

Lightning and Overvoltage Protection  
**ProTec T1S-50 1+0**  
 Class I • Class II • Type 1 • Type 2



Location of Use: Main Distribution Boards  
 Network Systems: TN-S, TN-C, TT (only L-N)  
 Mode of Protection: L-PE, N-PE (only TN-S), L-PEN, L-N  
 IEC/EN Category: Class I+II / Type 1+2  
 Housing: Pluggable Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012+A11:2018

**Technical Data**

**ProTec T1S-50-xxx-1+0(-R)**

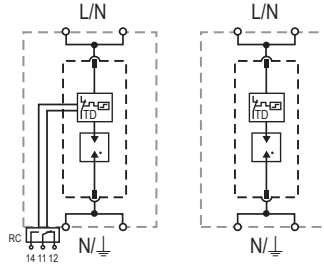
**275**

IEC Electrical		
Nominal AC Voltage (50/60Hz)	$U_o / U_n$	240 V
Maximum Continuous Operating Voltage (AC)	$U_c$	275 V
Nominal Discharge Current (8/20 $\mu$ s)	$I_n$	50 kA
Maximum Discharge Current (8/20 $\mu$ s)	$I_{max}$	50 kA
Impulse Discharge Current (10/350 $\mu$ s)	$I_{imp}$	50 kA
Specific Energy	W/R	625 kJ/ $\Omega$
Charge	Q	25 As
Voltage Protection Level	$U_p$	1500 V
Rated Load Current	$I_L$	100 A
Response Time	$t_A$	< 100 ns
Overcurrent Protection (max)		500 A gG
Short-Circuit Current Rating (AC)	$I_{SCCR}$	100 kA
Follow Current Interrupt Rating (AC)	$I_{fi}$	100 kA
TOV Withstand 120min	$U_T$	442 V
Number of Ports		1
Additional Electrical Parameters - Standard (Tests performed within Raycap testing laboratory only)		
Residual Voltage at 5 kA (8/20 $\mu$ s)	$U_{res}$	1000 V
Overcurrent Protection (min)		500 A gG
Additional Electrical Parameters - Extended (Additionally tested by VDE)		
Short-Circuit Current Rating (AC)	$I_{SCCR}$	100 kA
Overcurrent Protection (max)		500 A gG
Mechanical & Environmental		
Operating Temperature Range	$T_a$	-40 °F to +185 °F [-40 °C to +85 °C]
Permissible Operating Humidity	RH	5%...95%
Altitude		13123 ft [4000 m]
Terminal Screw Torque	$M_{max}$	40 lbf-in [4.5 Nm]
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible) 35 mm <sup>2</sup> (Solid, Stranded) / 25 mm <sup>2</sup> (Flexible)
Mounting		35 mm DIN Rail, EN 60715
Degree of Protection		IP 20 (built-in)
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
Thermal Protection		Yes
Operating State / Fault Indication		Green Flag / Not Green Flag
Remote Contacts (RC)		Optional
RC Switching Capacity		AC: 250V/1A, 125V/1A; DC: 48V/0.5A, 24V/0.5A, 12V/0.5A
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm <sup>2</sup> (Solid)

## Internal Configuration

### Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- ⏚ PE Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnect



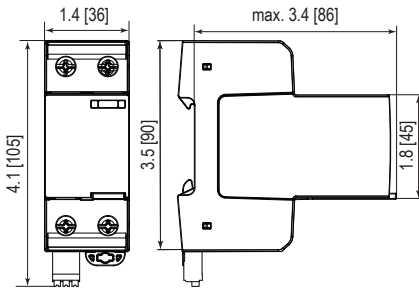
### ProTec T1S-50-xxx-1+0(-R)

#### Order Information

Order Code	275
ProTec T1S-50-xxx-1+0	59.A533
ProTec T1S-50-xxx-1+0-R (with remote contacts)	59.A534
ProTec T1S-50-xxx-P (plug)	59.A535

## Dimensions & Packaging

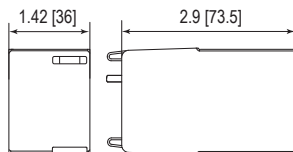
inches [mm]



#### Complete Unit

ProTec T1S-50-xxx-1+0		275
Weight	pounds [grams]	.623 [283]
ProTec T1S-50-xxx-1+0-R		275
Weight	pounds [grams]	.643 [292]
DIN 43880 Dimension		2 TE / 1.42 [36]
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]
Standard Order Quantity		7 Units

## Spare Plug



#### Single Unit

ProTec T1S-50-xxx-P		275
Weight	pounds [grams]	.412 [187]
DIN 43880 Dimension		2 TE / 1.42 [36]
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]
Standard Order Quantity		16 Units



Location of Use: Main Distribution Boards  
 Network Systems: TN-S, TN-C, TT (only L-N), IT (only 440V)  
 Mode of Protection: L-PE, N-PE (only TN-S and IT), L-PEN, L-N  
 IEC/EN Category: Class I+II / Type 1+2  
 Housing: Pluggable Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012+A11:2018

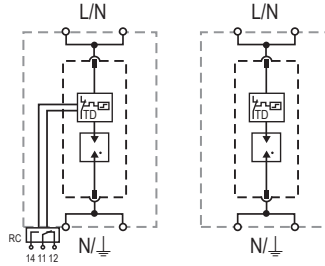
**Technical Data**

ProTec T1S-35-xxx-1+0(-R)		275	440
<b>IEC Electrical</b>			
Nominal AC Voltage (50/60Hz)	$U_o/U_n$	240V	400V
Maximum Continuous Operating Voltage (AC)	$U_c$	275V	440V
Nominal Discharge Current (8/20 $\mu$ s)	$I_n$	35kA	35kA
Maximum Discharge Current (8/20 $\mu$ s)	$I_{max}$	50kA	50kA
Impulse Discharge Current (10/350 $\mu$ s)	$I_{imp}$	35kA	35kA
Specific Energy	W/R	306.25 kJ/ $\Omega$	306.25 kJ/ $\Omega$
Charge	Q	17.5 As	17.5 As
Voltage Protection Level	$U_p$	1500V	2500V
Rated Load Current	$I_L$	100 A	100 A
Response Time	$t_A$	< 100ns	< 100ns
Overcurrent Protection (max)		500 A gG	400 A gG
Short-Circuit Current Rating (AC)	$I_{SCCR}$	100kA	100kA
Follow Current Interrupt Rating (AC)	$I_{fi}$	100kA	100kA
TOV Withstand 120min	$U_T$	442V	762V
TOV Safe Fail 200ms	$U_T$	-	1640V
Number of Ports		1	1
<b>Additional Electrical Parameters - Standard</b> (Tests performed within Raycap testing laboratory only)			
Residual Voltage at 5 kA (8/20 $\mu$ s)	$U_{res}$	1000V	1500V
Overcurrent Protection (min)		400 A gG	400 A gG
<b>Additional Electrical Parameters - Extended</b> (Additionally tested by VDE)			
Short-Circuit Current Rating (AC)	$I_{SCCR}$		100kA
Overcurrent Protection (max)		500 A gG	400 A gG
<b>Mechanical &amp; Environmental</b>			
Operating Temperature Range	$T_a$	-40 °F to +185 °F [-40 °C to +85 °C]	
Permissible Operating Humidity	RH	5%...95%	
Altitude		13123 ft [4000m]	
Terminal Screw Torque	$M_{max}$	40 lbf-in [4.5Nm]	
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible) 35 mm <sup>2</sup> (Solid, Stranded) / 25 mm <sup>2</sup> (Flexible)	
Mounting		35 mm DIN Rail, EN 60715	
Degree of Protection		IP 20 (built-in)	
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0	
Thermal Protection		Yes	
Operating State / Fault Indication		Green Flag / Not Green Flag	
Remote Contacts (RC)		Optional	
RC Switching Capacity		AC: 250V/1A, 125V/1A; DC: 48V/0.5A, 24V/0.5A, 12V/0.5A	
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm <sup>2</sup> (Solid)	

## Internal Configuration

### Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- ⏚ PE Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnect



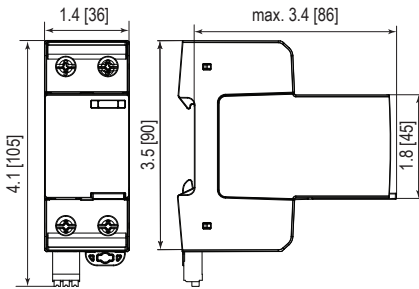
### ProTec T1S-35-xxx-1+0(-R)

#### Order Information

Order Code	275	440
ProTec T1S-35-xxx-1+0	59.A530	59.A536
ProTec T1S-35-xxx-1+0-R (with remote contacts)	59.A531	59.A537
ProTec T1S-35-xxx-P (plug)	59.A532	59.A538

## Dimensions & Packaging

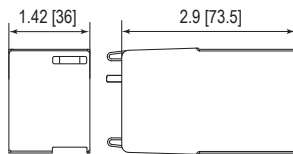
inches [mm]



#### Complete Unit

ProTec T1S-35-xxx-1+0	275	440	
Weight	pounds [grams]	.623 [283]	.656 [298]
ProTec T1S-35-xxx-1+0-R	275	440	
Weight	pounds [grams]	.643 [292]	.676 [307]
DIN 43880 Dimension	2 TE / 1.42 [36]		
Packaging Dimensions (HxWxL)	4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]		
Standard Order Quantity	7 Units		

## Spare Plug



#### Single Unit

ProTec T1S-35-xxx-P	275	440	
Weight	pounds [grams]	.412 [187]	.445 [202]
DIN 43880 Dimension	2 TE / 1.42 [36]		
Packaging Dimensions (HxWxL)	4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]		
Standard Order Quantity	16 Units		



## Connection Accessories

### ProTec T1S 35kA & 50kA Series

- Products with  $U_c$  440V are suitable for IT system applications
- Busbar connection accessories available for different configurations
- Compatible with other SPDs in the same product range



#### ProBar Busbars

The ProBar Accessories Series is a series of insulated busbar interconnections which can be used to easily connect multiple SPDs into a single protection unit for various systems and configurations.



Connection	Options for 275V	Options for 440V
Line to Line	ProTec T1S-35-275-1+0(-R) Order Code: 59.A530 or 59.A531	ProTec T1S-35-440-1+0(-R) Order Code: 59.A536 or 59.A537
	ProTec T1S-50-275-1+0(-R) Order Code: 59.A533 or 59.A534	-
Neutral to Ground	ProTube T1S-100-0+1 Order Code: 59.0744	ProTube T1S-440-100-0+1 Order Code: 59.A529

For each application use only products of the same voltage.