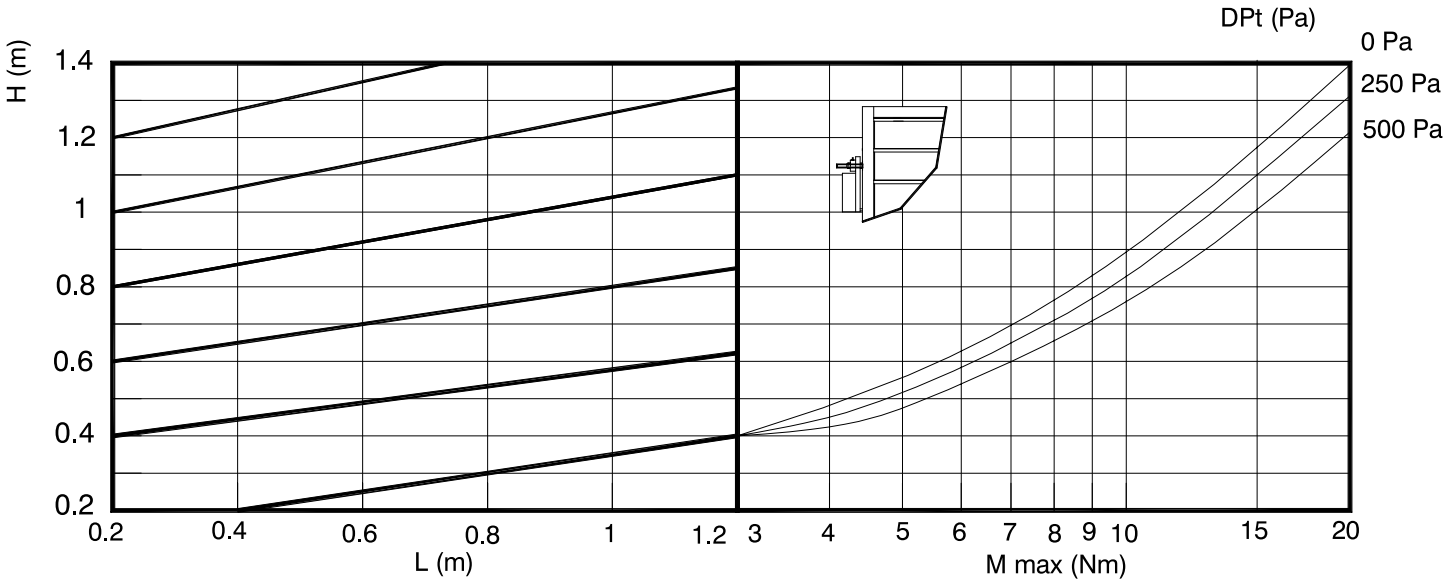
MADEL





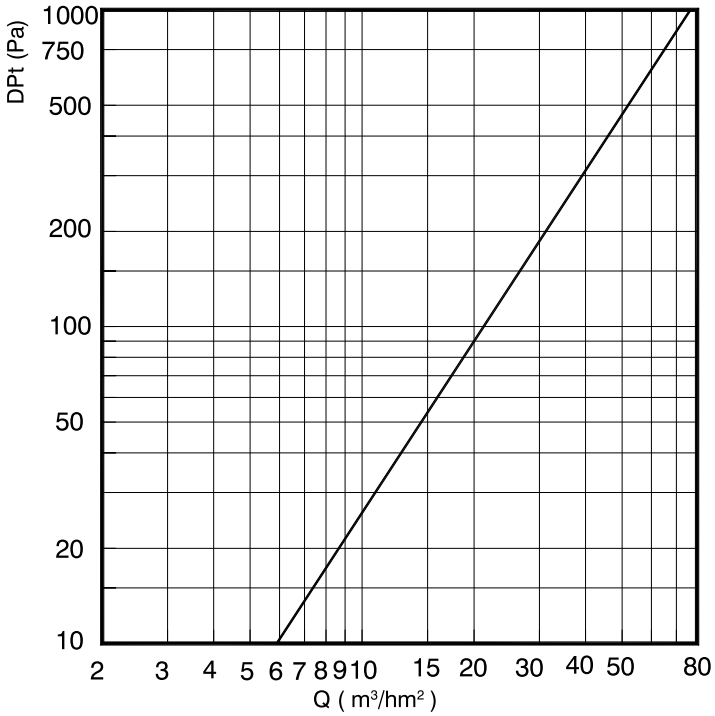
MADEL

PAR DE GIRO



SQR-EH

FUGAS

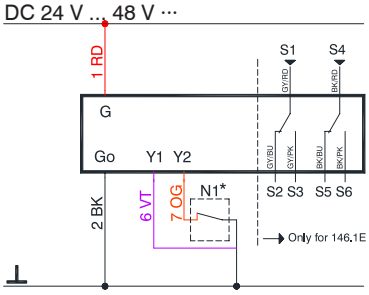


SIEMENS WIRING DIAGRAMS

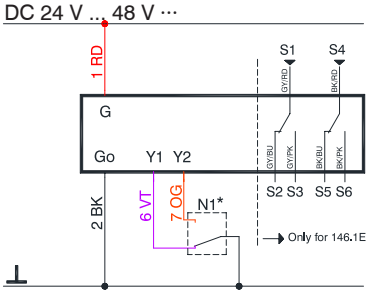
MADEL

ON/OFF – 3P CONTROL

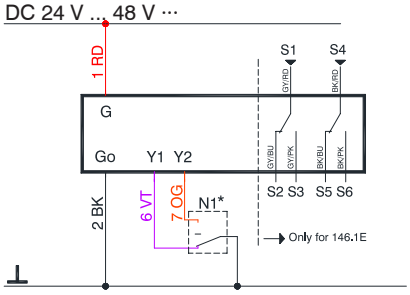
GDB / GLB 14..1E.
Open-close, Single wire control.
AC 24 V ~
DC 24 V ... 48 V ···



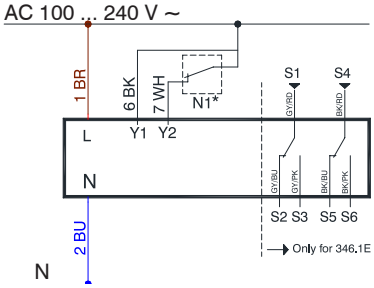
GDB / GLB 14..1E.
Open-close, Two wire control.
AC 24 V ~
DC 24 V ... 48 V ···



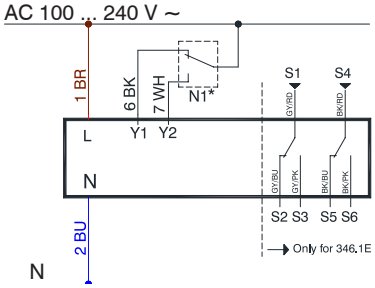
GDB / GLB 14..1E / GEB 13..1E.
Three-position control.
AC 24 V ~
DC 24 V ... 48 V ···



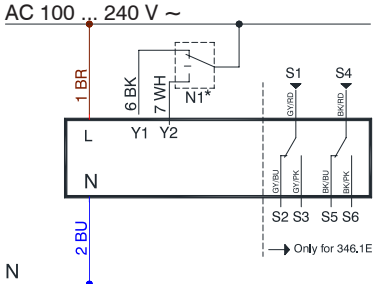
GDB / GLB 34..1E.
Open-close, Single wire control.
AC 100 ... 240 V ~



GDB / GLB 34..1E.
Open-close, Two wire control.
AC 100 ... 240 V ~

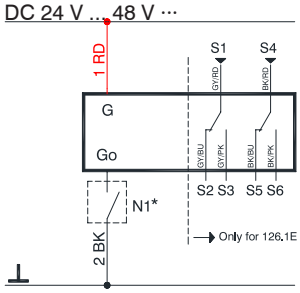


GDB / GLB 34..1E / GEB 33..1E.
Three-position control.
AC 100 ... 240 V ~

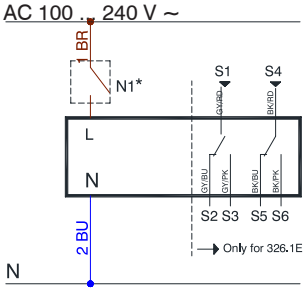


SPRING RETURN - ON/OFF – TWO-POSITION CONTROL

GMA 121.1E.
Two-position control.
AC 24 V ~
DC 24 V ... 48 V ···

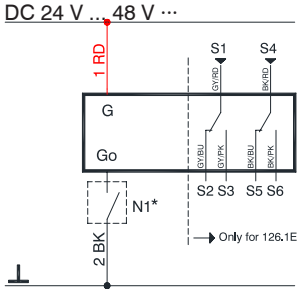


GMA 321.1E.
Two-position control.
AC 100 ... 240 V ~

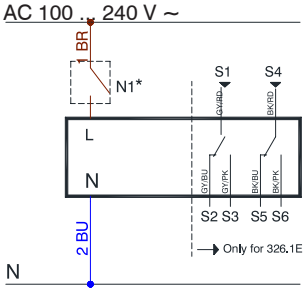


MODULATING CONTROL 0 - 10 V

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..48 V	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 - 10 V).
	U	9	PK Pink	Signal out (0 - 10 V).
Actuators AC 230 V~	L	3	BR Brown	Line 100 .. 240 AC.
	N	4	BU Blue	Neutral conductor.
	Y1	6	BK Black	Positioning AC 230 V. CW.
	Y2	7	WH White	Positioning AC 230 V. CCW.
	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 - 10 V).
	U	9	PK Pink	Signal out (0 - 10 V).
Auxiliary contacts	Q11	S1	GY/RD	Input switch A.
	Q12	S2	GY/BU	Contact NC switch A.
	Q14	S3	GY/PK	Contact NO switch A.
	Q21	S4	BK/RD	Input 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.

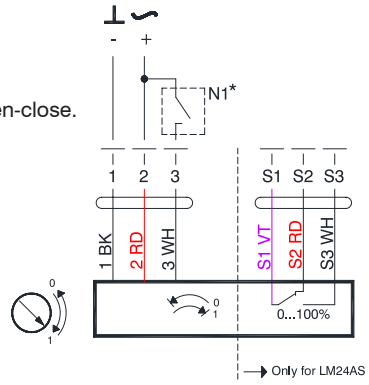
https://www.buildingtechnologies.siemens.com

BELIMO WIRING DIAGRAMS

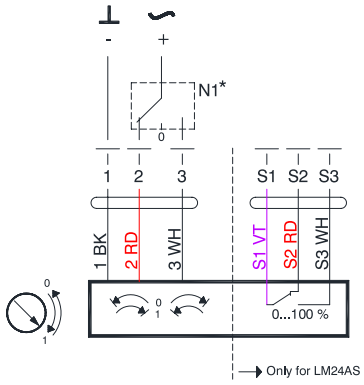
MADEL

ON/OFF – 3P CONTROL

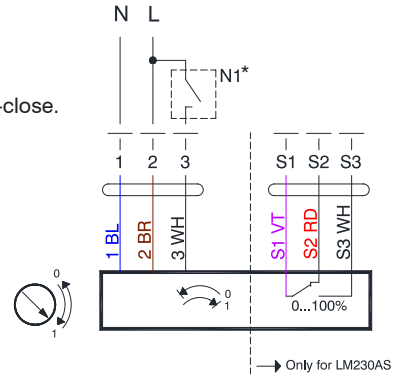
LM-24 A..(S).
NM-24 A..(S)
AC/DC 24 V, Open-close.



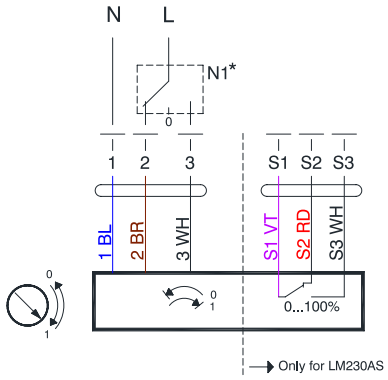
LM-24 A..(S).
NM-24 A..(S).
AC/DC 24 V, 3-point.



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

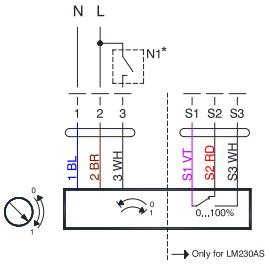


LM-230 A..(S).
NM-230 A..(S).
AC 230 V, 3-point.

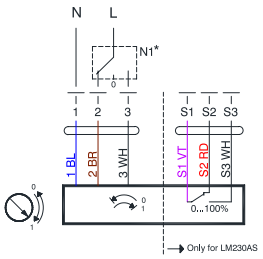


SPRING RETURN - ON/OFF – TWO-POSITION CONTROL

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

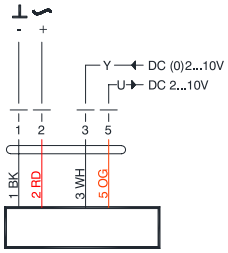


LM-230 A..(S).
NM-230 A..(S).
AC 230 V, 3-point.

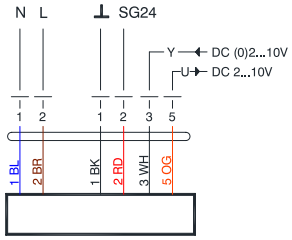


MODULATING CONTROL 0 - 10 V

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



LM230A-SR.
NM230A-SR.
AC 230 V, Modulating.



N1*. Accessory control. See wiring diagrams accessories.

Wiring	Code	N°	Color	Description
Actuators AC 24 V~ DC 24..48 V	-	1	BK Black	System Neutral.
	+	2	RD Red	System potential 24 AC/DC.
		3	WH White	Positioning AC/DC 0 V.
Actuators modulating AC-DC 24 V AC 230 V	-	1	BK Black	System Neutral.
	+	2	RD Red	System potential 24 AC/DC.
		3	WH White	Signal in (0) 2 - 10 V.
		5	OG Orange	Signal out 2 - 10 V.
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 - 10 V).
	U	5	OG Orange	Signal out (0 - 10 V).
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.

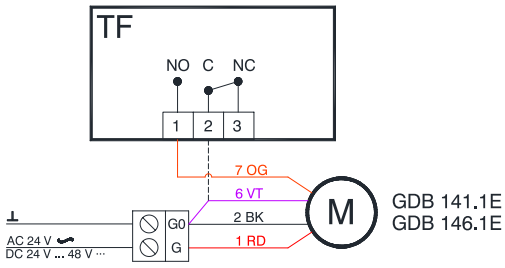
http://www.belimo.ch/CH/EN/PDF/index.cfm

TF WIRING DIAGRAMS

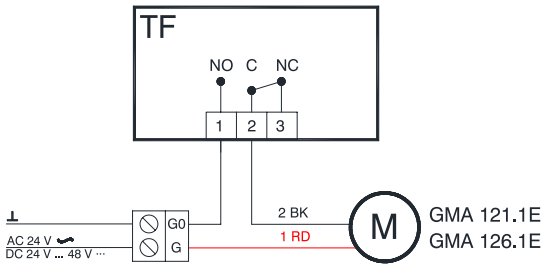
MADEL

TF + SIEMENS ACTUATORS
AC/DC 24 V - ON/ OFF CONTROL

GDB/GLB 141/146.1E

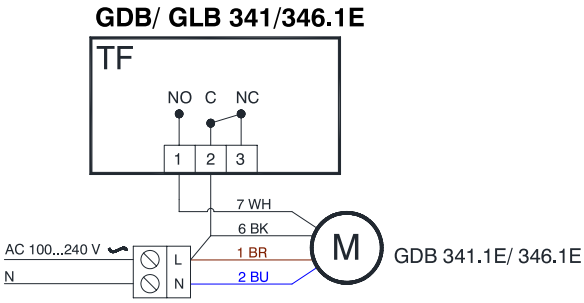


GMA 121/126.1E

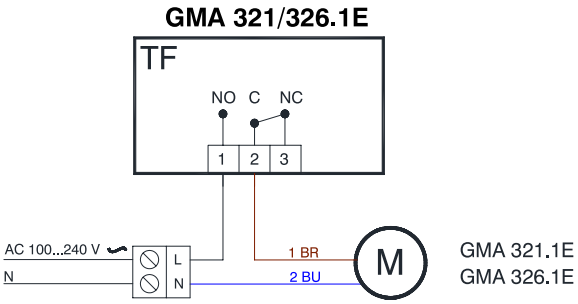


AC 230 V - ON/ OFF CONTROL

GDB/ GLB 341/346.1E

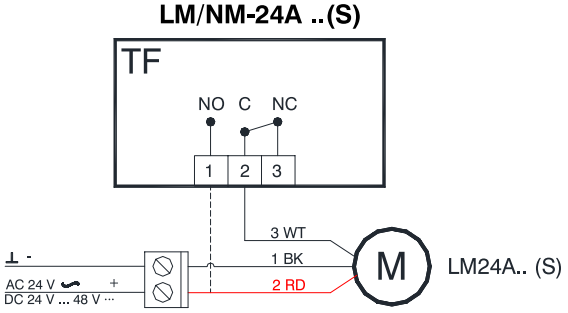


GMA 321/326.1E

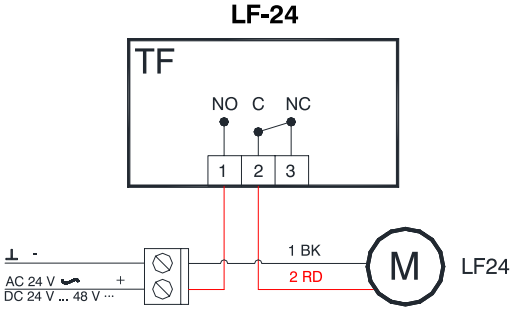


TF + BELIMO ACTUATORS
AC/DC 24 V - ON/ OFF CONTROL

LM/NM-24A ..(S)

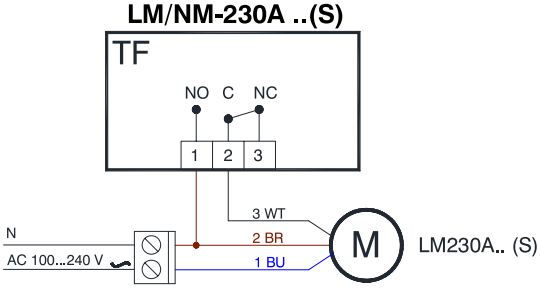


LF-24

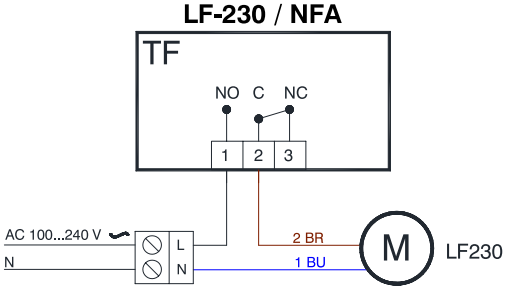


AC 230 V - ON/ OFF CONTROL

LM/NM-230A ..(S)



LF-230 / NFA

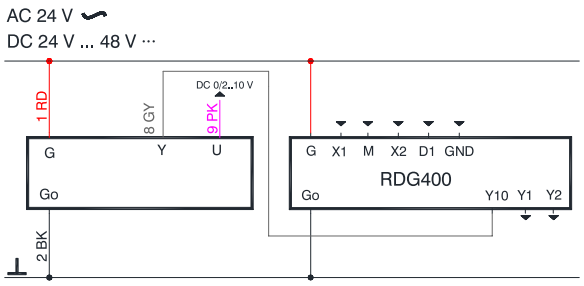


RDG400 WIRING DIAGRAMS

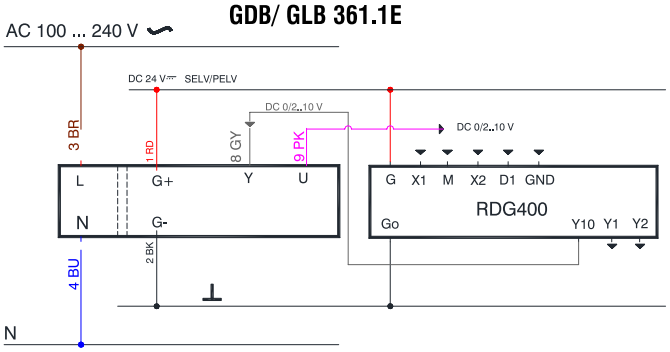
MADEL

RDG 400 + SIEMENS ACTUATORS
MODULATING CONTROL + MANUAL CHANGEOVER

GDB/GLB 161.1E

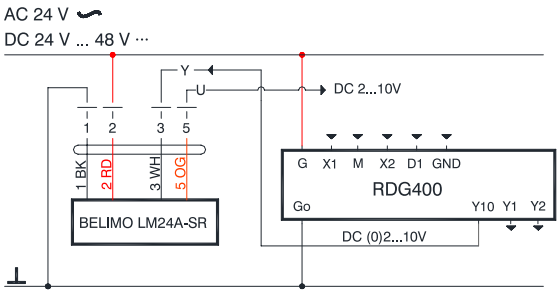


GDB/ GLB 361.1E

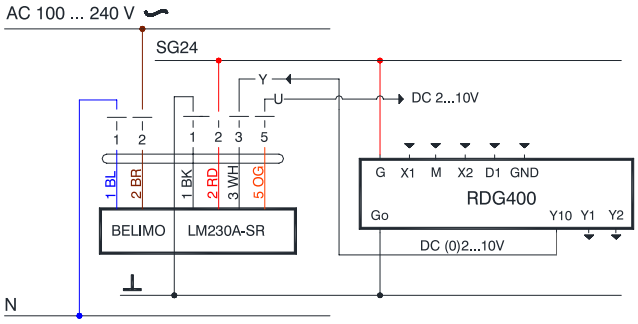


RDG 400 + BELIMO ACTUATORS
MODULATING CONTROL + MANUAL CHANGEOVER

LM/ NM-24A -SR



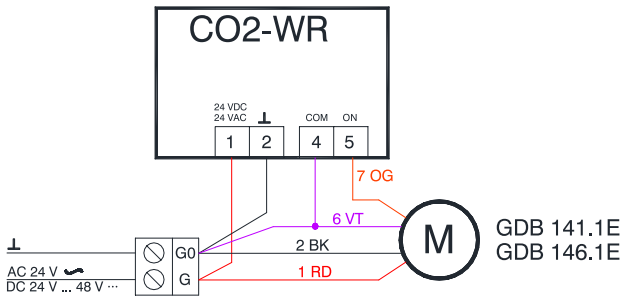
LM/NM230A-SR



CO²-WR WIRING DIAGRAMS

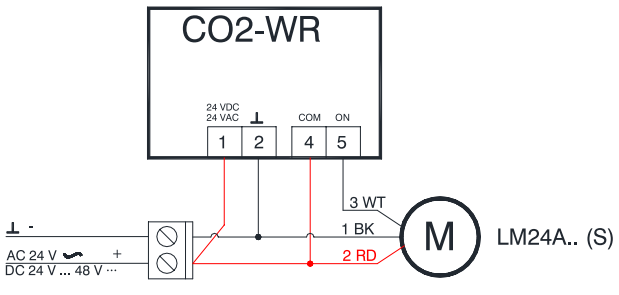
CO2-WR+ SIEMENS GDB/GLB 141.1E

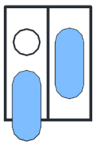
On/OFF control



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

On/OFF control





J4 J5

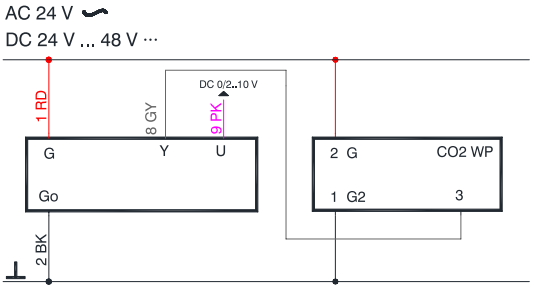
	J4	J5	Relay
800 ppm	disconnected	disconnected	CO2 > 900 ppm. Relay ON; CO² < 700 ppm Relay OFF.
1 000 ppm	connected	disconnected	CO2 > 1 100 ppm. Relay ON; CO² < 900 ppm Relay OFF.
1 200 ppm (default)	disconnected	connected	CO2 > 1 200 ppm. Relay ON; CO² < 1 100 ppm Relay OFF.
1 400 ppm	connected	connected	CO2 > 1 500 ppm. Relay ON; CO² < 1 300 ppm Relay OFF.

CO²-WP WIRING DIAGRAMS

MADEL

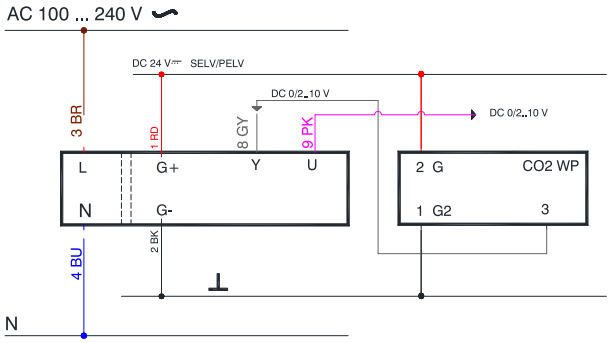
CO²-WP + SIEMENS ACTUATORS
AC/DC 24 V – MODULATING CONTROL

GDB/GLB 161.1E



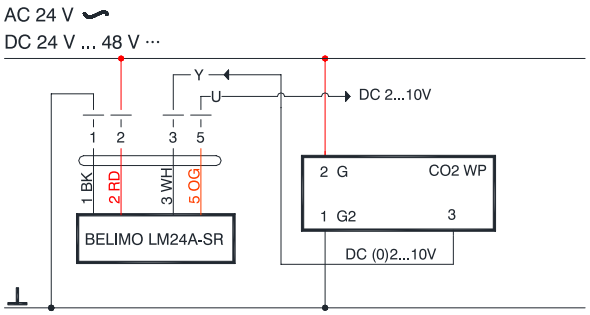
AC 230 V – MODULATING CONTROL

GDB/GLB 361.1E



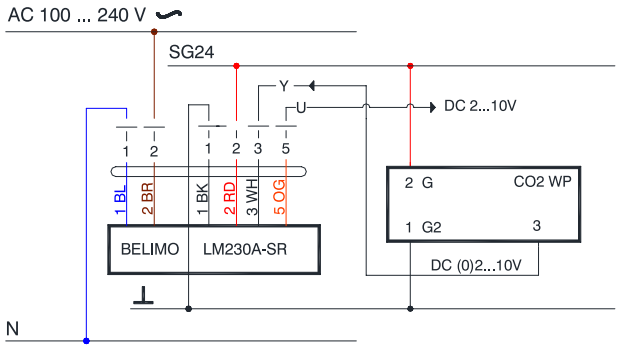
CO²-WP + BELIMO ACTUATORS
AC/DC 24 V – MODULATING CONTROL

LM/NM 24A-SR

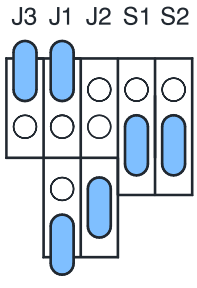


AC 230 V – MODULATING CONTROL

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

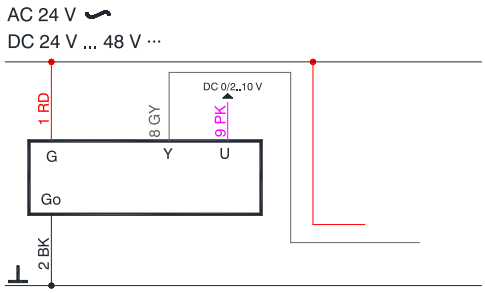
	J4	J5
350 ppm	disconnected	disconnected
500 ppm	connected	disconnected
800 ppm (default)	disconnected	connected
1 200 ppm	connected	connected

CO²-D WIRING DIAGRAMS

MADEL

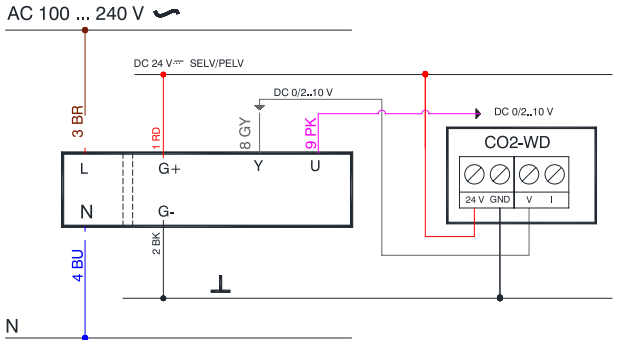
CO²-WD + SIEMENS ACTUATORS
AC/DC 24 V – MODULATING CONTROL

GDB/GLB 161.1E



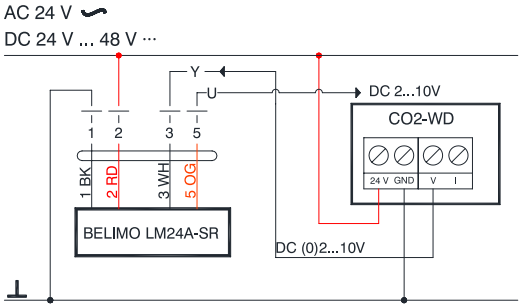
AC 230 V – MODULATING CONTROL

GDB/GLB 361.1E



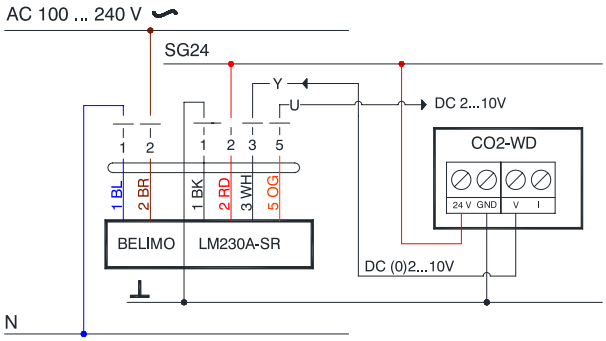
CO²-WD + BELIMO ACTUATORS
AC/DC 24 V – MODULATING CONTROL

LM/NM24A-SR



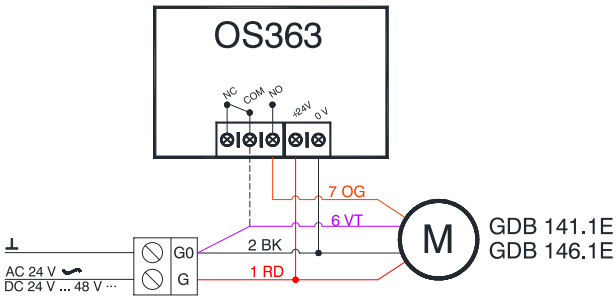
AC 230 V – MODULATING CONTROL

LM/NM230A - SR

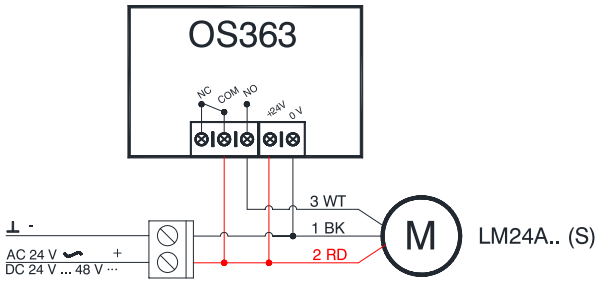


CO²-D WIRING DIAGRAMS

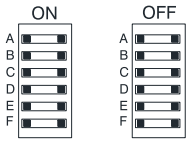
OS360+ SIEMENS GDB/GLB 141.1E
On/OFF control



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



DELAY SETTING



	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