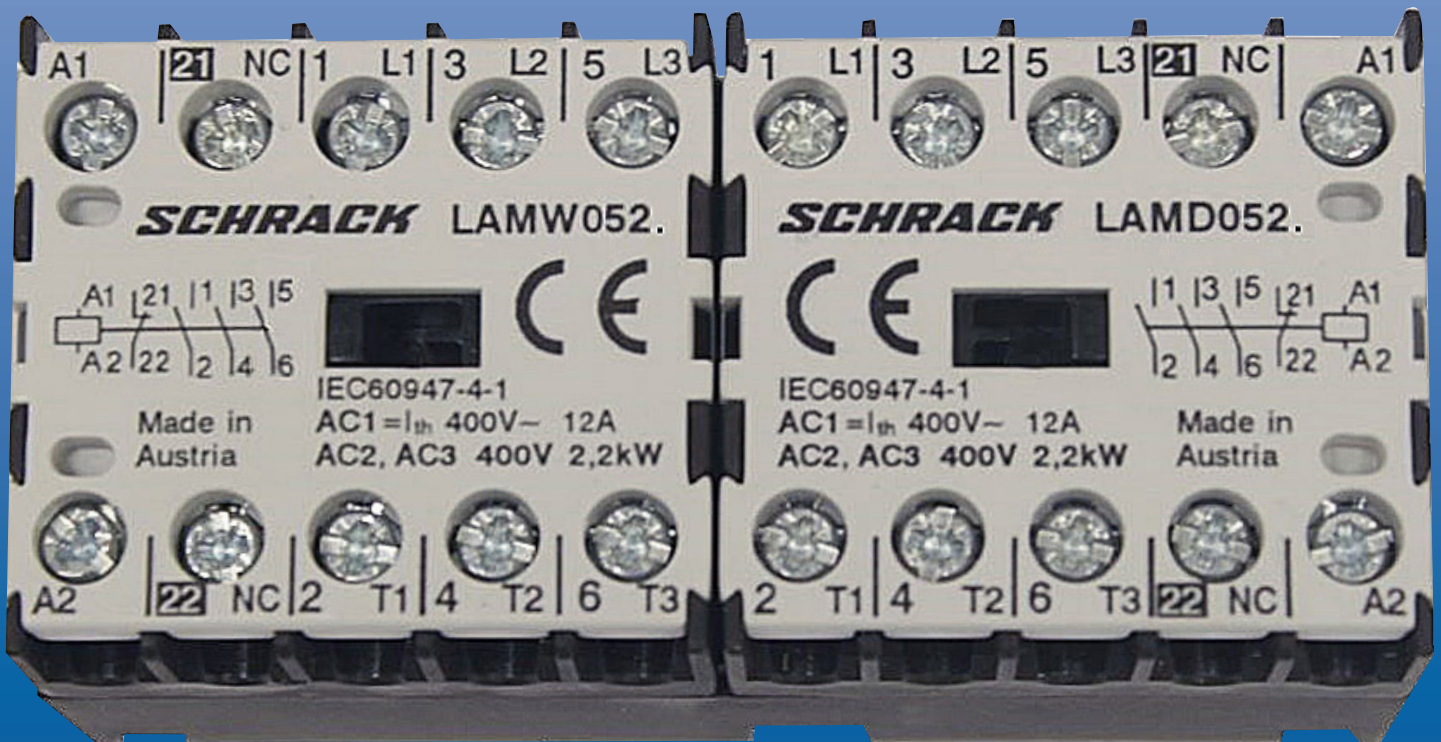


Micro-Contactors LAM

Edition 09/2017



- ✓ The contactor, as small as a relay – the smallest in the world
- ✓ > 3mm contact clearance acc. IEC60335-1 for safety-related applications
- ✓ Reversing contactors with mechanical interlock



ONLINE SHOPPING!

In the office and on the go with the Live Phone App

MICRO AUXILIARY CONTACTORS 4-POLE

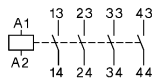


Ratings	Contacts ¹⁾	Distinc. number acc. to	Type	Coil voltage	Pack pcs.	Weight kg/pc.
AC15	AC15	Rated current		0 24V 50Hz/60Hz		
230V	400V	I_{th} ↓ ↓		3 220-240V 50Hz/60Hz		
A	A	A S Ö EN50011		5 24V DC		

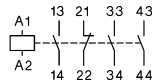
4-pole, with screw terminals

3	1,5	5	4	-	40E	LAMH037.	10	0,07
3	1,5	5	3	1	31E	LAMH038.	10	0,07
3	1,5	5	2	2	22E	LAMH039.	10	0,07

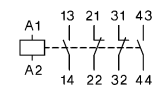
LAMH037.



LAMH038.



LAMH039.



MICRO CONTACTORS 3-POLE



Power ratings	Rated current	Aux. contacts ¹⁾ built-in	Type	Coil voltage	Pack pcs.	Weight kg/pc.
AC2, AC3	AC1			0 24V 50Hz/60Hz		
380V				3 220-240V 50Hz/60Hz		
400V				4 380-400V 50Hz, 400-440V 60Hz		
415V	440V	↓ ↓		5 24V DC		
kW	A	S Ö				

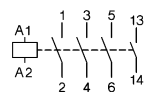
3-pole, with screw terminals

2,2	12	1	-	LAMD051.	10	0,07
2,2	12	-	1	LAMD052.	10	0,07

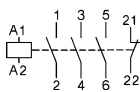
4-pole, with screw terminals

2,2	12	-	-	LAMD054.	10	0,07
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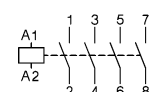
LAMD051.



LAMD052.

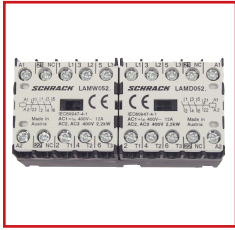


LAMD054.



¹⁾ Contacts suitable for electronic circuits, according to EN947-5-4 for rated voltage 24V DC (test ratings 17V DC, 5mA). Positively guided contacts.

MICRO REVERSING CONTACTORS, MECHANICAL INTERLOCKED

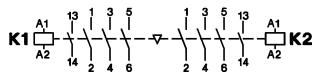


Power ratings	Rated current	Aux. contacts ¹⁾ built-in	Type	Coil voltage	Pack pcs.	Weight kg/pc.
AC2, AC3	AC1			0 24V 50Hz/60Hz		
380V				3 220-240V 50Hz/60Hz		
400V				4 380-400V 50Hz, 400-440V 60Hz		
415V	690V	1 1/2		5 24V DC		
kW	A	S Ö				

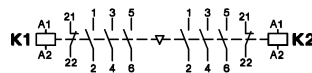
3-pole, with screw terminals

2,2	12	1	-	LAMW051.	1	0,14
2,2	12	-	1	LAMW052.	1	0,14

LAMW051.



LAMW052.



SNAP-ON ADAPTOR



For Type	Specification	Type	Pack pcs.	Weight kg/pc.
LAMD, LAMW ²⁾ , LAMH	Adaptor for snap-on mounting to DIN-rail TS35	LAMZTS35	10	0,0061

DIN-RAIL TS15, 1000mm



For Type	Specification	Type	Pack pcs.	Weight kg/pc.
LAMD, LAMW, LAMH	DIN-rail TS15 length 1000mm	LAMZTS15	1	0,02

¹⁾ Contacts suitable for electronic circuits, according to EN947-5-4 for rated voltage 24V DC (test ratings 17V DC, 5mA). Positively guided contacts.

²⁾ Two adaptors are necessary for one reversing unit LAMW....

TECHNICAL DATA

Data according to IEC 60947-4-1, VDE 0660, EN 60947-4-1

Main Contacts	Type	LAMD, LAMW
Rated insulation voltage U_i	V~	440 ¹⁾
Making capacity I_{eff} at $U_e = 440V\sim$	A	65
Breaking capacity I_{eff} at $400V\sim$ $\cos \phi = 0,65$	A	50
Utilization category AC1		
Switching of resistive load		
Rated operational current $I_e (=I_{th})$ at 40°C, open	A	12
Rated operational power of three-phase resistive loads 50-60Hz, $\cos \phi = 1$	230V kW	4,7
	240V kW	4,8
	400V kW	8,3
	415V kW	8,6
	440V kW	9
Rated operational current $I_e (=I_{th})$ at 60°C, enclosed	A	8
Rated operational power of three-phase resistive loads 50-60Hz, $\cos \phi = 1$	230V kW	3,1
	240V kW	3,3
	400V kW	5,5
	415V kW	5,7
	440V kW	6
Minimum cross-section of conductor at load with $I_e (=I_{th})$	mm ²	1,5
Utilization category AC2 and AC3		
Switching of three-phase motors		
Rated operational current I_e open and enclosed	220V A	6,2
	230V A	6,2
	240V A	5,6
	380-400V A	5
	415-440V A	5
Rated operational power of three-phase motors 50-60Hz	220-240V kW	1,5
	380-440V kW	2,2
Utilization category AC4		
Switching of squirrel cage motors, inching		
Rated operational current I_e open and enclosed	220V A	4,9
	230V A	4,9
	240V A	4,1
	380-400V A	3,5
	415-440V A	3,5
Rated operational power of three-phase motors 50-60Hz	220-240V kW	1,1
	380-440V kW	1,5

¹⁾ Suitable for: earthed-neutral systems, overvoltage category I to III, pollution degree 3 (standard-industry): $U_{imp} = 4kV$.
Data for other conditions on request.

TECHNICAL DATA – CONTINUED

Data according to IEC 60947-4-1, VDE 0660, EN 60947-4-1

Main Contacts	Type	LAMD, LAMW	
Utilization category DC1			
Switching of resistive load	1 pole 24V	A	12
Time constant L/R ≤ 1ms	60V	A	12
Rated operational current I _e	110V	A	-
	220V	A	-
3 pole in series 24V	A	12	
	A	12	
	A	12	
	A	12	
	A	-	
Utilization category DC3 and DC5			
Schalten von Nebenschluß- und Reihenschlußmotoren	1 pole 24V	A	12
	60V	A	-
Time constant L/R ≤ 15ms	110V	A	-
Rated operational current I _e	220V	A	-
	3 pole in series 24V	A	12
	60V	A	12
	110V	A	12
	220V	A	-
Maximum ambient temperature			
Operation	open	°C	-40 to +60 (+90) ¹⁾
	enclosed	°C	-40 to +40
with thermal overload relay	open	°C	-25 to +60
	enclosed	°C	-25 to +40
Storage		°C	-50 to +90
Short circuit protection			
for contactors without thermal overload relay			
Coordination-type "1" according to IEC 947-4-1			
Contact welding without hazard of persons			
max. fuse size	gL (gG)	A	32
Coordination-type "2" according to IEC 947-4-1			
Light contact welding accepted			
max. fuse size	gL (gG)	A	-
Contact welding not accepted			
max. fuse size	gL (gG)	A	-
For contactors with thermal overload relay the device with the smaller admissible backup fuse (contactor or thermal overload relay) determines the fuse size.			
Cable cross-sections			
for contactors			
Main connector	solid or stranded	mm ²	0,5 - 1,5
	flexible	mm ²	0,5 - 1,5
	flexible with multicore cable end	mm ²	0,5 - 1,5
Cables per clamp			2
	solid or stranded	AWG	20 - 14
Frequency of operation z			
without load	1/h		10000
Contactors without	AC3, I _e	1/h	600
thermal overload relay	AC4, I _e	1/h	120
	DC3, I _e	1/h	600
Mechanical life			
AC operated	S x	10 ⁶	3
DC operated	S x	10 ⁶	4
Short time current			
10s--current	A		50
Power loss per pole			
at I _e / AC3 400V	W		0,2
Resistance to shock according to IEC 68-2-27			
Shock time 20ms sine-wave			
AC operated	S	g	2,5
	Ö	g	2,5

¹⁾ With reduced control voltage range 0,9 up to 1,0 x U_i and with reduced rated current I_e / AC1 according to I_e / AC3.

TECHNICAL DATA – CONTINUED

Data according to IEC 60947-5-1, VDE 0660, EN 60947-5-1

Auxiliary Contacts	Type		LAMD, LAMW, LAMH
Rated insulation voltage	U_i	V~	440 ¹⁾
Thermal rated current I_{th} to 440V			
Ambient temperature	40°C	A	5
	60°C	A	3
Power loss per pole	at I_{th}	W	0,25
Utilization category AC15			
Rated operational current I_e	220-240V	A	3
	380-415V	A	1,5
	440V	A	1
Utilization category DC13			
Rated operational current I_e	24V	A	1
Maximum ambient temperature			
Operation	open	°C	-40 to +60 (+90) ²⁾
	enclosed	°C	-40 to +40
Storage		°C	-40 to +90
Short circuit protection short-circuit current 1kA, contact welding not accepted max. fuse size	gL (gG)	A	10
For contactors with thermal overload relay the device with the smaller admissible control fuse (contactor or thermal overload relay) determines the fuse size.			
Power consumption of coils			
AC operated	inrush	VA	9
	sealed	VA	4
		W	1,8
DC operated	inrush	VA	2,5
	sealed	VA	2,5
Operation range of coils in multiples of control voltage U_c		AC	0,85 - 1,1
		DC	0,8 - 1,1
Switching time at control voltage $U_c \pm 10\%$ ³⁾⁴⁾			
AC operated	make time	ms	13 - 18
	release time	ms	5 - 10
	arc duration	ms	10 - 15
DC operated	make time	ms	10 - 20
	release time	ms	2 - 10
	arc duration	ms	10 - 15
Cablecross-section			
all connectors	solid	mm ²	0,5 - 1,5
	flexible	mm ²	0,5 - 1,5
	flexible with multicore cable end	mm ²	0,5 - 1,5
Clamps per pole			2
	solid or stranded	AWG	20 - 14

¹⁾ Suitable for: earthed-neutral systems, overvoltage category I to III, pollution degree 3 (standard-industry): $U_{imp} = 4kV$.
Data for other conditions on request.

²⁾ With reduced control voltage range 0,9 up to 1,0 x U_c and with reduced thermal rated current I_{th} to I_e / AC15.

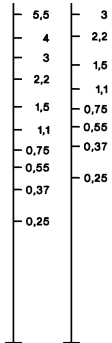
³⁾ Summary switching time = release time + arc duration.

⁴⁾ Release time of NC make time of NO increase when suppressor units for voltage peak protection are used (Varistor, RC-units, diode units).

MOTOR RATING AND BREAKING CURRENT

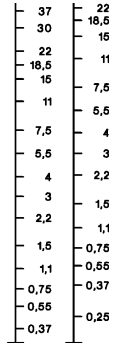
Motor rating
P_n = AC4

380/ 220/
400V 230V
kW kW



Motor rating
P_n = AC3

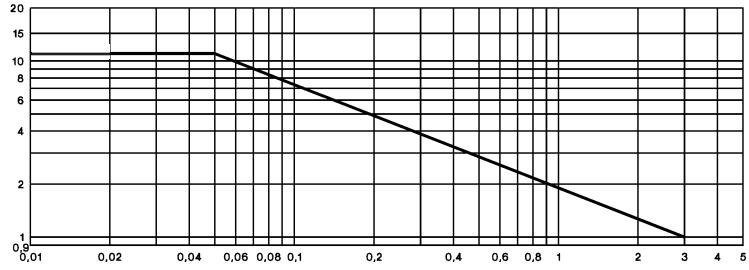
380/ 220/
400V 230V
kW kW



Breaking current
I_e (= I_e = AC1)

A

LAMD, LAMW



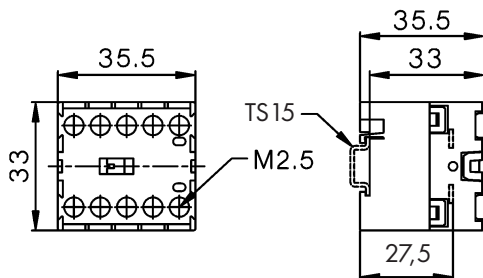
Millions of operations

DIMENSIONS

AC operated

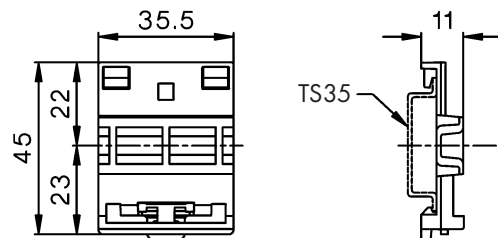
with screw terminals

LAMD
LAMH



Snap-on adaptor

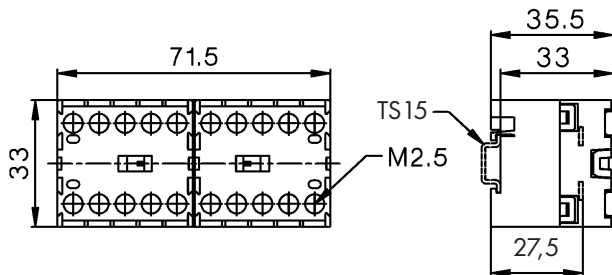
LAMZTS35



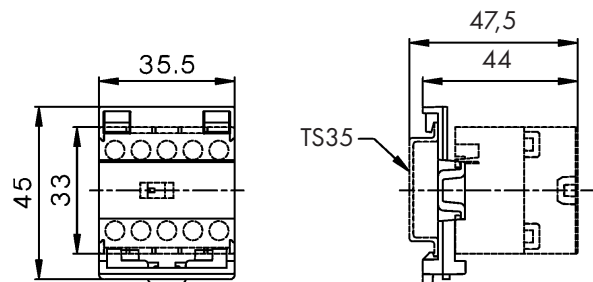
Reversing contactors

with screw terminals

LAMW



LAMD, LAMH with Snap-on adaptor



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