290.84 mm

200.86 mm

TECHNICAL SPECIFICATIONS

Cat. No.:	2A5DT5*	2A6DT6	2AJDT0/1*	2ANDT0*	2AODT5*	2AADT5*	2B5DT5*	2B6DT6	22LDT0	2ASDT0/1*	2BSDT0/1*	20JDT	20NDTT
Functions	MULTI-FUNCTION with 5 functions	MULTI-FUNCTION with 6 functions	ASYMMETRIC ON-OFF / OFF-ON	SIGNAL BASED MULTI-FUNCTION	ON DELAY	ASYMMETRIC ON-OFF	MULTI-FUNCTION with 5 functions	MULTI-FUNCTION with 6 functions	MOTOR RESTART CONTROL	STAR - DELTA		SOLID STATE ASYMMETRIC ON-OFF / OFF-ON	SOLID STATE SIGNAL BASED MULTI-FUNCTION
Supply Characteristics :													
Supply Voltage (⇨)	24-240 VAC/DC						240 - 415 VAC		240 VAC	24 - 240 VAC/DC	240 - 415 VAC	110 - 240 VAC	
Supply Variation	-20 % to + 10 % (of⇨)												
Supply Frequency	50/60 Hz												
Power Consumption (Max.)	4 VA						7 VA		4 VA		7 VA	3 VA	
Timing and Accuracy :													
Setting Accuracy	+/-5 % of full scale												
Repeat Accuracy	+1%											+1% (10 ms error for all ranges)	
Initiate Time	Max.100 ms								Not Applicable	Max. 100 ms		Max. 100 ms	
Reset Time	Max.200 ms								Not Applicable	Max. 200 ms		Max. 100 ms	
Set Time (Ts)	0.1 s - 10 h								Tm : 0.2 s - 6 s Td : 0.2 s - 60s Retentive Trip Voltage : 176 VAC, ± 6 VAC Hysteresis : 10 VAC max.	3 s - 120 s		0.06 s - 10 h	
Pause Time (P)	Not Applicable									60 ms, 90 ms, 120 ms, 150 ms		Not Applicable	
Operating Temperature	-15°C to + 60°C												
Storage Temperature	-20°C to + 80°C												
Max.Operating Altitude	2000 m												
Humidity	95% (Rh)												
LED Indication	Green LED : Power ON ; Red : Relay ON									λ: Star Relay ON; Δ : Delta Relay ON		Green LED : Power ON ; Red LED : Output ON	
Housing	Flame Retardant UL 94-V0												
Dimensions in mm (W X H X D)	22.5 X 75 X 100.5												
Weight (Unpacked)	130 g											107 g	
Mounting	Base / DIN Rail												
Relay O/P Characteristics :													
Contact Rating	5A (Res.) @ 240 VAC / 28 VDC											Not Applicable	
Contact Material	Ag Alloy												
Mechanical Life	10 million												
Electrical Life	0.1 million												
Switching Frequency	Electrical:1800 operations / h at rated load												
Utilization Category AC-15	Rated Voltage (Ue) : 230 V / 125 V; Rated Current (Ie) : 1.3 A / 2.5 A												
Utilization Category DC-13	Rated Voltage (Ue) : 250 V / 120 V / 24 V; Rated Current (Ie) : 0.1 A / 0.22 A / 2 A												
Contact Arrangement	2C/O	1I+1D	1C/O		2C/O			1I+1D	1C/O	1NO+1NO			
Certification :	CE, RoHS												
Product Reference Standard	IEC 61812-1 Ed. 1.0 (1996-10)												
EMI/EMC :													
Harmonic Current Emissions	IEC 61000-3-2 Ed. 3.0 (2005-11) Class A											IEC 61000-3-2 Ed. 5.0 (2005-011) Class A	
ESD	IEC 61000-4-2 Ed. 1.2 (2001-04) Level III											IEC 61000-4-2 Ed. 1.2 (2001-04) Level II	
Radiated Susceptibility	IEC 61000-4-3 Ed. 3.0 (2006-02) Level III											IEC 61000-4-3 Ed. 3.0 (2006-02) Level III	
Electrical Fast Transient	IEC 61000-4-4 Ed. 2.0 (2004-07) Level IV											IEC 61000-4-4 Ed. 2.0 (2004-07) Level IV/4 kV,5 kHz	
Surge	IEC 61000-4-5 Ed. 2.0 (2005-11) Level IV											IEC 61000-4-5 Ed. 2.0 (2005-11) Level IV	
Conducted Susceptibility	IEC 61000-4-6 Ed. 2.2 (2006-05) Level III											IEC 61000-4-6 Ed. 2.0 (2006-05) Level IV	
Voltage Dips & Interruptions (AC)✧	IEC 61000-4-11 Ed. 2.0 (2004-03) (Note: For 24 VAC, Performance Criteria B)											IEC 61000-4-11 Ed. 2.0 (2004-03) All 7 Levels	
Voltage Dips & Interruptions (DC)+	IEC 61000-4-29 Ed. 1.0 (2000-08) (Note: For 24 VDC, Performance Criteria B)											Not Applicable	
Conducted Emission	CISPR 14-1 Ed. 5.0 (2005-11) Class A											CISPR 14-1 Ed. 5.0 (2005-11) Class B	
Radiated Emission	CISPR 14-1 Ed. 5.0 (2005-11) Class A											CISPR 14-1 Ed. 5.0 (2005-11) Class A	
Safety :													
Test Voltage Between I/P & O/P	2.5 kV	1.5 kV	1.5 kV / 2.5 kV	2.5 kV				1.5 kV	Not Applicable	1.5 kV / 2.5 kV		2.5 kV	
Impulse Voltage Between I/P & O/P (IEC 60947-5-1 Ed. 3.0 2003-11)	4 kV	1.5 kV	1.5 kV / 4 kV	4 kV				1.5 kV	Not Applicable	1.5 kV / 4 kV		4 kV	
Single Fault	IEC 61010-01 Ed. 2.0 (2001-02)												
Insulation Resistance	UL 508 Ed. 17 (1999-01) < 2000 MΩ												
Leakage Current	UL 508 Ed. 17 (1999-01) < 3.5 mA												
Degree of Protection	IP - 20 for Terminal; IP - 40 for Housing												
Pollution Degree	II												
Type of Insulation	Reinforced												
Environmental :													
Cold Heat	IEC 60068-2-1 Ed. 6.0 (2007-03)												
Dry Heat	IEC 60068-2-2 Ed. 5.0 (2007-07)												
Vibration	IEC 60068-2-6 Ed. 7.0 (2007-12) 5 g												
Repetitive Shock	IEC 60068-2-27 Ed. 4.0 (2008-02) 40 g, 6ms												
Non-repetitive Shock	IEC 60068-2-27 Ed. 4.0 (2008-02) 30 g, 15 ms												
Solid State Output :													
Type												Optical Isolation	
Form												SPST	
Rated Current												1 A AC	
Maximum Admissible Current												20 A (10 mS)	
Leakage Current												< 5 mA	
Voltage Breaking Capacity	Not Applicable											110-240 VAC	
Maximum Voltage Drop at Terminals												<=8V	
Minimum Load Current												20 mA	
Electrical Life												1 X 10^6	
State of Equipment	Permanently connected												

"+": This standard is applicable only for 2A series. ✧: For 22LDT0, Performance Criteria "B".

ELECTRONIC TIMER - SERIES MICON™ 225 is manufactured to high precision and accuracy. Following types of functions are available in this series:

- MULTI-FUNCTION TIMER
- MULTI-FUNCTION 1I + 1D TIMER
- ASYMMETRIC ON-OFF/OFF-ON TIMER
- SIGNAL BASED MULTI-FUNCTION TIMER
- ON DELAY TIMER
- MOTOR RESTART CONTROL
- STAR-DELTA TIMER
- SOLID STATE ASYMMETRIC ON-OFF/OFF-ON TIMER
- SOLID STATE SIGNAL BASED MULTI-FUNCTION TIMER

Main features :

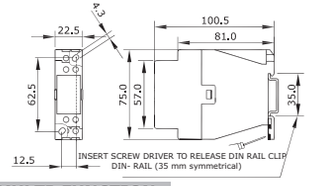
- Supply Voltage (2A) : 24-240 VAC /DC
- Supply Voltage (2B) : 240-415 VAC
- Supply Voltage (22) : 240 VAC
- Supply Voltage (20) : 110-240 VAC
- Supply frequency : 50/60 Hz
- Timing, Mode, Range and Pause Time wherever applicable can be set before power is applied to the product. Once Timer operation starts, any change in these settings have no effect.
- Range : 0.1 s to 10 h
- Range : 3 s to 120 s (2ASDT0/1, 2BSDT0/1)
- Range : 0.2 s to 60 s (22LDT0)
- Range : 0.06 s to h (20JDTT/20NDTT)
- Memory Time : 0.2 s to 6 s (22LDT0 only)
- Output : Solid state output (20JDTT/20NDTT)
- Blinking of Green LED indicates timing is in progress (Except for STAR-DELTA).

Installation :

A) Base Mounting : Timer should be mounted on a plain surface.using two M4 screws.
B) DIN - Rail Mounting : The Timer should be mounted on 35 mm symmetrical DIN Rail.

Product overall dimensions and mounting details :

Note : All dimensions are in 'mm'.



1) MULTI-FUNCTION :

Cat. No.: 2A5DT5 / 2B5DT5 / 2A6DT6 2B6DT6

A) ON DELAY:

When the supply is applied, timing starts. Output Relay turns ON after the set timing (Ts) has elapsed and remains ON till the supply is present.

B) INTERVAL :

When the supply is applied, Output Relay turns ON and timing starts. Output Relay turns OFF after the set Timing (Ts) has elapsed.

C) CYCLIC ON/OFF :

When the supply is applied, Output Relay turns ON and timing starts. Output Relay turns OFF after set Timing (Ts) has elapsed and remains OFF for the same set Timing (Ts) and ON/OFF cycle repeats till the supply is present.

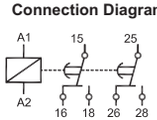
D) CYCLIC OFF/ON :

When the supply is applied, Output Relay is kept OFF for set Timing (Ts). After set Timing (Ts) has elapsed, Output Relay turns ON for the same set timing (Ts) and this OFF/ON Cycle repeats till supply is present.

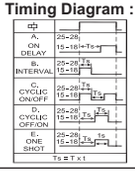
E) ONE SHOT :

When the supply is applied, timing starts. After set Timing (Ts) has elapsed Output Relay turns ON for one second, and Output Relay turns OFF.

Connection Diagram :



Timing Diagram :

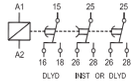


F)1I+1D ON DELAY :

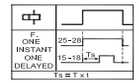
Only for Cat. No.: 2A6DT6/2B6DT6

when supply is applied, Timing starts and Instant Relay (25-28) turns on. After set Timing (Ts),Delayed Relay (15-18) turns on and remains ON till supply is present.

Connection Diagram :



Timing Diagram :



2) ASYMMETRIC ON - OFF/OFF - ON :

Cat. No.: 2AJDT0/2AJDT1/ 20JDTT

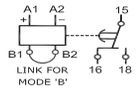
A) ASYMMETRIC OFF - ON :

If the link is not connected at B1-B2 and Supply is turned ON. Timing starts and Output Relay remains OFF for set Time. After set OFF Time has elapsed, Output Relay turns ON and remains ON till the set ON time has elapsed and the cycle repeats.

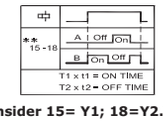
B) ASYMMETRIC ON - OFF :

If the link is connected at B1-B2 and supply is turned ON, Output Relay turns On and Timing starts. Output Relay turns OFF after the Set ON time has elapsed and remains OFF till the Set OFF time has elapsed and the cycle repeats.

Connection Diagram :



Timing Diagram :



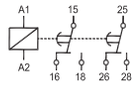
****(Incase of 20JDTT, consider 15= Y1; 18=Y2.)**

3) ASYMMETRIC ON - OFF :

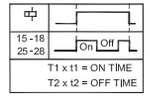
Cat. No.: 2AADT5

Supply is turned ON, Output Relay turns ON and Timing starts. Output Relay turns OFF after Set ON time has elapsed and remains OFF till set OFF time has elapsed and cycle repeats.

Connection Diagram :



Timing Diagram :

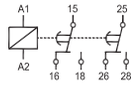


4) ON DELAY :

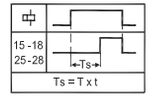
Cat. No.: 2AODT5

After applying the supply, Timing (Ts) starts Output Relay turns ON after the set Timing (Ts) has elapsed and remains ON till the Supply is present.

Connection Diagram :



Timing Diagram :

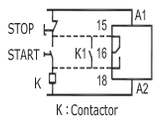


5) MOTOR RESTART CONTROL :

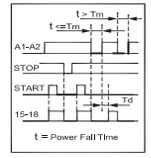
Cat. No.: 22LDT0

This product is intended for Instant and delayed restarting of motor in the event of supply interruption for a short time(6 s max.)

Connection Diagram :



Timing Diagram :



Application :

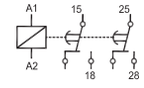
For continuous process control, where a Stop resulting from a short , voltage fault could cause Serious problems. If supply interruption is ⩽ 0.2 s, then motor can be restarted immediately due to motor inertia properties. If supply interruption is within 0.2 s to 6 s (Tm settable), then relay is made ON after set delay time (Retentive) as motor requires stabilization period. After set memory time Tm, Relay will not start until START button is pressed.

6 STAR - DELTA :

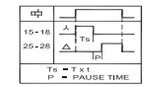
Cat. No.: 2ASDT0/1 & 2BSDT0/1

When the supply is applied, Output Star Relay turns ON. After completion of set Star ON time,Star Relay turns OFF and Delta Relay turns ON after the set Pause Time and remains ON till the Supply is present.

Connection Diagram :



Timing Diagram :



7) SIGNAL BASED MULTI-FUNCTION TIMER :

Cat. No. : 2ANDT0 / 20NDTT

A) SIGNAL ON DELAY :

Supply is present . Whenever switch (S) is closed, Timing (Ts) starts. Output Relay energizes at the end of set Timing (Ts). Output Relay de-energizes or Timing reset if switch (S) is opened.

B) ACCUMULATIVE ON DELAY :

Supply is present .Timing (Ts) starts if Switch (S) is open. Closing Switch (S) creates a Pause in Timing. Output Relay energizes at the end of set time (Ts).

C) SIGNAL OFF DELAY :

Supply is present. Whenever Switch (S) is closed, Output Relay energizes. Timing (Ts) starts when Switch is opened and Output Relay de-energizes at the end of set time. Timing (Ts) will reset if Switch (S) is re-opened.

D) SIGNAL OFF / ON DELAY :

Supply is present. Whenever Switch (S) is closed or opened, Timing (Ts) starts. Output Relay changes its state after set time (Ts). If Switch (S) is opened or closed before Timing ends, product will reset Timing (Ts) with Output Relay state unchanged.

E) LEADING EDGE IMPULSE :

Supply is present. If Switch (S) is closed, Output Relay energizes and de-energizes at the end of set Timing (Ts) irrespective of further action on Switch.

Derived Modes :

A) ON DELAY :

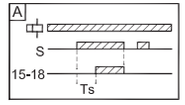
1. Select mode signal On Delay (A) and close Switch (S) or short B1-B2 before power ON, it will work as ON Delay.
2. Select mode Accumulative On Delay (B) keeping signal open before power ON and during execution of time as well, it will work as ON Delay.

E) INTERVAL :

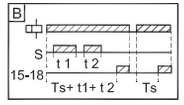
Select mode (E) Leading Edge Impulse. If Switch (S) is closed between B1- B2 before making power supply ON and during execution of timing, it will work as Interval.

Connection Diagram for 2ANDT0 & 20NDTT :

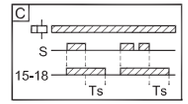
A) SIGNAL ON DELAY :



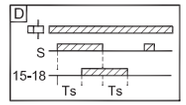
B) ACCUMULATIVE ON DELAY:



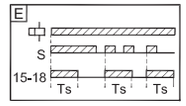
C)SIGNAL OFF DELAY :



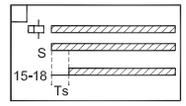
D) SIGNAL OFF / ON DELAY:



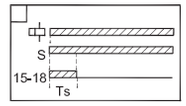
E) LEADING EDGE IMPULSE 1 :



a) ON DELAY :

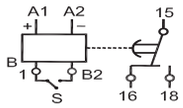


e) INTERVAL :

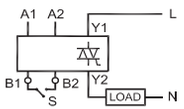


(Incase of 20NDTT & 20JDTT, 15=Y1; 18=Y2)

Connection Diagram For 2ANDT0



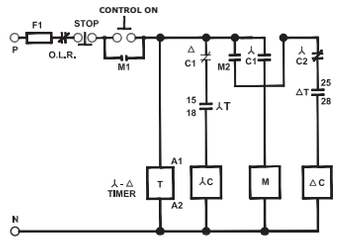
Connection Diagram for 20NDTT & 20JDTT



(For 20JDTT, short "S" for Mode B)

Recommended star - delta control circuit :

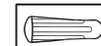
(Below circuit is for STAR -DELTA Timer with 240 VAC Supply.)



1) F1 - Mains Protection Fuse
2) O.L.R - Over Load Relay
3) M1 - First 'NO' Contact of Main Contact or
4) M2 - Second 'NO' Contact of Main Contact or
5) M - Main Contact of driving Motor
6) ⅄C - 'NO' Contact
7) ⅄C1 - 'NO' Contact of Star Contact or
8) ⅄C2 - 'NO' Contact of Star Contact or
9) ΔC - Delta Contact or
10) ΔC1 - 'NC' Contact of Delta Contact or
11) ⅄T - Star Contact of Timer (⅄-Δ)
12) ΔT - Delta Contact of Timer (⅄-Δ)

ELECTRONIC TIMER - SERIES MICON™ 225

Cat. No. : 2A5DT5, 2A6DT6, 2AJDT0, 2AJDT1, 2ANDT0, 2AODT5, 2AADT5, 2B5DT5, 2B6DT6, 22LDT0, 2ASDT0, 2ASDT1, 2BSDT0, 2BSDT1, 20JDTT, 20NDTT

 Ø 3.5....4.0mm	0.6 N.m (6 Lb.in) Terminal screw - M3
	1 x1 ...4 mm² Solid Wire / Single Wire Ferrule
	2 x 0.5 ...2.5 mm² Insulated Twin Wire Ferrule
AWG	1 X 16 to 12

Use Cu wire of 75°C only.

AWG	CURRENT (A)
12	5.00
14	3.33
16	1.67

The timers shall be placed in an enclosure that is minimum 200% of the size of the timer in the end use application.

NOTE :

- Product innovation being a continuous process, we reserve the right to alter specifications without prior notice.
- ' * ' marked products have 2.5 kV test voltage between I/P and O/P.
- Signal Sensing time : 60 ms (2AJDT0/1 & 2ANDT0)
- Signal Sensing time : 40 ms (20JDTT/20NDTT)
- Signal I/P Impedance: 1466 kΩ

Caution :

1. Always follow instructions stated in this product leaflet.
2. Before installation, check that the specifications agree with the intended application.
3. Installation to be done by skilled electrician.
4. Automation and control devices must be installed properly so that they are protected against any risk of involuntary actuations.
5. Suitable dampers should be provided in the event of excessive vibrations.
6. Setting of all the potentiometers should be in clockwise direction only.
7. Do not connect supply between B1andB1 terminals. for proper signal operation follow supply polarity as per connection diagram.
8. In 2AJDT0/1,any change at B1-B2 will have no effect once timer starts.
9. Use 250 mA fuse in series with the above mentioned products.
10. In 20NDTT & 20JDTT, use 3 A²s (I²t) fuse externally.
11. In 20NDTT & 20JDTT, Minimum switching operational current is 20 mA.

TECHNICAL SPECIFICATIONS:

Cat. No.		23GDT0
SUPPLY CHARACTERISTIC		
Nominal Supply Un		24 -240 VAC/DC,50/60 Hz
Limits		-20% to +10% of Un
Power Consumption (Max.)		2.5 VA
RELAY O/P CHARACTERISTICS		
Contact Arrangement		2 C/O
Contact Rating		5 A (Resistive), 240 VAC / 28 VDC
Contact Material		Ag Alloy
Mechanical Life Expectancy (At no load)		10 X 10^6 operations(max. switching frequency)
Electrical Life Expectancy		1 X 10^5 operations
Switching Frequency (Max.)		1800 operations(Under rated load) / Hr(Electrical)
FEATURE CHARACTERISTICS		
Mode Available		True Off Delay
Time		0.6-600 sec
Setting Accuracy		+ / - 10 % of full scale
Repeat Accuracy		+ / - 1 %
Minimum Energizing Time		1 Sec.
Supply Indication on front panel		Green LED - Power ON
Terminal Capacity		1 To 4 mm^2 (Max.) Pin lugs with screw
Mounting		BASE / DIN- RAIL (35 mm Sym.)
Dimensions (W X H X D)		22.5X75X100.5(in mm.)
Weight (Unpacked)		120 gms.
Humidity		95 % Rh
Operating Temperature		-15 °C to 60 °C
Storage Temperature		-20 °C to 70 °C
Vibration Resistance	Destruction	10 to 55 to 10 Hz, 0.75-mm single amplitude (1.5-mm double amplitude)
	Malfunction	10 to 55 to 10 Hz, 0.75-mm single amplitude (1.5-mm double amplitude)
Housing Degree & Protection		Flame retardant UL 94-V0, IP 20 for Terminal, IP40 for Housing
Pollution Degree		2
Isolation (I/P and O/P)		3 kV
Isolation (Terminal and Casing)		4 kV

SERIES: 225

ELECTRONIC TIMER

True Off Delay

Cat. No. 23GDT0

CE

RoHS

NOTE : Product innovation being a continuous process, we reserve the right to alter specification without any prior notice.

⚠ **CAUTION:**

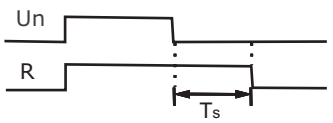
1. Always follow instructions stated in this product leaflet.
2. Before installation, check to ensure that the specifications agree with the intended application.
3. Installation to be done by skilled electrician.
4. Automation & Control devices must be properly installed so that they are protected against any risk of involuntary actuations.

2LL019-00

SERIES 225
ELECTRONIC TIMER
TRUE - OFF DELAY

Series 225 TRUE - OFF DELAY Timer is manufactured to a high degree of precision & accuracy. The time settings are stepless and can be set with the knob.

FUNCTION DIAGRAM:



Un: SUPPLY VOLTAGE

R : OUTPUT RELAY STATUS

Ts : Set Time

OFF Delay can be set using Range and T potentiometers provided on the front facia.

SET TIME = RANGE X T Sec.

FUNCTION DESCRIPTION:

The output relay energizes as soon as the power is switched On (Min. Energizing time 1 sec.),but the time count starts only after the power is switched Off, and relay de-energizes after the set time has elapsed.

FEATURES:

Timer has wide application area.

Normal supply frequency variation does no affect the timing accuracy.

Enclosure: Compact, Rugged and light weight.

Mounting : Din Rail and Base mounting facility.

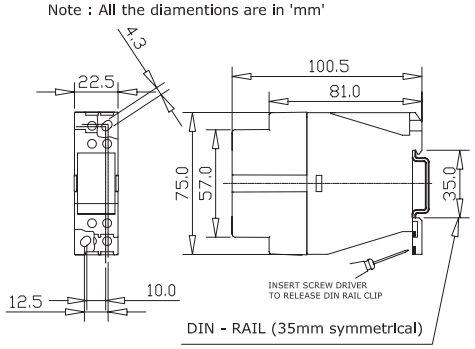
INSTALLATION:

a. Base Mounting: The Timer should be mounted on a plain surface using two M4 screws.

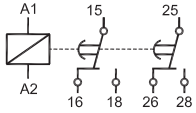
b. DIN-Rail Mounting: The Timer should be mounted on 35 mm symmetrical DIN Rail.

Overall Product Dimension and Mounting details:

Note : All the diamentions are in 'mm'



WIRING DIAGRAM:



Note:
1.Setting of all potentiometers must be in clockwise direction only.
2.Use of 500 mA fuse in series with product supply is recommended.

STANDARDS:

Radio Interference Suppressions	CISPR 14-1 Class A
ESD	IEC 61000-4-2 Level II Ed.1.2b-2001-04
Radiated Susceptibly	IEC 61000-4-3 Level III Ed. 3.0b-2006-02
Electrical Fast Transients	IEC 61000-4-4 Level IV Ed.2.0b-2004-07
Surge	IEC 61000-4-5 Level IV Ed. 2.0b-2005-11
Conducted Susceptibility	IEC 61000-4-6 Level III Ed. 2.2b-2006-05
Voltage dips and Interruptions	IEC 61000-4-11 Ed. 2.0b-2004-11 IEC 61000-4-29 Ed. 1.0b-2000-08