

# IMPULSE MEMORY RELAYS MIG



MIG-20-10-A230



MIG-32-11-A230



MIG-63-31-A230

### Impulse relay - mechanical

- For switching of electric circuits by impulse command from more points in a corridor, on stairs, in the whole house etc.
- Power impulse relay with  $I_{in}$  up to 63 A and control voltage AC 24 V and AC 230 V.
- Mainly for control of high power lighting circuits, see the tables below.
- The lighting circuits can be controlled by push-buttons instead of a combination of crossbar and three-way switches.
- Saving on the cost of wires - 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-C01 central control block and OD-MIG-C02 multi-level central control block).
- 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 <sup>1)</sup>	Rated control voltage $U_c$	Type	Order code	Number of modules	Weight [kg]	Package [pcs]
10	AC 230 V	<b>MIG-20-10-A230</b>	OEZ:43184	1	0.135	1
11	AC 230 V	<b>MIG-20-11-A230</b>	OEZ:43185	1	0.135	1
20	AC 230 V	<b>MIG-20-20-A230</b>	OEZ:43186	1	0.135	1

<sup>1)</sup> Each digit indicates successively the number of make and break contacts.

### Impulse relay 32 A

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

<sup>1)</sup> Each digit indicates successively the number of make and break contacts.

### Impulse relay 63 A

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

<sup>1)</sup> Each digit indicates successively the number of make and break contacts.

## IMPULSE MEMORY RELAYS MIG



PS-MIG-1100



OD-MIG-C01



OD-MIG-C02



OD-MIR-BK

### Accessories

#### Auxiliary switch PS-MIG-1100

- Mainly for the indication of position of main contacts.
- Contacts: 1 make + 1 break.
- 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.
- They are suitable for application in SELV and PELV circuits - sufficient insulation is provided between the circuit breaker and the auxiliary switch..
- Width: 9 mm.
- AC-15, AC-21:  $I_c = 6\text{ A}$ ,  $U_c = 250\text{ V}$ .

Type	Order code	Number of modules	Weight [kg]	Package [pcs]
PS-MIG-1100	OEZ:43208	0.5	0.030	1

#### Central control block OD-MIG-C01

- 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 relevant point (central control).
- Rated operating voltage: AC 250 V.

Type	Order code	Number of modules	Weight [kg]	Package [pcs]
OD-MIG-C01	OEZ:43210	0.5	0.030	1

#### Multi-level central control block OD-MIG-C02

- 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-C02:
  - 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 relevant point (central control); all levels are jointly controlled by a single command from a point (multi-level central control).
- Rated operating voltage: AC 250 V.

Type	Order code	Number of modules	Weight [kg]	Package [pcs]
OD-MIG-C02	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 F28.
- Rated voltage: AC 230 V
- Max. voltage: AC 400 V.
- 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

## IMPULSE MEMORY RELAYS MIG

### Specifications

Type		MIG-20	MIG-32	MIG-63		
Standards		EN 60669-2-2	EN 60669-2-2	EN 61095 EN 60947-4-1		
Approval marks						
<b>Main circuit (contact)</b>						
Arrangement of contacts <sup>1)</sup>		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	63 A		
		AC-2	10 A	32 A		
		AC-3/AC-7b	7 A	10 A		
Switched power <sup>2)</sup>	$P_e$	AC-1/AC-7a	1-phase AC 230 V	4.4 kW	7 kW	13.8 kW
			3-phase AC 400 V	-	21 kW	41.5 kW
		AC-2	1-phase AC 230 V	1.5 kW	2.4 kW	4.8 kW
			3-phase AC 400 V	-	7.2 kW	14.4 kW
		AC-3/AC-7b	1-phase AC 230 V	0.5 kW	1.1 kW	3.7 kW
			3-phase AC 400 V	-	5.5 kW	15 kW
Min. switched voltage/current		10 V / 100 mA	10 V / 100 mA	10 V / 100 mA		
Max. switching frequency		AC-1, AC-7a	600 operating cycles / hr	450 operating cycles / hr	360 operating cycles / hr	
		AC-2	120 operating cycles / hr	120 operating cycles / hr	120 operating cycles / hr	
		AC-3, AC-7b	600 operating cycles / hr	450 operating cycles / hr	360 operating cycles / hr	
		DC-1	300 operating cycles / hr	300 operating cycles / hr	300 operating cycles / hr	
		no load	900 operating cycles / hr	450 operating cycles / hr	450 operating cycles / hr	
Power loss at $I_e$ (1 pole)		1.5 W	3 W	3.5 W		
Mechanical endurance		10 000 000 operating cycles	10 000 000 operating cycles	10 000 000 operating cycles		
Electrical endurance		100 000 operating cycles	100 000 operating cycles	100 000 operating 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 <sup>2</sup>	1 ÷ 10 mm <sup>2</sup>	2.5 ÷ 25 mm <sup>2</sup>		
Torque		1.2 Nm	1.2 Nm	2 Nm		
Screw head type		PZ2	PZ2	PZ2		
<b>Control circuit (coil)</b>						
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 <sup>3)</sup>		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.) <sup>4)</sup>		2.5 mA	2.5 mA	2.5 mA		
Connection - conductor rigid and flexible		1 ÷ 4 mm <sup>2</sup>	1 ÷ 4 mm <sup>2</sup>	1 ÷ 4 mm <sup>2</sup>		
Torque		0.6 Nm	0.6 Nm	0.6 Nm		
Screw head type		PZ1	PZ1	PZ1		
<b>Other data</b>						
Rated insulation voltage	$U_i$	440 V	440 V	440 V		
Rated impulse withstand voltage	$U_{imp}$	4 kV	4 kV	4 kV		
Mounting on "U" rail according 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		✓	✓	✓		
Central control		✓	✓	✓		
Multi-level central control <sup>5)</sup>		✓	✓	✓		

<sup>1)</sup> Each digit indicates successively the number of make and break contacts.

<sup>2)</sup> Switched power is shown for categories AC-5a a AC-5b in tables on pages F23 and F24.

<sup>3)</sup> 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.

<sup>4)</sup> 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.

<sup>5)</sup> 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  $U_c = 230$  V) and 2 pcs (for MIG with  $U_c = 24$  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	467	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	80 W 0.40 A	2x 18 W 0.17 A	2x 36 W 0.31 A	2x 58 W 0.48 A	2x 80 W 0.76 A
MIG-20	67	38	24	15	35	19	13	8
MIG-32	133	75	48	30	71	39	25	16
MIG-63	278	156	100	63	147	81	52	33

### Maximum number of high-pressure mercury discharge lamps

Impulse memory relay Type	Uncompensated							Compensated in parallel						
	50 W 0.6 A	80 W 0.8 A	125 W 1.2 A	250 W 2.2 A	400 W 3.3 A	700 W 5.4 A	1 000 W 7.5 A	50 W (7 µF) 0.3 A	80 W (8 µF) 0.4 A	125 W (10 µF) 0.6 A	250 W (18 µF) 1.2 A	400 W (25 µF) 1.8 A	700 W (40 µF) 3.4 A	1 000 W (60 µF) 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

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### Maximum number of metal halide discharge lamps

Impulse memory relay	Uncompensated							Compensated in parallel						
	35 W 0.5 A	70 W 1.0 A	150 W 1.8 A	250 W 3.0 A	400 W 4.6 A	1 000 W 9.7 A	2 000 W 12.2 A	35 W (6 µF) 0.23 A	70 W (12 µF) 0.42 A	150 W (20 µF) 0.77 A	250 W (32 µF) 1.26 A	400 W (45 µF) 2.0 A	1 000 W (85 µF) 5.0 A	2 000 W (125 µF) 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

### Maximum number of high-pressure sodium discharge lamps

Impulse memory relay	Uncompensated				Compensated in parallel				with electronic ballast			
	150 W 1.8 A	250 W 3 A	400 W 4.4 A	1 000 W 10.3 A	150 W (20 µF) 0.77 A	250 W (32 µF) 1.26 A	400 W (45 µF) 2 A	1 000 W (100 µF) 5.1 A	150 W 0.72 A	250 W 1.3 A	400 W 2 A	1 000 W 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	Uncompensated						Compensated in parallel					
	18 W 0.4 A	35 W 0.6 A	55 W 0.6 A	90 W 0.9 A	135 W 0.9 A	180 W 0.9 A	18 W (5 µF) 0.35 A	35 W (20 µF) 0.28 A	55 W (20 µF) 0.35 A	90 W (26 µF) 0.55 A	135 W (40 µF) 0.8 A	180 W (40 µF) 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

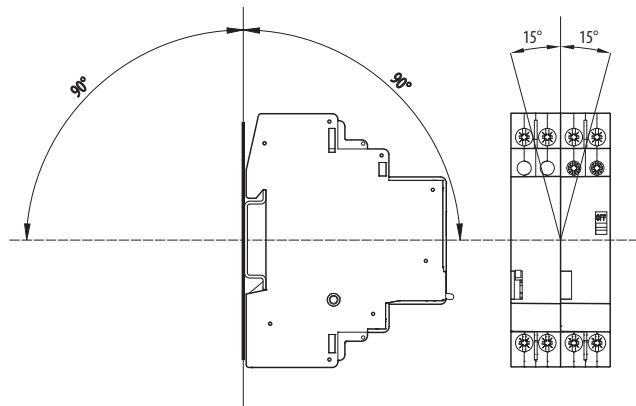
### Switching of resistance or slightly inductive load in DC circuits (utilization category DC-1 (L/R ≤ 1 ms))

Impulse memory relay	Operating voltage U <sub>e</sub>	Contact load			
		1 contact	2 contacts in series	3 contacts in series	4 contacts 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

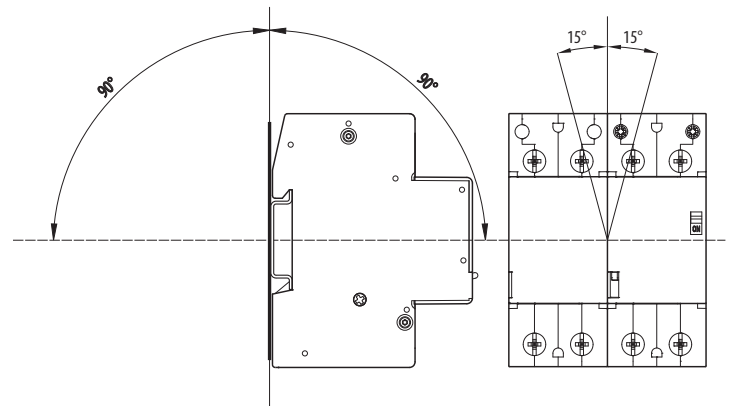
# IMPULSE MEMORY RELAYS MIG

## Working position

MIG-20  
MIG-32



MIG-63

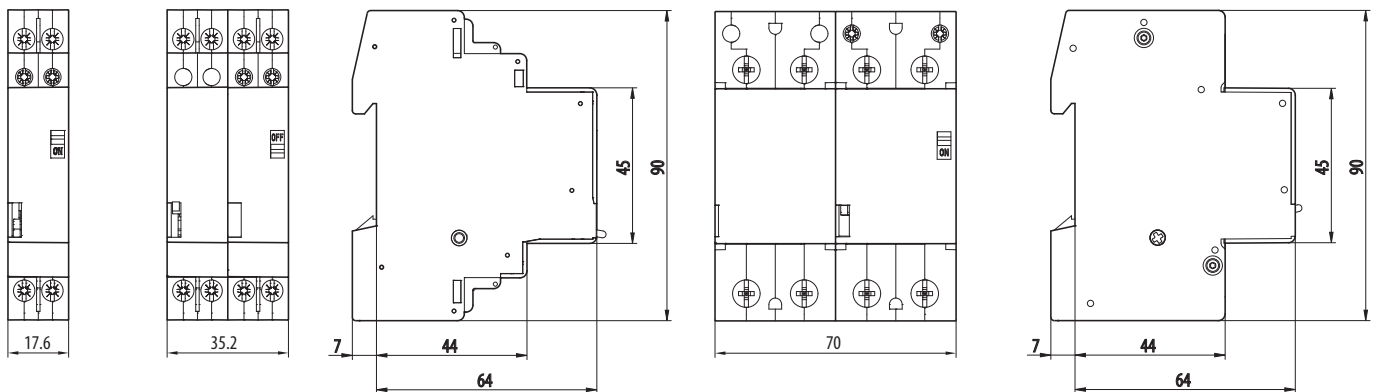


## Dimensions

MIG-20 (10, 11, 20)\*  
MIG-32 (11, 20)\*

MIG-32 (31, 40)\*

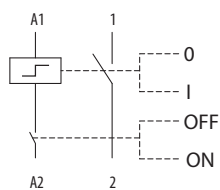
MIG-63



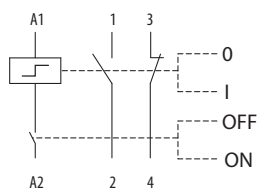
\* Arrangement of contacts

## Diagram

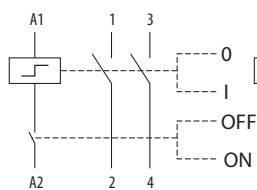
MIG--10....



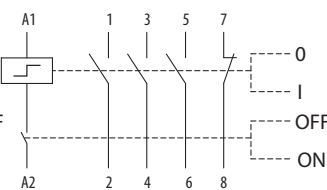
MIG--11....



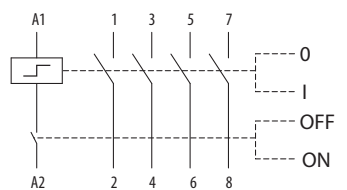
MIG--20....



MIG--31....



MIG--40....

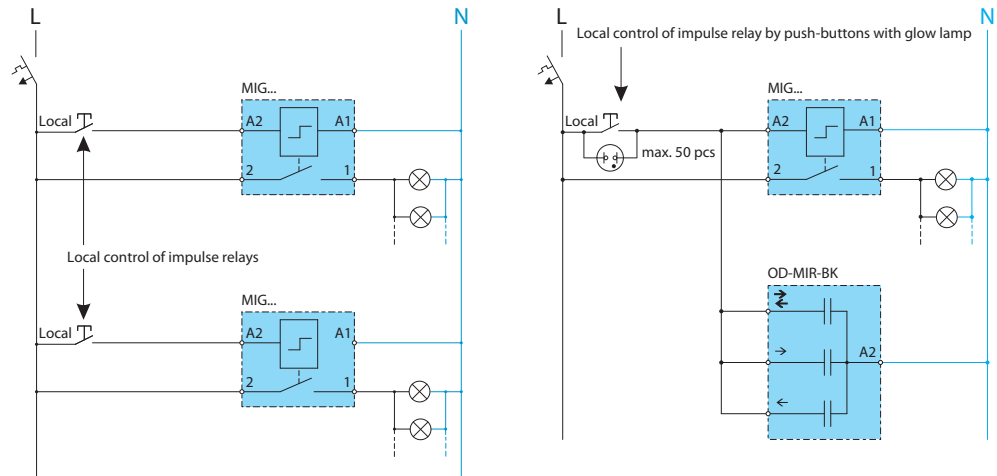


# IMPULSE MEMORY RELAYS MIG

## Connection examples

### Local control

Each impulse relay is locally controlled by push-buttons.

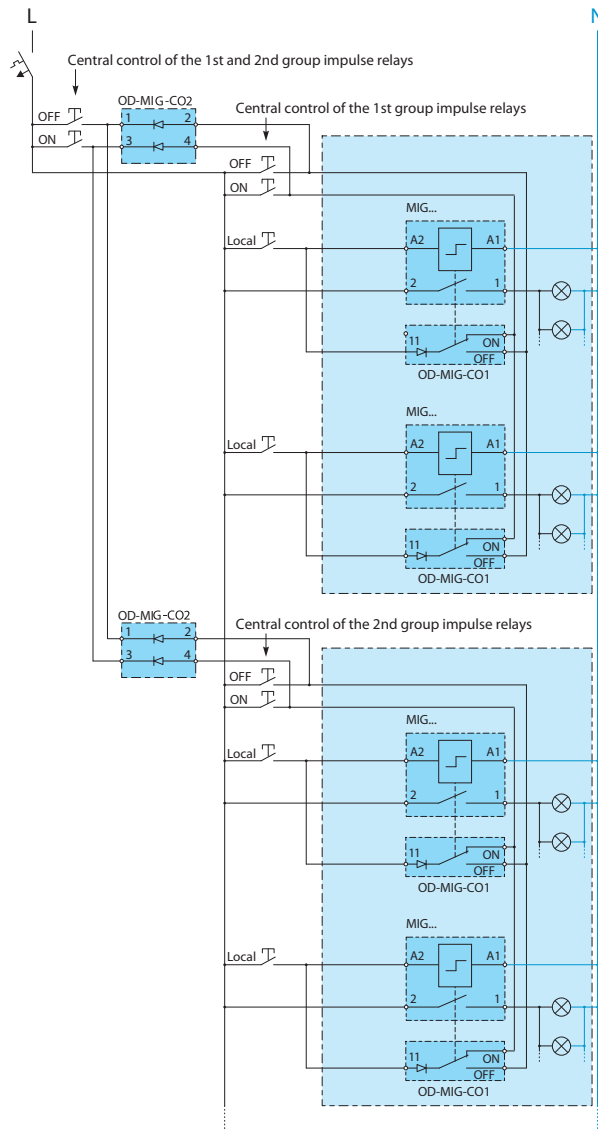
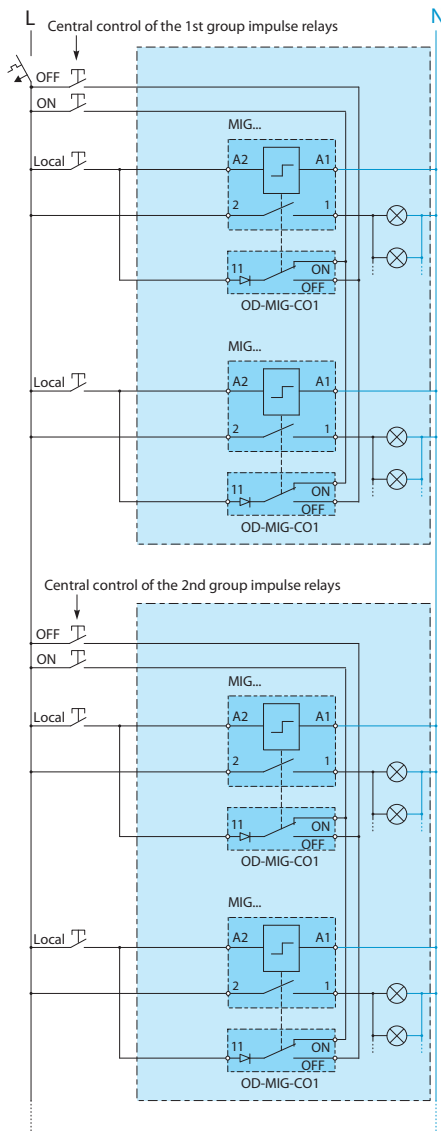


### Local + central control

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

### Local + central + multi-level central control

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



# IMPULSE MEMORY RELAYS MIG

## Specifications

Type		PS-MIG-1100	OD-MIG-C01	OD-MIG-C02
Standards		EN 60947-5-1	EN 60947-5-1	EN 60947-5-1
Approval marks		CE EAC	CE EAC	CE EAC
<b>Contacts</b>				
Arrangement of contacts <sup>1)</sup>		11	001	-
Rated thermal current	$I_{th}$	6 A	-	-
Rated operating voltage	$U_e$	AC 250 V	AC 250 V	AC 250 V
Rated operating current	$I_e$	AC-15 1-phase AC 230 V	6 A	-
Rated frequency	$f_n$	50/60 Hz	50/60 Hz	50/60 Hz
Min. switched voltage/current		12 V / 5 mA	-	-
Electrical endurance at $I_e$		100 000 operating cycles	-	-
Mechanical endurance		1 000 000 operating cycles	1 000 000 operating 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 <sup>2</sup>	1 ÷ 4 mm <sup>2</sup>	1 ÷ 4 mm <sup>2</sup>
Connection - conductor flexible		1 ÷ 4 mm <sup>2</sup>	1 ÷ 4 mm <sup>2</sup>	1 ÷ 4 mm <sup>2</sup>
Torque		0.8 Nm	0.8 Nm	0.8 Nm
Screw type		PZ1	PZ1	PZ1
<b>Other data</b>				
Rated insulation voltage	$U_i$	AC 440 V	AC 250 V	AC 250 V
Rated impulse withstand voltage	$U_{imp}$	4 kV	-	-
Ambient temperature		-25 ÷ 70 °C	-25 ÷ 70 °C	-25 ÷ 70 °C
Degree of protection		IP20	IP20	IP20

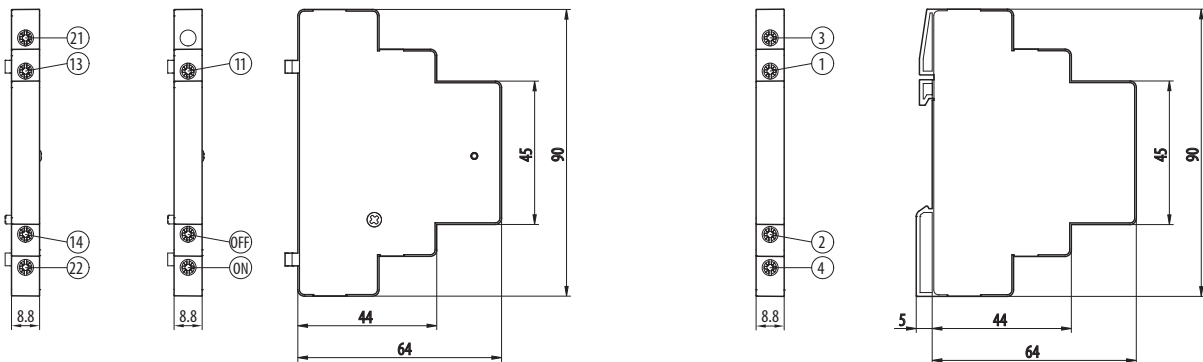
<sup>1)</sup> Each digit indicates successively the number of make, break and break-make contacts.

## Dimensions

PS-MIG-1100

OD-MIG-C01

OD-MIG-C02



## Diagram

PS-MIG-1100

OD-MIG-C01

OD-MIG-C02

