

# proense® Relay Timers

## On-Delay Inline Relay Timers T2L-ND Series Overview

The T2L-ND series of on-delay inline (series connection) relay timers is connected in series with the load, requiring only 2 terminals/connections. These products feature a universal input voltage of 24-240VAC and 12-48VDC. The inline solid state two-terminal output is rated 1A continuous/10A inrush pilot duty output and is ideal for high duty cycle and long-life applications. The enclosure is encapsulated for robust protection.

The T2L-ND series is offered in both an analog or digital programming versions. The analog versions offer time setting via an onboard potentiometer, and the digital versions are set through the use of a 10-position DIP switch which offers a greater setting accuracy than is found on the analog models.

## Features

- Cost effective design and compact 2 x 2 inch enclosure
- Encapsulated for protection
- Two-terminal series connection with the load
- Solid state 1A continuous/10A inrush pilot duty output
- Universal input voltage range: 24-240VAC and 12-48VDC
- DIP switch for accurate digital setting of time delay or easy to use analog potentiometer models are available



**T2L-ND-30-240U**



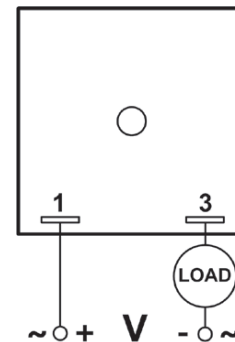
**T2L-ND-40-240U**

On-Delay Inline Relay Timers T2L-ND Series						
Part Number	Price	Timer Type	Timing Range	Voltage	Output Type	Drawing Link
<a href="#">T2L-ND-30-240U</a>	\$24.00	On-delay	0.1 to 10 seconds	24-240 VAC and 12-48 VDC	(1) SPNO timed solid state relay	<a href="#">PDF</a>
<a href="#">T2L-ND-31-240U</a>	\$24.00	On-delay	1 to 100 seconds	24-240 VAC and 12-48 VDC	(1) SPNO timed solid state relay	<a href="#">PDF</a>
<a href="#">T2L-ND-32-240U</a>	\$24.00	On-delay	0.1 to 10 minutes	24-240 VAC and 12-48 VDC	(1) SPNO timed solid state relay	<a href="#">PDF</a>
<a href="#">T2L-ND-33-240U</a>	\$24.00	On-delay	1 to 100 minutes	24-240 VAC and 12-48 VDC	(1) SPNO timed solid state relay	<a href="#">PDF</a>
<a href="#">T2L-ND-40-240U</a>	\$36.00	On-delay	0.1 to 102.3 seconds selectable	24-240 VAC and 12-48 VDC	(1) SPNO timed solid state relay	<a href="#">PDF</a>
<a href="#">T2L-ND-41-240U</a>	\$36.00	On-delay	1 to 1,023 seconds selectable	24-240 VAC and 12-48 VDC	(1) SPNO timed solid state relay	<a href="#">PDF</a>
<a href="#">T2L-ND-42-240U</a>	\$36.00	On-delay	10 to 10,230 seconds selectable	24-240 VAC and 12-48 VDC	(1) SPNO timed solid state relay	<a href="#">PDF</a>

On-Delay Inline Relay Timers Specifications	
<b>General Specifications</b>	
<b>Connection</b>	0.25 inch male quick-connect terminals
<b>Ambient Temperature</b>	-28 to +65°C [-18 to +149°F]
<b>Storage Temperature</b>	-40 to +85°C [-40 to +185°F]
<b>Protection Rating</b>	IP00
<b>Mounting</b>	Surface with one #8 or #10 screw and a maximum tightening torque of 15 in•lb.
<b>Mounting Orientation</b>	Any
<b>Weight</b>	0.15 lb
<b>Agency Approvals and Standards*</b>	cURus File E222847, CE

\*To obtain the most current agency approval information, see the Agency Approval Checklist section on the specific part number's web page. Specifications continued on following page.

## Wiring Diagram



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## T2L-ND Series On-Delay Inline Relay Timers

On-Delay Inline Relay Timers Specifications (continued)		
Series	T2L-ND-3x	T2L-ND-4x
<b>Input Specifications</b>		
<b>Nominal Voltage</b>	AC operation: +10 to -15% of nominal voltage, 50/60 Hz +5% DC operation: +10 to -15% of nominal voltage	
<b>Nominal Consumption</b>	Maximum 1VA	
<b>Contact Specifications</b>		
<b>Minimum Load Current</b>	20mA	
<b>Type</b>	(1) SPNO	
<b>Switching Capacity</b>	Normally open solid state 1A continuous, 10A inrush @ 65°C, pilot duty	
<b>Lifetime</b>		
	No predictable failure if used within operating parameters	
<b>Reset Time</b>		
<b>Reset Time</b>	0.05 seconds	
<b>Time Circuit Specifications</b>		
<b>Setting Accuracy</b>	Maximum setting (adjustable): +5%, -0% Minimum setting (adjustable): +0%, -50% Fixed time delay: ±2% or 50ms, whichever is greater	Constant voltage and temperature within specifications: +2% of set time or +50ms, whichever is greater Variable voltage and temperature within specifications: +5% of set time or +50ms, whichever is greater
<b>Start-up Time</b>	Time from when power is applied until unit is timing: 0.02 seconds	
<b>Maintain Function Time</b>	Time unit continues to operate after power is removed: 0.01 seconds	
<b>Repeat Accuracy</b>	Constant voltage and temperature within specifications: ±0.1% or ± 0.04 seconds, whichever is greater	Constant voltage and temperature within specifications: +0.1% of set time or +0.02 seconds, whichever is greater Variable voltage and temperature within specifications: +1% of set time or +0.02 seconds, whichever is greater

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## Timing Charts

### T2L Series (-4X Suffix)

Function	Series	Operation	Timing Chart	
<b>ON DELAY</b> Delay on Operate	T2L (-4x Suffix)	Upon application of input voltage, the time delay (t) begins. At the end of the time delay (t), the output is energized. Input voltage must be removed to reset the time delay relay & de-energize the output.	INPUT VOLTAGE	

Note: Please see inserts for more information

### T2L, T2R, & T2S Series

Function	Product Series	Operation	Timing Chart	
<b>ON DELAY</b> Delay on Operate	T2L-ND T2R-ND T2S-ND	Upon application of input voltage, the time delay (t) begins. At the end of the time delay (t), the output is energized. Input voltage must be removed to reset the time delay relay & de-energize the output.	INPUT VOLTAGE	
<b>INTERVAL ON</b> Interval	T2S-TT	Upon application of input voltage, the output is energized and the time delay (t) begins. At the end of the time delay (t), the output is de-energized. Input voltage must be removed to reset the time delay relay.	INPUT VOLTAGE	
<b>SINGLE SHOT</b> One Shot Momentary Interval	T2R-SST T2S-SST	Upon application of input voltage, the time delay relay is ready to accept a trigger. When the trigger is applied, the output is energized and the time delay (t) begins. During the time delay (t), the trigger is ignored. At the end of the time delay (t), the output is de-energized and the time delay is ready to accept another trigger.	INPUT VOLTAGE	
<b>OFF DELAY</b> Delay on Release Delay on Break Delay on De-Energization	T2R-FD T2S-FD	Upon application of input voltage, the time delay relay is ready to accept a trigger. When the trigger is applied, the output is energized. Upon removal of the trigger, the time delay (t) begins. At the end of the time delay (t), the output is de-energized. Any application of the trigger during the time delay will reset the time delay (t) and the output remains energized.	INPUT VOLTAGE	

Note: Please see inserts for more information