

IMPULSE MEMORY RELAYS MIG

Impulse memory relays - quiet

- For switching of electric circuits by impulse command.
- Power impulse relay with I_{th} up to 63 A and control voltage AC 24 V and AC 230 V.
- Mainly for control of lighting circuits from more points in a corridor, on stairs, in the whole house etc.
- The lighting circuits can be controlled by push-buttons instead of a combination of crossbar and three-way switches.
- It saves conductors - it is possible to use smaller cross-sections for the control circuit than for power circuit.
- It brings higher comfort of control - for example it is possible to switch off all lights by one push-button when leaving the house (by means of OD-MIG-CO1 central control block and OD-MIG-CO2 multi-level central control block).
- The relay does not need permanent power supply; it is supplied only for the time of control impulse duration.
- Possibility of manual switching from the front of the device (I-0). The switch lever indicates contact state.
- Possibility of permanent manual switching off the relay coil from the front of the device. If the switch is in OFF position, it is not possible to control the relay electrically. This can be used in maintenance or similar activity.
- High number of contacts; the version with up to four contacts is sufficient for switching most circuits. Further increase in the number of contacts can be performed by installation of the auxiliary switch PS-MIG-1100 on the side of the relay.



Impulse relay 20 A

Arrangement of contacts ¹⁾	Rated control voltage U_c	Type	Order code	Number of modules	Weight [kg]	Package [pcs]
10	AC 230 V	MIG-20-10-A230	OEZ:43184	1	0.135	1
11	AC 230 V	MIG-20-11-A230	OEZ:43185	1	0.135	1
20	AC 230 V	MIG-20-20-A230	OEZ:43186	1	0.135	1

¹⁾ Each digit indicates successively the number of make and break contacts

Impulse relay 32 A

Arrangement of contacts ¹⁾	Rated control voltage U_c	Type	Order code	Number of modules	Weight [kg]	Package [pcs]
11	AC 230 V	MIG-32-11-A230	OEZ:43190	1	0.135	1
	AC 24 V	MIG-32-11-A024	OEZ:43257	1	0.135	1
20	AC 230 V	MIG-32-20-A230	OEZ:43191	1	0.135	1
	AC 24 V	MIG-32-20-A024	OEZ:43258	1	0.135	1
31	AC 230 V	MIG-32-31-A230	OEZ:43256	2	0.195	1
	AC 24 V	MIG-32-31-A024	OEZ:43259	2	0.195	1
40	AC 230 V	MIG-32-40-A230	OEZ:43193	2	0.195	1
	AC 24 V	MIG-32-40-A024	OEZ:43260	2	0.195	1

¹⁾ Each digit indicates successively the number of make and break contacts




Impulse relay 63 A

Arrangement of contacts ¹⁾	Rated control voltage U_c	Type	Order code	Number of modules	Weight [kg]	Package [pcs]
31	AC 230 V	MIG-63-31-A230	OEZ:43269	4	0.400	1
	AC 24 V	MIG-63-31-A024	OEZ:43271	4	0.400	1
40	AC 230 V	MIG-63-40-A230	OEZ:43270	4	0.400	1
	AC 24 V	MIG-63-40-A024	OEZ:43272	4	0.400	1

¹⁾ Each digit indicates successively the number of make and break contacts

IMPULSE MEMORY RELAYS MIG

Specifications

Type		MIG-20	MIG-32	MIG-63
Standards		EN 60669-2-2	EN 60669-2-2	EN 60669-2-2
Approval marks				
Main circuit (contact)				
Arrangement of contacts ¹⁾		10, 11, 20	11, 20, 31, 40	31, 40
Rated thermal current	I_{th}	20 A	32 A	63 A
Rated operating voltage	U_e	440 V	440 V	440 V
Rated operating current	I_e	AC-1/AC-7a	20 A	32 A
		AC-2	10 A	16 A
		AC-3/AC-7b	7 A	10 A
Switched power	P_e	AC-1/AC-7a	1-phase AC 230 V 4.4 kW	7 kW
			3-phase AC 400 V -	21 kW
		AC-2	1-phase AC 230 V 1.5 kW	2.4 kW
			3-phase AC 400 V -	7.2 kW
		AC-3/AC-7b	1-phase AC 230 V 0.5 kW	1.1 kW
			3-phase AC 400 V -	5.5 kW
Min. switched power		10 V / 100 mA	10 V / 100 mA	10 V / 100 mA
Max. switching frequency		AC-1, AC-7a	600 cycles/hr	450 cycles/hr
		AC-2	120 cycles/hr	120 cycles/hr
		AC-3, AC-7b	600 cycles/hr	450 cycles/hr
		DC-1	300 cycles/hr	300 cycles/hr
		no load	900 cycles/hr	450 cycles/hr
Power loss at I_e (1 pole)		1.5 W	3 W	3.5 W
Mechanical endurance		10 000 000 cycles	10 000 000 cycles	10 000 000 cycles
Electrical endurance		100 000 cycles	100 000 cycles	100 000 cycles
Maximum backup fuse gL/gG against short-circuit, coordination type 1		20 A	32 A	63 A
Connection - conductor rigid and flexible		1 ÷ 10 mm ²	1 ÷ 10 mm ²	2.5 ÷ 25 mm ²
Torque		1.2 Nm	1.2 Nm	2 Nm
Screw head type		PZ2	PZ2	PZ2
Control circuit (coil)				
Rated control voltage	U_c	AC 230 V	AC 24; 230 V	AC 24; 230 V
Operating range U_c		90 ÷ 110 %	90 ÷ 110 %	90 ÷ 110 %
Impulse length		min. 50 ms and max. 1 hr	min. 50 ms and max. 1 hr	min. 50 ms and max. 1 hr
Dwell between two impulses		min. 150 ms	min. 150 ms	min. 150 ms
Power loss for longer impulse ²⁾		4 W	4 W	4 W
Rated frequency	f_c	50/60 Hz	50/60 Hz	50/60 Hz
Max. total load of push-buttons with orientation lighting (glow lamps, LEDs etc.) ³⁾		2.5 mA	2.5 mA	2.5 mA
Connection - conductor rigid and flexible		1 ÷ 4 mm ²	1 ÷ 4 mm ²	1 ÷ 4 mm ²
Torque		0.6 Nm	0.6 Nm	0.6 Nm
Screw head type		PZ1	PZ1	PZ1
Other data				
Rated insulation voltage	U_i	440 V	440 V	440 V
Rated impulse voltage	U_{imp}	4 kV	4 kV	4 kV
Mounting on "U" rail according to EN 60715 - type		TH35	TH35	TH35
Degree of protection		IP20	IP20	IP20
Ambient temperature		-25 ÷ + 55 °C	-25 ÷ + 55 °C	-25 ÷ + 55 °C
Separation of coil-contact circuits for application of SELV/PELV		yes	yes	yes
Central control		yes	yes	yes
Central multi-level control ⁴⁾		yes	yes	yes

¹⁾ Each digit indicates successively the number of make and break contacts

²⁾ Information for the case when the relay is excited by a long impulse, although a short impulse is sufficient for the change of the contact condition; in case of the short impulse, the power loss is not applied

³⁾ Common orientation lighting (glow lamp/LED) on one push-button takes 0.5 mA, altogether it is possible to connect 5 push-buttons with orientation lighting (5 x 0.5 = 2.5 mA). To increase the number of push-buttons use the OD-MIR-BK compensation block

⁴⁾ The OD-MIG-CO2 block for multi-level central control is necessary to use for multi-level central control. Max. number of MIG impulse relays in a group controlled by 1 piece of OD-MIG-CO2: 20 pcs (for MIG with U_c = AC 230 V) and 2 pcs (for MIG with U_c = AC 24 V)

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Switching of lights - maximum number of light fittings per one contact at AC 230 V, 50 Hz (utilization category AC-5a, AC-5b)

Maximum number of light bulbs

Impulse memory relay Type	Lighting fitting										
	15 W 0.07 A	25 W 0.11 A	40 W 0.17 A	60 W 0.26 A	75 W 0.33 A	100 W 0.44 A	150 W 0.65 A	200 W 0.87 A	300 W 1.3 A	500 W 2.17 A	1 000 W 4.35 A
MIG-20	133	80	50	33	27	20	13	10	7	4	2
MIG-32	233	140	88	58	47	35	23	18	12	7	4
MIG-63	636	280	175	117	93	70	47	35	23	14	7

Maximum total current of sources for LED

Impulse memory relay Type	Max. total current
MIG-20	6 A
MIG-32	12 A
MIG-63	25 A

Maximum number of fluorescent tubes

Impulse memory relay Type	Uncompensated			Compensated in parallel			DUO connection		
	18 W 0.37 A	36 W 0.43 A	58 W 0.67 A	18 W (4.5 µF) 0.19 A	36 W (4.5 µF) 0.29 A	58 W (7 µF) 0.46 A	2x 18 W 0.26 A	2x 36 W 0.48 A	2x 58 W 0.78 A
MIG-20	43	37	24	22	22	14	62	33	21
MIG-32	43	37	24	33	33	21	62	33	21
MIG-63	86	74	48	73	73	47	123	67	41

Maximum number of fluorescent tubes with electronic ballast

Impulse memory relay Type	With electronic ballast					
	18 W 0.09 A	36 W 0.16 A	58 W 0.25 A	2x 18 W 0.17 A	2x 36 W 0.31 A	2x 58 W 0.48 A
MIG-20	67	38	24	35	19	13
MIG-32	133	75	48	71	39	25
MIG-63	278	156	100	147	81	52

Maximum number of high-pressure mercury discharge lamps

Impulse memory relay Type	Uncompensated								Compensated in parallel							
	50 W	80 W	125 W	250 W	400 W	700 W	1 000 W	50 W (7 µF)	80 W (8 µF)	125 W (10 µF)	250 W (18 µF)	400 W (25 µF)	700 W (40 µF)	1 000 W (60 µF)		
	0.6 A	0.8 A	1.2 A	2.2 A	3.3 A	5.4 A	7.5 A	0.3 A	0.4 A	0.6 A	1.2 A	1.8 A	3.4 A	4.8 A		
MIG-20	27	20	13	7	5	3	2	14	13	10	6	4	3	2		
MIG-32	27	20	13	7	5	3	2	21	19	15	8	6	4	3		
MIG-63	53	40	27	15	10	6	4	47	41	33	18	13	8	6		

Maximum number of metal halide discharge lamps

Impulse memory relay Type	Uncompensated								Compensated in parallel							
	35 W	70 W	150 W	250 W	400 W	1 000 W	2 000 W	35 W (6 µF)	70 W (12 µF)	150 W (20 µF)	250 W (32 µF)	400 W (45 µF)	1 000 W (85 µF)	2 000 W (125 µF)		
	0.5 A	1 A	1.8 A	3 A	4.6 A	9.7 A	12.2 A	0.23 A	0.42 A	0.77 A	1.26 A	2 A	5 A	10.5 A		
MIG-20	32	16	9	5	3	2	1	17	8	5	3	2	1	-		
MIG-32	32	16	9	5	3	2	1	25	13	8	5	3	2	1		
MIG-63	64	32	18	11	7	3	3	55	28	17	10	7	4	3		

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Maximum number of high-pressure sodium discharge lamps

Impulse memory relay Type	Uncompensated				Compensated in parallel				with electronic ballast			
	150 W	250 W	400 W	1 000 W	150 W (20 µF)	250 W (32 µF)	400 W (45 µF)	1 000 W (100 µF)	150 W	250 W	400 W	1 000 W
	1.8 A	3 A	4.4 A	10.3 A	0.77 A	1.26 A	2 A	5.1 A	0.72 A	1.3 A	2 A	5 A
MIG-20	13	5	4	1	5	3	2	-	8	5	3	1
MIG-32	13	5	4	1	8	5	3	1	17	9	6	2
MIG-63	27	11	7	3	17	10	7	3	35	19	13	5

Maximum number of low-pressure sodium discharge lamps

Impulse memory relay Type	Uncompensated						Compensated in parallel					
	18 W	35 W	55 W	90 W	135 W	180 W	18 W (5 µF)	35 W (20 µF)	55 W (20 µF)	90 W (26 µF)	135 W (40 µF)	180 W (40 µF)
	0.4 A	0.6 A	0.6 A	0.9 A	0.9 A	0.9 A	0.35 A	0.28 A	0.35 A	0.55 A	0.8 A	1 A
MIG-20	40	27	27	18	18	18	20	5	5	4	3	3
MIG-32	40	27	27	18	18	18	30	8	8	6	4	4
MIG-63	80	53	53	36	36	36	66	17	17	13	8	8

Maximum number of compact fluorescent tubes with internal ballast

Impulse memory relay Type	7 W	9 W	11 W	15 W	18 W	20 W	21 W	23 W	30 W
	0.08 A	0.1 A	0.12 A	0.16 A	0.2 A	0.21 A	0.22 A	0.24 A	0.15 A
MIG-20	71	56	45	33	28	25	24	22	17
MIG-32	143	111	91	67	56	50	48	43	33
MIG-63	300	233	191	140	117	105	100	91	70

Switching of resistance or slightly inductive load in DC circuits (utilization category DC-1 (L/R ≤ 1 ms))

Impulse memory relay Type	Operating voltage U _e	Contact load			
		1 contact in series	2 contact in series	3 contact in series	4 contact in series
MIG-20	DC 24 V	20 A	20 A	-	-
	DC 48 V	15 A	18 A	-	-
	DC 60 V	10 A	15 A	-	-
	DC 110 V	5 A	8 A	-	-
	DC 220 V	0.5 A	4 A	-	-
MIG-32	DC 24 V	32 A	32 A	32 A	32 A
	DC 48 V	25 A	28 A	32 A	32 A
	DC 60 V	20 A	22 A	28 A	32 A
	DC 110 V	7 A	12 A	22 A	25 A
	DC 220 V	0.7 A	6 A	18 A	20 A
MIG-63	DC 24 V	63 A	63 A	63 A	63 A
	DC 48 V	35 A	42 A	63 A	63 A
	DC 60 V	30 A	34 A	60 A	63 A
	DC 110 V	10 A	16 A	35 A	63 A
	DC 220 V	1.2 A	10 A	30 A	63 A

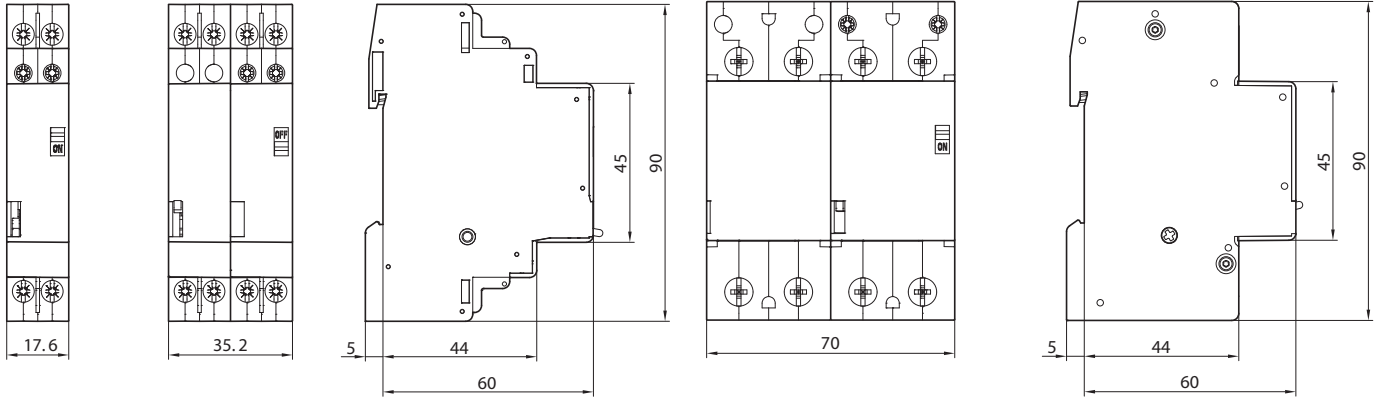
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Dimensions

MIG-20
MIG-32 (11, 20)*

MIG-32 (31, 40)*

MIG-63



* Arrangement of contacts

Diagram

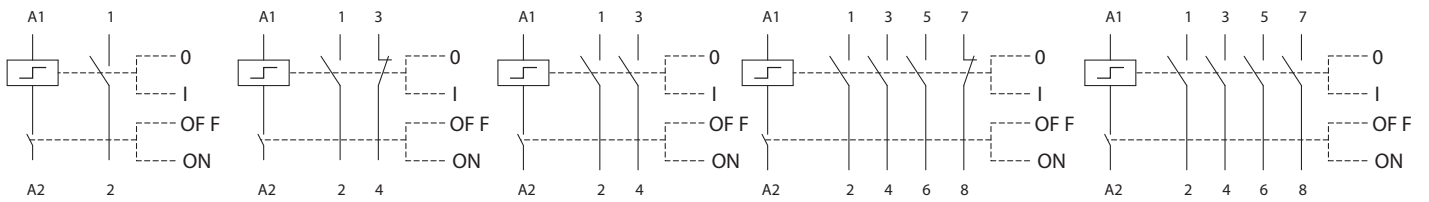
MIG--10-....

MIG--11-....

MIG--20-....

MIG--31-....

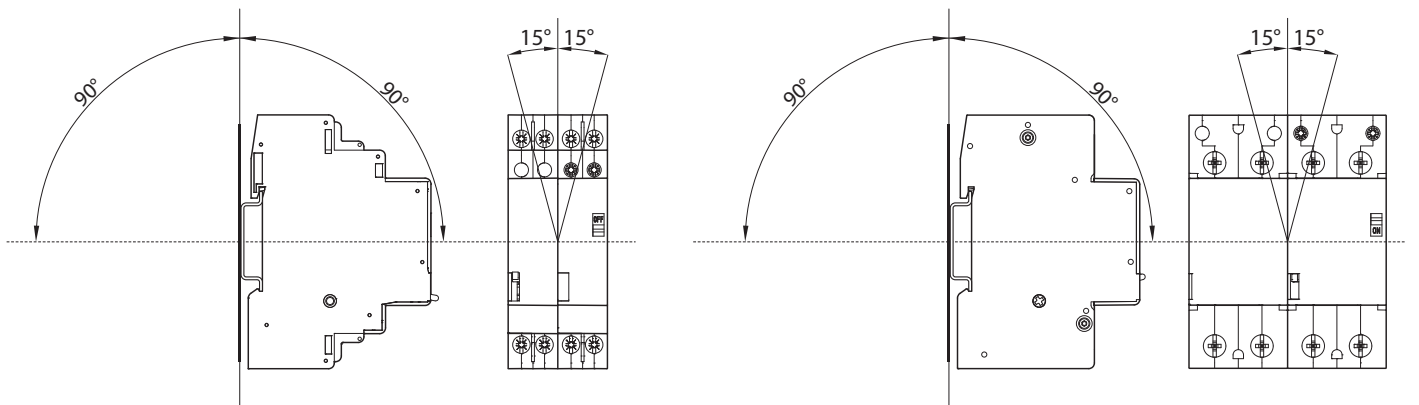
MIG--40-....



Working position

MIG-20
MIG-32

MIG-63

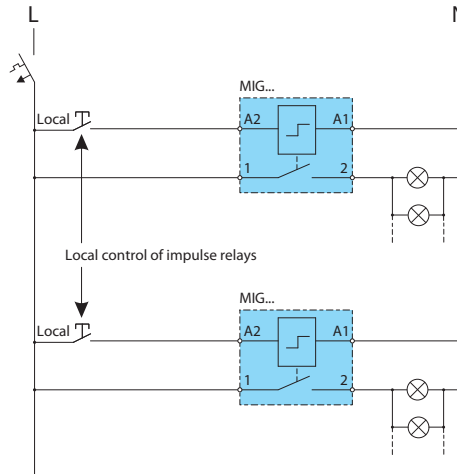


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Connection examples

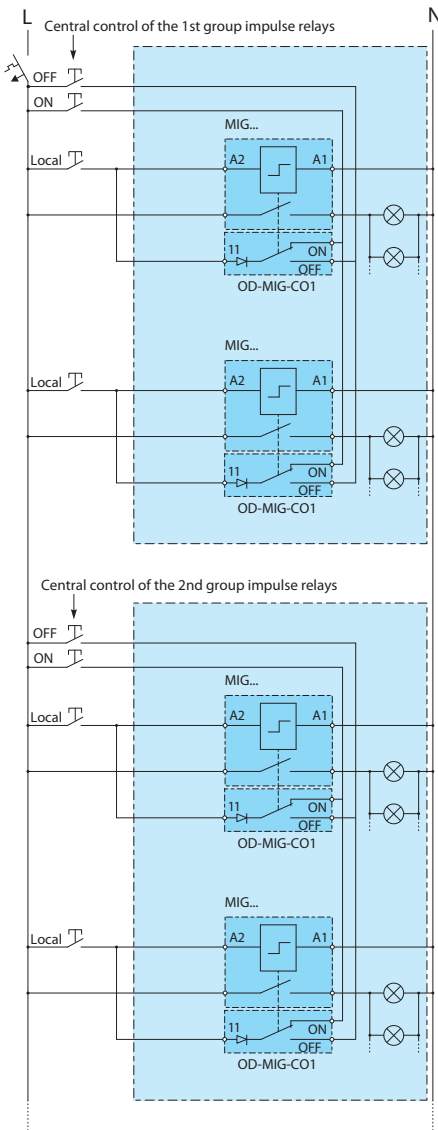
Local control

Each impulse relay is locally controlled by push-buttons.



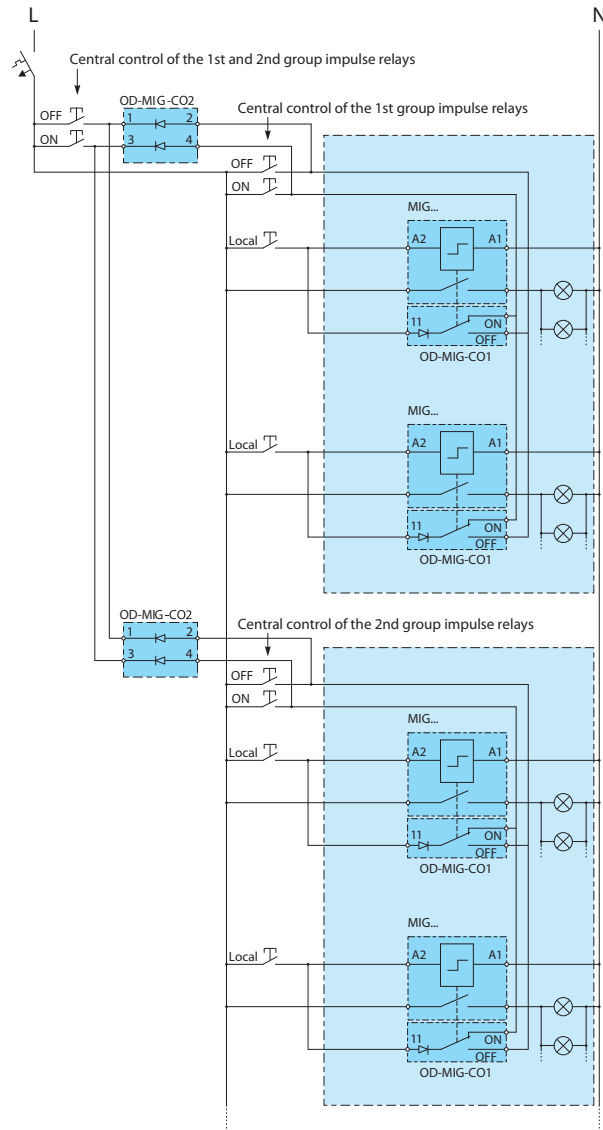
Local + central control

Each impulse relay is locally controlled by push-buttons (local control); each level or set of impulse relays is controlled simultaneously from a point (central control).



Local + central + central multi-level control

Each impulse relay is locally controlled by push-buttons (local control); each level or set of impulse relays is controlled simultaneously from a point (central control); all levels are jointly controlled by a single command from a point (central multi-level control).



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Accessories

Auxiliary switch PS-MIG-1100

- Mainly for the indication of position of main contacts, partly for increasing the number of the „power“ contacts.
- Installation: by means of plastic latches, and tightening the screw on the right side of the impulse relay.
- It is possible to mount one auxiliary switch on one impulse relay.
- Separation of impulse relay circuits – auxiliary switch for application of SELV/PELV.
- Width: 9 mm.
- $I_e = 6 \text{ A (AC-15, AC-21)}$, $U_e = \text{AC } 250 \text{ V}$.

Arrangement of contacts ¹⁾	Typ	Order code	Number of modules	Weight [kg]	Package [pcs]
11	PS-MIG-1100	OEZ:43208	0.5	0.030	1

¹⁾ Each digit indicates successively the number of make and break contacts

Central control block OD-MIG-CO1

- It enables central control of relays.
- It contains a switch and diodes, which ensure correct transfer of the signal to the impulse relays - see the diagram and connection examples.
- Installation: by means of plastic latches, and tightening the screw on the right side of the impulse relay.
- Description: each impulse memory relay is locally controlled by push-buttons (local control); each level or set of impulse memory relays is controlled simultaneously from a point (central control); all levels are jointly controlled by a single command from a point (central control).
- $U_e = \text{AC } 250 \text{ V}$.

Multi-level central control block OD-MIG-CO2

- It enables multi-level central control of relays.
- It contains diodes, which ensure correct transfer of the signal to the impulse relays - see the diagram and connection examples.
Max. number of MIG impulse relays in a group controlled by 1 piece of OD-MIG-CO2:
- 20 pcs (for MIG with $U_c = \text{AC } 230 \text{ V}$)
- 2 pcs (for MIG with $U_c = \text{AC } 24 \text{ V}$).
- Mounting: on „U“ rail.
- Description: each impulse memory relay is locally controlled by push-buttons (local control); each level or set of impulse memory relays is controlled simultaneously from a point (central control); all levels are jointly controlled by a single command from a point (central control); all levels are jointly controlled by a single command from a point (central multi-level control).
- $U_e = \text{AC } 250 \text{ V}$.

Unit	Type	Order code	Number of modules	Weight [kg]	Package [pcs]
For central control	OD-MIG-CO1	OEZ:43210	0.5	0.030	1
For multi-level central control	OD-MIG-CO2	OEZ:43211	0.5	0.030	1

Compensation block OD-MIR-BK

- It enables control of the MIG relay up to 50 control push-buttons with glow lamp/LED. With 0.5 mA/push-button, max. consumption is $50 \times 0.5 = 25 \text{ mA}$.
- Connection: parallel with MIG (compensation block OD-MIR-BK is a common accessory with impulse relay MIR), see page 46.
- Rated voltage: AC 230 V.
- Max. voltage: AC 400 V.
- 9 capacity: $3 \times 1 \mu\text{F}$.

Type	Order code	Number of modules	Weight [kg]	Package [pcs]
OD-MIR-BK	OEZ:35676	1	0.055	1

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Specifications

Type		PS-MIG-1100	OD-MIG-CO1	OD-MIG-CO2
Standards		EN 60947-5-1	EN 60947-5-1	EN 60947-5-1
Approval marks				
Contacts				
Arrangement of contacts ¹⁾		11	001	-
Rated thermal current	I_{th}	6 A	-	-
Rated operating voltage	U_e	AC 230 V	AC 230 V	AC 230 V
Rated operating current	I_e	AC-15 1faz. AC 230 V 6 A	-	-
Rated frequency	f_n	50/60 Hz	50/60 Hz	50/60 Hz
Min. switched power		$\geq 12 V / \geq 5 mA$	-	-
Electrical endurance at I_e		100 000 cycles	-	-
Mechanical endurance		1 000 000 cycles	1 000 000 cycles	-
Power loss at I_e		0.3 W	-	-
Maximum backup fuse gL/gG against short-circuit, coordination type 1		6 A	-	-
Min. distance between open contacts		> 3 mm	-	-
Connection - conductor rigid		1 ÷ 4 mm ²	1 ÷ 4 mm ²	1 ÷ 4 mm ²
Connection - conductor flexible		1 ÷ 4 mm ²	1 ÷ 4 mm ²	1 ÷ 4 mm ²
Torque		0.8 Nm	0.8 Nm	0.8 Nm
Screw type		PZ1	PZ1	PZ1
Other data				
Rated insulation voltage	U_i	AC 440 V	AC 250 V	AC 250 V
Rated impulse withstand voltage	U_{imp}	4 kV	-	-
Degree of protection		IP20	IP20	IP20

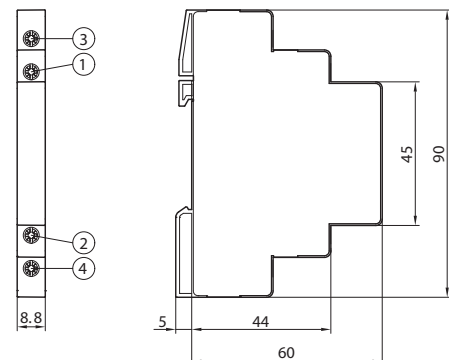
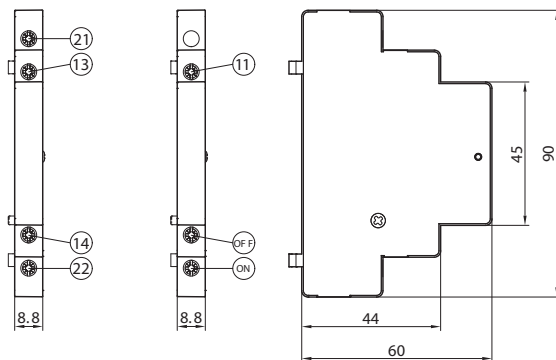
¹⁾ Each digit indicates successively the number of make, break and break-make contacts

Dimensions

PS-MIG-1100

OD-MIG-CO1

OD-MIG-CO2



Diagram

PS-MIG-1100

OD-MIG-CO1

OD-MIG-CO2

