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7.00-0000
TL 2102T
DL 2100-2M
DL 2100-3M



POWER SUPPLIES

Three-phase Power Supply



DL 2102AL

Suitable for a three-phase supply at the mains voltage and frequency. Output: three-phase + N + T at safety terminals. Protection through differential magneto-thermal switch and pilot lamp. Key operated switch for the three-phase supply and pilot lamps for the three phases.

DC Power Supply



DL 2102ALCC

Suitable for supplying the dc low voltage to the inductive, capacitive and optical sensors of the laboratory.
Complete with a 12 V relay with a changeover NC contact.

MODULES

Emergency Pushbutton



DL 2102T01

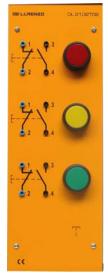
Mushroom type red emergency pushbutton for the manual control and the fast opening of the circuit in case of emergency.

Complete with 1 NO and 1 NC contacts.

Isolating rated voltage: 660 Vac

Thermal rated current: 10 A

Three Pushbuttons



DL 2102T02

Three pushbuttons, red, yellow and green, complete with 1 NO and 1 NC contacts, suitable for the manual control of electric circuits in direct and alternate current. Isolating rated voltage: 660 Vac Thermal rated current: 10 A



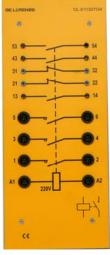
Three Pilot Lamps



DL 2102T03

Three signalling LED lamps, red, yellow and green.

Contactor



DL 2102T04

It operates as a three-pole power switch through the use of an electromagnet. Provided with 3 NO power contacts and 1 NO auxiliary contact, the module also contains 4 additional auxiliary

contacts, 2 NO and 2 NC. Coils voltage: 24 Vac, 50/60 Hz

Isolating rated voltage: 660 Vac

Thermal rated current:

20 A

Thermal rated current of the auxiliary contacts: 10 A.

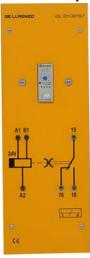
Thermal Relay



DL 2102T05

Three-phase protection against overload and phase loss through a high sensitivity differential device with protection against faulty starting. Compensation of the variation of the ambient temperature between – 25° C and + 60° C. Isolating rated voltage: 690 V Thermal rated current of the auxiliary circuit: 10 A

Time Relay



DL 2102T67

Multi-voltage and multifunction electronic timer, delayed at the excitation and at the de-excitation.
Power supply: from 12 to 240 Vac, 50/60 Hz
Timer selection from: 0.1 to 2 sec., 1 to 20 sec., 0.1 to 2 min., 1 to 20 min.
Resettlement time: less than 50 milliseconds. Full scale adjustment accuracy: ± 5%



Isolator



DL 2102T09

Three-pole fuse holder for 14x51 fuses, complete with cartridge fuses. Max. current: 690 V up to 25 A.

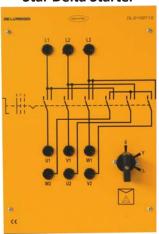
Position Sensor



DL 2102T11

Limit switch with wheel piston that activates a double quick tripping switch for safety applications. Isolating rated voltage: 690 V Conventional thermal current: 10 A Switching frequency: 3600 cycles/hour

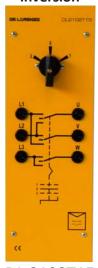
Star Delta Starter



DL 2102T12

Switch for the star-delta starting of three-phase squirrel cage asynchronous motors, with only one direction of rotation.
Rated voltage:
690 V, 50/60 Hz
Thermal rated current:
12 A
Output at 36 A safety terminals.

Direct starter with inversion

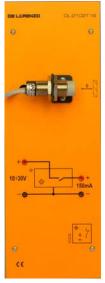


DL 2102T15

Three-pole inverter for three-phase squirrel cage asynchronous motors. Rated voltage: 690 V, 50/60 Hz Thermal rated current: 12 A Output at 36 A safety terminals.



Inductive Proximity Sensor



DL 2102T16

Proximity switch with NO output.

Supply voltage:

10 ÷ 30 Vdc

Max. output current:

150 mA

Switching distance:

8 mm.

Protection against polarity inversion and short circuit.

LED signal.

Capacitive Proximity Sensor



DL 2102T17

This sensor works on the variation of the parasitic capacity between the sensor and the object to be detected, that can be metallic as well as non metallic (wood, plastic, liquids, etc.).

Power supply voltage:

10 ÷ 30 Vdc

Output: PNP with NO

contact.

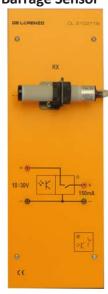
Maximum working frequency: 10 Hz Max. Output current: 200 mA Switching distance: from 0 to 10 mm.

Protection against short

circuit. LED signal.

Photoelectrical Barrage Sensor





DL 2102T18

This sensor works on the typical principle of the photosensitive elements, that change their electrical characteristics according to the intensity of the light.

Power supply voltage: 10 ÷ 30 Vdc

Programmable output: PNP/NPN with NO contact.

Maximum working frequency: 250 Hz

Max. output current: 200 mA Type of emitted light: infrared Max. detection range: 15 m.

Protection against short circuit. LED signal.

Photoelectrical Reflecting Sensor





DL 2102T19

This sensor works on the principle that the object to be detected interrupts the beam of infrared light emitted by the transmitter and reflected, through a reflector, toward the receiver.

Interference with ambient light: > 10000 lx.

Power supply voltage: 10 ÷ 30 Vdc

Programmable output: PNP/NPN with NO contact

Maximum working frequency: 700 Hz

Max. output current: 200 mA Type of emitted light: infrared Max. detection range: 1.5 m.

Protection against short circuit. LED signal.



Level Magnetic Sensor



DL 2102T20

It is made of polypropylene and the buoyant element includes a permanent magnet that activates a reed contact in the sensor.

Output: NO contact Max. switching voltage: 1500 Vac

Max. switching current:

3 A Max. switching power:

120 VA Minimum specific weight

of the liquids: 0.75 kg/cm²

Max pressure: 6 kg/cm²

Flooding Probe

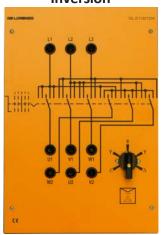


DL 2102T20RMB

Simulation of a container for liquids that can be filled up or emptied by means of a syringe.

Provided with a device with three probes in stainless steel of different lengths that can be connected to the module for the control of the level.

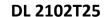
Star/Delta Starter with Inversion



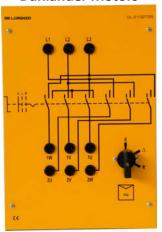
DL 2102T24

Suitable for star/delta starting with two directions of rotation of three-phase squirrel cage asynchronous motors with 3 coils stator connection.
Rated working voltage: 690 V, 50/60 Hz
Thermal rated current: 12 A
Output at 36 A safety

terminals.



Pole Switching for Dahlander Motors

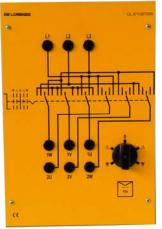


Pole switching starter for two-speed Dahlander motors. Rated working voltage: 690 V, 50/60 Hz Thermal rated current:

Output at 36 A safety terminals.



Pole Switching Unit with Inversion (Dahlander)



DL 2102T26

Pole switching starter, with two values of rpm and for two directions of rotation, suitable for two-speed Dahlander motors.

Rated working voltage: 690 V, 50/60 Hz Thermal rated current: 12 A

Output at 36 A safety terminals.

Pulse Counter



DL 2102T31V

Pulse counter for the starting and control of a squirrel cage three-phase asynchronous induction motor.

Programmer



DL 2102T38

Cam programmer with 4 independent switching contacts.

1 rotation/120 seconds. Possibility to adjust the time and the intervention of the cams.

Power supply: 24 Vdc

Single-phase Transformer



DL 2101T13

Single-phase transformer for low voltage modules. Primary: mains voltage Secondary: 2 x 12 V Rated power: 100 VA



Level Control



DL 2102T30RM86

Level control for conductive liquids that can be used in both filling and emptying.

Two levels of sensitivity that can be selected through a micro-switch. A micro-switch for the selection of filling or emptying.

Mains signalling LED. Relay status signalling

Power supply: 24 Vac Relay output:

1 changeover 10 A at 230V

Resistive load

Intervention time: 3 seconds

Three-pole Switch



DL 2109T04

Three pole switch.
Rated working voltage:
690 V, 50/60 Hz
Thermal rated current:
12 A
Output at 36 A safety
terminals.

Three-phase Induction Motor



DL 2102A

Induction motor with slip ring rotor, complete with built-in manual braking

device and 3-step starting rheostat.

Rated power: 367 W

Dahlander Motor



DL 2102D

Three-phase squirrel cage pole changing induction motor.

Rated power: 367 W







DL 10115AV

Squirrel cage three-phase asynchronous induction motor, with three-phase stator winding and squirrel cage buried in the rotor.

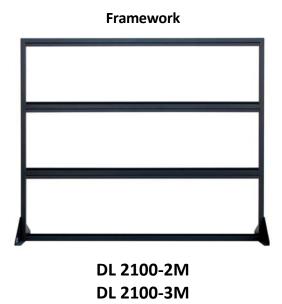
Rated power: 180 W.

Connecting Leads

Cable set for connecting modules experimentation DL 2102T.



TL 2102T



Two or three level metal frame for mounting the modules of the laboratory.



SUGGESTED CONFIGURATIONS

		DL 2102AL	DL 2101T13	DL 2102T01	DL 2102T02	DL 2102T03	DL 2102T04	DL 2102T67	DL 2102T05	DL 10115AVP	DL 2102T09	DL 2102A	DL 2102D	DL 2109T04	DL 2102T12	DL 2102T15	DL 2102T24	DL 2102T25	DL 2102T26	DL 2102T11	DL 2102T16	DL 2102T17	DL 2102T18	DL 2102T19	DL 2102T20	DL 2102T20RMB	DL 2102T30RM86	DL 2102T31V	DL 2102T38	DL 2102ALCC	DL 2100-3M	TL 2102T
	DL 2102TA Single-pole control	1	1	1																												1
-	auxiliaries			1		1																									1	
	Contactor Logic operators	1 1	1 1		1 1	1 1	1 1																								1 1	1 1
	Contactor self-supply Interlock between	1	1		1	1 1	1 2																								1 1	1
	contactors																															
	Sequentially controlled contactors	1	1		1	1	2																								1	1
	Exclusive-OR operator	1	1		1	1	2																								1	1
	Excitation delayed timer De-excitation delayed	1 1	1 1		1	1 1	1	1 1																							1 1	1
	timer																															
	Static timer DL 2102TB	1	1		1	1	1	1																							1	1
-	Thermal relay Manual star/delta	1	1 1		1	1 1	1 3		1	1 1																					1 1	1
	starting	_	_		_	_				_																					-	-
-	Manual reverser	1	1		1	1	2	_		1																					1	1
	Timed sequence control Pulse generator	1 1	1 1		1	1 1	2	2																							1 1	1 1
زر	Automatic star/delta	1	1		1	1	3	1	1	1																					1	1
	starting																															
	Star/delta starter with reverser	1	1		1	1	4	1	1	1																					1	1
	Counter-current braking	1	1		1	1	4	1		1																					1	1
	DL 2102TC																															
	Manual starter with rotor	1	1	1	1	1	3		1		1	1																			1	1
	resistances Automatic starter with	1	1	1	1	1	3	2	1		1	1																			1	1
	rotor resistances																															
	Speed variator for Dahlander motor	1	1		1	1	3		1				1																		1	1
	Speed variator and	1	1		2	2	5		1				1																		1	1
	reverser for Dahlander motor																															
	Automatic reverser for	1	1		1	1	4	1		1																					1	1
	three-phase asynchronous motor																															
	DL 2102TD																															
										4				4																	4	
	Motor starting with switch	1								1				1																	1	1
_ [Star/delta starting with	1								1					1																1	1
	switch Reverser with switch	1								1						1															1	1
	Star/delta starting, 2	1								1						-	1														1	1
	rotation directions, with																															
	switch Speed variator for	1										1						1													1	1
	Dahlander motor with	-										•						-													-	-
	switch	_										_							_												_	
	Speed variator for Dahlander motor, 2	1										1							1												1	1
	rotation directions, with																															
	switch																															

	1				
Į	DE	LO	RE	NZO	
		1	1		
	1	1	1		
	1	1	1		

	DL 2102TE																													DE	LO	RE	Z Z
	Motor starting and control with limit switch	1	1		1	1	1		1	1										1											1	1	
	Motor starting and control with inductive sensor	1	1		1	1	1		1	1											1									1	1	1	
	Motor starting and control with capacitive sensor	1	1		1	1	1		1	1												1								1	1	1	
_	Motor starting and control with photoelectric barrage	1	1		1	1	1		1	1													1							1	1	1	
	sensor Motor starting and control with photoelectric reflecting	1	1		1	1	1		1	1														1						1	1	1	
	sensor Motor starting and control with level sensor	1	1		1	1	1		1	1															1					1	1	1	
_	Motor starting and control with level	1	1		1	1	1		1	1																1	1				1	1	
	variations Motor starting and control with pulse programmer	1	1		1	1	1		1	1														1				1		1	1	1	
	Sequence of motor starting, 2 rotation directions, with motor stop between the 2 operations with cam	1	1		1	1	4		1	1																			1		1	1	
	programmer																																
	Total	1	1	1	2	2	5	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	