General Safety Instructions:

ENGLISH

READ SAFETY INSTRUCTIONS

Servicing:
These products are not customer serviceable TDK-Lambda and their authorised agents only are permitted to carry out repairs.

Critical Components:
These products are not authorised for use as critical components in nuclear control systems, life support systems or equipment for use in hazardous environments without the express written approval of the Managing Director of TDK-Lambda EMEA.

Product Usage:
These products are designed for use within a host equipment which restricts access to authorised competent personnel.

This product is a component power supply and complies with the EMC directive. The EMC performance of a component power supply will be affected by the final installation, compliance to the stated EMC standards and conformance to the EMC Directive must be confirmed after installation by the final equipment manufacturer.
For guidance with respect to test conditions please visit our website at https://emea.tdk-lambda.com/EMC_guidance or contact your local TDK-Lambda sales office.

Environmental:
These products are IPX0, and therefore chemicals/solvents, cleaning agents and other liquids must not be used.

Environment:
This power supply is a switch mode power supply for use in applications within a Pollution Degree 2, overvoltage category II environment. Material Group IIIb PCB's are used within it.

Output Loading:
The output power taken from the power supply must not exceed the rating stated on the power supply label, except as stated in the product limitations in this handbook.

Input Parameters:
This product must be operated within the input parameters stated in the product limitations in this handbook.

End of Life Disposal:
The unit contains components that require special disposal. Make sure that the unit is properly disposed of at the end of its service life and in accordance with local regulations.

RISK OF ELECTRIC SHOCK

High Voltage Warning:
Dangerous voltages are present within the power supply**.** The professional installer must protect service personnel from inadvertent contact with these dangerous voltages in the end equipment.

WARNING: When installed in a Class 1 end equipment, this product must be reliably earthed and professionally installed.

The (+) or (-) output(s) can be earthed or left floating.

The unit cover(s)/chassis (where applicable) must not be made user accessible.
The mains input connector is not acceptable for use as field wiring terminals.

For encased products, do not use mounting screws, which penetrate the unit more than; See drawings.
Internal fuses protect the unit and must not be replaced by the user. In case of internal defect, the unit must be returned to TDK-Lambda or one of their authorised agents.

A suitable mechanical, electrical and fire enclosure must be provided by the end use equipment for mechanical, electric shock and fire hazard protection.

Energy Hazards:
The main output of this product is capable of providing hazardous energy (240VA). Final equipment manufacturers must provide protection to service personnel against inadvertent contact with the output terminals.

The unit cover/chassis, where applicable, is designed to protect skilled personnel from hazards. They must not be used as part of the external covers of any equipment where they may be accessible to operators, since under full load conditions, part or parts of the unit chassis may reach temperatures in excess of those considered safe for operator access.

Allgemeine Sicherheitsvorschriften:

DEUTSCH

LESEN SIE DIE SICHERHEITSVORSCHRIFTEN

Wartung:
Diese Produkte können nicht durch den Kunden gewartet werden. Nur TDK-Lambda und deren zugelassene Vertriebshändler sind zur Durchführung von Reparaturen berechtigt.

Kritische Komponenten:
Diese Produkte sind nicht für die Verwendung als kritische Komponenten in nuklearen Kontrollsystemen, Lebenserhaltungssystemen oder Geräten in gefährlichen Umgebungen geeignet, sofern dies nicht ausdrücklich und in Schriftform durch den Geschäftsführer von TDK-Lambda EMEA genehmigt wurde.

Produktverwendung:
Diese Produkte sind zur Verwendung innerhalb von Anlagen gedacht, die einen auf das Fachpersonal beschränkten Zugang haben.

Dieses Produkt ist ein Komponenten-Netzteil und entspricht der EMV-Richtlinie. Das EMV-Verhalten eines Einbaunetzteiles wird von der Einbausituation im Endgerät maßgeblich beeinflusst. Die Übereinstimmung mit den angegebenen EMV-Normen und die Erfüllung der EMV-Richtlinie muss nach dem Einbau vom Endgerätehersteller nachgewiesen werden. Für Anwendungshinweise besuchen Sie bitte unsere Website auf https://emea.tdk-lambda.com/EMC_guidance oder kontaktieren Sie Ihr lokales TDK-Lambda Vertriebsbüro.

Umwelt:
Diese Produkte sind IPX0, aus diesem Grund dürfen keine Chemikalien/Lösungsmittel, Reinigungsmittel und andere Flüssigkeiten verwendet werden.

Umgebung:
Dieses Netzteil ist ein Schaltnetzteil zur Verwendung in einer Umgebung mit einem Verschmutzungsgrad 2, Überspannungskategorie II. Es werden PCBs Materialgruppe IIIb verwendet.

Ausgangsstrom:
Der Ausgangsstrom des Netzteiles darf die Leistung, die auf dem Label des Netzteiles vermerkt ist, nur dann überschreiten, wenn dies in diesem Handbuch beschrieben und spezifiziert ist.

Eingangsparameter:
Dieses Produkt muss innerhalb der Eingangsparameter, die in der Produktspezifikation sowie in diesen Handbuch angegeben sind, betrieben werden.

Entsorgung am Ende der Betriebszeit:
Das Gerät enthält Komponenten die unter Sondermüll fallen. Das Gerät muss am Ende der Betriebszeit ordnungsgemäß und in Übereinstimmung mit den regionalen Bestimmungen entsorgt werden.

GEFAHR DURCH ELEKTRISCHEN SCHLAG

Hochspannungswarnung:
Innerhalb des Netzteiles gibt es gefährliche Spannungen**.** Der Elektroinstallateur muss das Wartungspersonal vor versehentlichem Kontakt mit den gefährlichen Spannungen im Endgerät schützen.

WARNUNG! Falls Sie unser Netzgerät in eine Anwendung mit Schutzklasse 1 eingebaut haben, stellen Sie sicher, dass es fachgerecht installiert und zuverlässig geerdet ist.

Die (+) oder (-) Ausgänge können geerdet werden oder potenzialfrei bleiben.

Die Abdeckung des Gerätes/das Gehäuse darf für den Benutzer nicht zugänglich sein.
Der Eingangsklemme ist nicht für die Verwendung als Verdrahtungsanschluss im Feld geeignet.

Für Produkte mit Gehäuse, verwenden Sie keine Schrauben, die in das Gerät mehr eindringen als; siehe Zeichnung
Eine interne Sicherung schützt das Gerät und darf durch den Benutzer nicht ausgetauscht werden. Im Fall von einem Defekt muss das Gerät an TDK-Lambda oder einen der autorisierten Vertriebshändler zurückgeschickt werden.

Ein geeignetes mechanisches, elektrisches und brandgeschütztes Gehäuse muss als Schutz vor der Gefahr von mechanischen Risiken, Stromschlägen und Brandschutz in dem Endgerät vorgesehen werden.

Gefahren durch elektrische Energie:
Von bestimmten Netzteilen kann, je nach Einstellung der Ausgangsspannung, eine gefährliche elektrische Energie ausgehen (240VA). Die Endgerätehersteller müssen einen Schutz für Servicepersonal vor unbeabsichtigtem Kontakt mit den Ausgangsanschlüssen dieser Netzteile vorsehen. Kann aufgrund der Einstellung gefährliche elektrische Energie auftreten, dürfen die Anschlüsse für den Benutzer nicht zugänglich sein.

Die Geräteabdeckung/das Gehäuse wurde so entwickelt, dass das Fachpersonal vor Gefahren geschützt wird. Sie dürfen nicht als Teil der externen Abdeckung der Endapplikation verwendet werden, die für den Betreiber zugänglich sind. Das Netzteilgehäuse oder Teile davon, können unter voller Belastung erhöhte Temperaturen erreichen, die für den Betreiber als nicht sicher betrachtet werden.

Consignes générales de sécurité:

FRANÇAIS

LIRE LES CONSIGNES DE SECURITE

Entretien:
Ces produits ne peuvent pas être réparés par l'utilisateur. Seuls, TDK-Lambda et ses agents agréés sont autorisés à effectuer des réparations.

Composants critiques:
Ces produits ne doivent pas être utilisés en tant que composants critiques dans des systèmes de commande nucléaire, dans des systèmes de sauvetage ou dans des équipements utilisés dans des environnements dangereux, sans l'autorisation écrite expresse du directeur général de TDK-Lambda EMEA.

Utilisation du produit:
Ces produits sont conçus pour être utilisés dans un équipement hôte dont l'accès n'est autorisé qu'aux personnes compétentes.

Ce produit est un composant d'alimentation électrique et est conforme à la directive EMC.
La performance CEM d'une alimentation considérée comme un composant d'un équipement sera affectée par l'équipement final, la conformité aux normes CEM énoncée et la conformité à la directive CEM doivent être confirmées après installation de l'alimentation par le fabricant de l'équipement final.
Pour obtenir des conseils concernant nos conditions d'essai, veuillez consulter notre site Web à l'adresse https://emea.tdk-lambda.com/EMC_guidance ou contacter votre bureau de vente local TDK-Lambda.

Environnement:
Ces produits sont IPX0, et donc on ne doit pas utiliser des produits chimiques/solvants, des produits de nettoyage et d'autres liquides.

Environnement fonctionnel :
Cette alimentation fonctionne en mode commutation pour utilisation dans des applications fonctionnant dans un environnement avec Degré de Pollution 2 et catégorie de surtension II. Elle utilise des cartes des circuits imprimés (PCB) de Groupe IIIb.

Intensité soutirée:
L'intensité soutirée de l'alimentation ne doit pas dépasser l'intensité nominale marquée sur la plaque signalétique, sauf indications contraires dans les limitations du produit décrit dans ce manuel.

Paramètres d'entrée:
Ce produit doit être utilisé à l'intérieur des paramètres d'entrée indiqués dans les limitations du produit dans ce manuel.

Elimination en fin de vie:
L'alimentation contient des composants nécessitant des dispositions spéciales pour leur élimination. Vérifiez que cette alimentation est mise au rebut correctement en fin de vie utile et conformément aux réglementations locales en vigueur.

RISQUE DE CHOC ELECTRIQUE

Attention-Danger haute tension:
Des tensions dangereuses sont présentes dans l'alimentation. L'installateur doit protéger le personnel d'entretien contre un contact involontaire avec ces tensions dangereuses dans l'équipement final.

AVERTISSEMENT: Si ce produit est installé dans un équipement final de classe I, il doit être mis à la terre de manière fiable et installé par un professionnel averti.

Les sorties (+) ou (-) peuvent être raccordées à la terre ou laissées flotttantes.

Le couvercle/châssis de l'alimentation ne doit pas être accessible à l'utilisateur.Le connecteur d'entrée d'alimentation principale ne doit pas être utilisé comme borne de raccordement.
N'utilisez pas de vis pénétrant dans le module sur une profondeur supérieure à :Voir dessins.

Un fusible interne protège le module et ne doit pas être remplacé par l'utilisateur. En cas de défaut interne, le module doit être renvoyé à TDK-Lambda ou l'un de ses agents agréés.

Une enceinte appropriée doit être prévue par l'utilisateur final pour assurer la protection contre les chocs mécaniques, les chocs électriques et l'incendie.

Energies dangereuses:
Certains modules peuvent générer une énergie dangereuse (240VA) selon le réglage de tension de sortie. Le fabricant de l'équipement final doit assurer la protection des techniciens d'entretien contre un contact involontaire avec les bornes de sortie de ces modules. Si une telle tension dangereuse risque de se produire, les bornes ou les connexions du module ne doivent pas être accessibles par l'utilisateur.

Le couvercle et le châssis du module sont conçus pour protéger des personnels expérimentés. Ils ne doivent pas être utilisés comme couvercles extérieurs d'un équipement, accessible aux opérateurs car en condition de puissance maximum, des parties du châssis peuvent atteindre des températures considérées comme dangereuses pour l'opérateur.

Norme generali di sicurezza: ITALIANO

SI PREGA DI LEGGERE LE NORME DI SICUREZZA

Manutenzione:
Il cliente non può eseguire alcuna manutenzione su questi prodotti. L'esecuzione delle eventuali riparazioni è consentita solo a TDK-Lambda e ai suoi agenti autorizzati.

Componenti critici:
Non si autorizza l'uso di questi prodotti come componenti critici all'interno di sistemi di controllo nucleari, sistemi necessari alla sopravvivenza o apparecchiature destinate all'impiego in ambienti pericolosi, senza l'esplicita approvazione scritta dell'Amministratore Delegato di TDK-Lambda EMEA.

Uso dei prodotti:
Questi prodotti sono progettati per l'uso all'interno di un'apparecchiatura ospite che limiti l'accesso al solo personale competente e autorizzato.

Questo prodotto è un alimentatore componenti ed è conforme alla direttiva EMC.
Le prestazioni EMC di un alimentatore utilizzato come componente di un'apparecchiatura saranno influenzate dal montaggio finale, la conformità alle norme EMC indicate e la conformità alla direttiva EMC dovranno essere confermata dopo l'installazione dell'alimentatore da parte del produttore dell'apparecchiatura finale.
Per indicazioni riguardanti le condizioni di test si prega di visitare il nostro sito web all'indirizzo https://emea.tdk-lambda.com/EMC_guidance o contattare l'ufficio vendite TDK-Lambda locale.

Condizioni ambientali:
Questi prodotti sono classificati come IPX0, dunque non devono essere utilizzati sostanze chimiche/solventi, prodotti per la pulizia o liquidi di altra natura.

Ambiente:
Questo prodotto è un alimentatore a commutazione, destinato all'uso in applicazioni rientranti in ambienti con le seguenti caratteristiche: Livello inquinamento 2, Categoria sovratensione II. Questo prodotto contiene schede di circuiti stampati in materiali di Gruppo IIIb.

Carico in uscita:
La potenza in uscita ottenuta dall'alimentatore non deve superare la potenza nominale indicata sulla targhetta dell'alimentatore, fatto salvo dove indicato nei limiti per i prodotto specificati in questo manuale.

Parametri di alimentazione:
Questo prodotto deve essere utilizzato entro i parametri di alimentazione indicati nei limiti per il prodotto, specificati in questo manuale.

Smaltimento:
L'unità contiene componenti che richiedono procedure speciali di smaltimento. Accertarsi che l'unità venga smaltita in modo corretto al termine della vita utile e nel rispetto delle normative locali.

RISCHIO DI SCOSSA ELETTRICA

Avvertimento di alta tensione:
All'interno dell'alimentatore sono presenti tensioni pericolose. Gli installatori professionali devono proteggere il personale di manutenzione dal rischio di contatto accidentale con queste tensioni pericolose all'interno dell'apparecchiatura finale.

ATTENZIONE: Se installato in un'attrezzatura di classe I, questo prodotto deve essere collegato a terra in modo affidabile ed installato in modo professionale.

Le uscite (+) o (-) possono essere messa a terra o lasciate isolate.

I coperchi/il telaio dell'unità non devono essere accessibili da parte dell'utente.
Il connettore dell'alimentazione principale non può essere utilizzato come terminale di collegamento di campo.

Non utilizzare viti che penetrano nell'unità per più di : Vedi disegni

Un fusibile interno protegge l'unità e non deve essere sostituito dall'utente. Nell'eventualità di un difetto interno, restituire l'unità a TDK-Lambda o a uno dei suoi agenti autorizzati.

L'apparecchiatura finale deve includere una recinzione meccanica, elettrica e antincendio per proteggere dai pericoli di natura meccanica, dalle scosse elettriche e dai pericoli di incendio.

Pericoli energetici:
Alcuni moduli sono in grado di erogare energia pericolosa (240VA) a seconda della tensione in uscita impostata. I produttori delle apparecchiature finali sono tenuti a proteggere il personale di manutenzione dal rischio di contatto accidentale con questi terminali dei moduli di uscita. Se impostati su livelli che non escludono l'erogazione di energia pericolosa, questi terminali o collegamenti non devono risultare accessibili da parte dell'utente.

Il coperchio/telaio dell'unità è realizzato per proteggere il personale esperto dai pericoli. Non deve essere usato come parte degli involucri esterni di qualsiasi apparecchiatura, se risulta accessibile da parte degli addetti, poiché è possibile che in condizioni di pieno carico una o più parti del telaio dell'unità giunga/giungano a temperature superiori ai limiti considerati sicuri per l'accesso da parte degli addetti.

Instrucciones generales de seguridad:

ESPAÑOL

LEA LAS INSTRUCCIONES DE SEGURIDAD

Servicio:
Estos productos no pueden ser reparados por los clientes. TDK-Lambda y sus agentes autorizados son los únicos que pueden llevar a cabo las reparaciones.

Componentes fundamentales:
Estos productos no pueden ser utilizados como componentes fundamentales en sistemas de control nuclear, sistemas de soporte vital o equipos a utilizar en entornos peligrosos sin el consentimiento expreso por escrito del Director General de TDK-Lambda EMEA.

Uso de los productos:
Estos productos han sido diseñados para ser utilizados en un equipo central que restrinja el acceso al personal cualificado autorizado.

Este producto es una fuente de alimentación de componentes y cumple con la directiva EMC.
El rendimiento de CEM del suministro eléctrico de un componente se verá afectado por la instalación final; el fabricante del equipo final debe confirmar el cumplimiento de las normas CEM establecidas y la conformidad con la Directiva CEM después de la instalación.
Si desea orientación sobre las condiciones de prueba, visite nuestro sitio web en https://emea.tdk-lambda.com/EMC_guidance o póngase en contacto con la oficina de ventas local de TDK-Lambda

Medioambiental:
Estos productos son IPX0 y, por tanto, no pueden utilizarse sustancias químicas/disolventes, agentes de limpieza ni otros líquidos.

Medio ambiente:
Esta fuente de alimentación es una fuente de alimentación de modo conmutado a utilizar en aplicaciones dentro de un entorno con un Grado de contaminación 2 y una Categoría de sobretensión II. En él se utilizan policloruros de bifenilo del Grupo de materiales IIIb.

Carga de salida:
La potencia de salida tomada de la fuente de alimentación no puede sobrepasar el valor nominal indicado en la etiqueta de la fuente de alimentación, excepto en los casos indicados en las limitaciones del producto en este manual.

Parámetros de entrada:
Este producto debe ser utilizado dentro de los parámetros de entrada indicados en las limitaciones del producto en este manual.

Desecho de la unidad:
La unidad contiene componentes que deben ser desechados de una manera especial. Asegúrese de desechar correctamente la unidad al final de su vida útil y conforme a las normas locales vigentes.

PELIGRO DE DESCARGAS ELÉCTRICAS

Advertencia de alta tensión:
En esta fuente de alimentación hay tensiones peligrosas. El instalador profesional debe proteger al personal de servicio contra cualquier contacto accidental con estas tensiones peligrosas en el equipo final.

ADVERTENCIA: La instalación de este producto en un equipo de clase I la deben llevar a cabo profesionales y el producto debe estar conectado a tierra.

La salida o salidas (+) o (-) pueden conectarse a tierra o se las puede dejar flotando.

Debe impedirse el acceso de los usuarios a la cubierta o cubiertas y al chasis de la unidad.
El conector de entrada de la red no es apto para ser utilizado a modo de bornes de cableado de campo.

No utilice tornillos de montaje susceptibles de penetrar en la unidad más de: Ver dibujos.

Un fusible interno protege la unidad y este no debe ser nunca reemplazado por el usuario. En caso de existir algún defecto interno, la unidad debe ser enviada a TDK-Lambda o a uno de sus agentes autorizados.

El equipo de uso final debe constituir un recinto de protección mecánica, eléctrica y contra incendios de protección mecánica, contra descargas eléctricas y contra el peligro de incendios.

Peligros de energía:
Algunos módulos pueden generar energía peligrosa (240VA) dependiendo de la configuración de la tensión de salida. Los fabricantes de equipos finales deben proteger al personal de servicio contra un contacto accidental con estos bornes de salida de los módulos. Si se configura de modo que pueda generarse energía peligrosa, hay que evitar que el usuario pueda acceder a los bornes o conexiones del módulo.

La cubierta/chasis de la unidad ha sido diseñada para que proteja a las personas cualificadas de los peligros. No deben ser utilizadas como parte de las cubiertas externas de cualquier equipo al que pueden acceder los operarios, ya que bajo unas condiciones de carga completa, la pieza o piezas del chasis de la unidad pueden alcanzar temperaturas superiores a las consideradas seguras para el acceso de los operarios.

Instruções gerais de segurança:

PORTUGUÊS

LEIA AS INSTRUÇÕES DE SEGURANÇA

Manutenção:
Estes produtos não são podem ser submetidos a manutenção por parte do cliente. Apenas a TDK-Lambda e os seus agentes autorizados têm permissão para realizar reparações.

Componentes essenciais:
Não é autorizada a utilização destes produtos como componentes essenciais de sistemas de controlo nuclear, sistemas de suporte de vida ou equipamento para utilização em ambientes perigosos sem a expressa autorização por escrito do Director-Geral da TDK-Lambda EMEA.

Utilização do produto:
Estes produtos foram concebidos para utilização dentro de um equipamento de alojamento que apenas permita o acesso a pessoal qualificado autorizado.

Este produto é uma fonte de alimentação componente e está em conformidade com a directiva EMC.
O desempenho EMC da fonte de alimentação de um componente será afetado pela instalação final. Após a instalação, o fabricante do equipamento final tem de confirmar a conformidade com as normas EMC indicadas e a conformidade com a Diretiva EMC.
Para obter orientação relativamente às condições de teste, visite o nosso website, em https://emea.tdk-lambda.com/EMC_guidance, ou contacte o seu escritório de vendas local da TDK-Lambda.

Ambiental:
Estes produtos são IPX0 e, como tal, não se devem utilizar químicos/solventes, agentes de limpeza e outros líquidos.

Ambiente:
Esta fonte de alimentação é uma fonte de alimentação do modo de comutação para utilização em aplicações com um Nível de Poluição 2 e ambientes da categoria de sobretensão II. São utilizadas placas de circuitos impressos do grupo de materiais IIIb.

Carga de saída:
A potência de saída extraída da fonte de alimentação não deve exceder a classificação assinalada na etiqueta da fonte de alimentação, excepto quando indicado nas limitações do produto neste guia.

Parâmetros de entrada:
Este produto deve ser utilizado dentro dos parâmetros de entrada indicados nas limitações do produto neste guia.

Eliminação no fim de vida:
A unidade contém componentes que necessitam de procedimentos especiais de eliminação. Certifique-se de que a unidade é devidamente eliminada no fim da sua vida útil e que tal é feito em conformidade com os regulamentos locais.

RISCO DE CHOQUE ELÉCTRICO

Aviso de alta tensão:
Estão presentes tensões perigosas dentro da fonte de alimentação. O profissional que realizar a instalação deve proteger o pessoal de assistência contra contactos inadvertidos com estas tensões perigosas do equipamento final.

AVISO: Quando instalado num equipamento de Classe I, este produto deve ser ligado à terra de forma fiável e instalado por um profissional.

As saídas (+) e (-) podem ser ligadas à terra ou deixadas soltas.

O chassis/cobertura(s) da unidade não deve estar acessível ao utilizador.
O conector de entrada de alimentação não deve ser utilizado como terminal de cablagens no local.

Não utilize parafusos de montagem, uma vez que estes penetrarão na unidade em mais do que: Veja os desenhos

Existe um fusível interno que protege a unidade e que não deve ser substituído pelo utilizador. Em caso de defeito interno, a unidade deve ser devolvida à TDK-Lambda ou a um dos seus agentes autorizados.

O equipamento de utilização final deve fornecer um bastidor com protecção mecânica, eléctrica e contra incêndios adequada.

Perigos de energia:
Alguns módulos tem a capacidade de fornecer energia perigosa (240VA), de acordo com a configuração da tensão de saída. O equipamento final do fabricante deve garantir que o pessoal de assistência está protegido contra contactos inadvertidos com estes terminais de saída do módulo. Se essa energia perigosa for produzida, as ligações e os terminais do módulo não devem ser acessíveis pelos utilizadores.

O chassis/cobertura da unidade está concebido de forma a proteger o pessoal especializado de perigos. Não devem ser utilizados como parte das coberturas externas de qualquer equipamento em que possam estar acessíveis aos operadores, uma vez que em condições de carga máxima, algumas peças do chassis da unidade podem atingir temperaturas superiores às consideradas seguras para o acesso do operador.

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DRL-1 Series
Instruction Manual

BEFORE USING THE POWER SUPPLY UNIT

Pay attention to all warnings and cautions before using the unit. Incorrect usage could lead to an electrical shock, damage to the unit or a fire hazard.

- **Warning Symbols**

CAUTION	
. DO NOT MODIFY, DISASSEMBLE THE POWER SUPPLY.	
. READ INSTRUCTION MANUAL BEFORE CONNECTING TO MAINS.	
. ELECTRIC SHOCK HAZARDOUS ON THE CONNECTOR SECTION.	

NOTICE:

Installing/Storage Environment

1. Store the product with ambient temperature –40 to +85 °C, and relative humidity 5 to 95% (No Dewdrop).
2. Avoid operating the unit in over current, short circuit conditions or outside the specified input voltage range as damage may occur.
3. Confirm connections to input/output terminals are correct as indicated in the instruction manual.
4. Use the product where the relative humidity is 5 to 95% (No Dewdrop).
5. Avoid places where the product is subjected to direct sun light.
6. Avoid places where the product is subjected to penetration of liquid, foreign substance or corrosive gas.

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7. Avoid places subject to shock or vibration.
   A device such as a contact breaker may be a vibration source. Set the Power Supply as far as possible from possible sources of shock or vibration.
8. If the Power Supply is used in an area with excessive electronic noise, be sure to separate the Power Supply as far as possible from the noise sources.
9. Don't use the product in the environment with strong electromagnetic field, corrosive gas and conductive substance.

Precautions in Using the product:

When the product is used under the circumstance or environment below, ensure adherence to limitations of the ratings and functions.
Also take countermeasures for safety precautions such as fail-safe installations.

1. Under the circumstances or environment which are not described in the instruction manual.
2. For nuclear power control, railway, aircraft, vehicle, incinerator, medical equipment, entertainment equipment, safety device etc…
3. For applications where death or serious property damage is possible and extensive safety precautions are required.
4. Don't recommond using input power source with large inductance, which may cause power supply operate unstablely.

Note: CE MARKING

CE Marking, when applied to a product covered by this handbook indicates compliance with:
Restriction Of the use of certain Hazardous Substances Directive 2011/65/EU (RoHS2)
Low Voltage Directive 2006/95/EC
EMC Directive 2004/108/EC the low voltage Directive 2006/95/EC

For further installations refer to the web link: emea.tdk-lambda.com/CA816-04-01

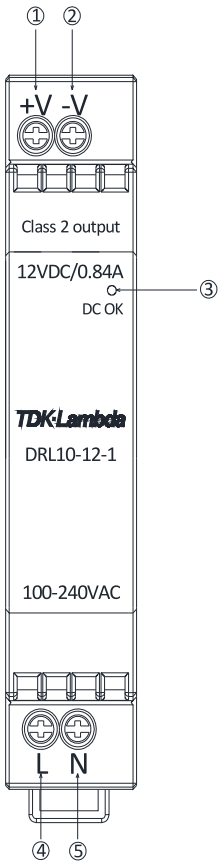
1. Model name identification method

DRL 10 –24 – 1

- 1 — Single phase AC Input
- 24 — Rated Output Voltage
- 10 — Output Power type
- DRL — Series name

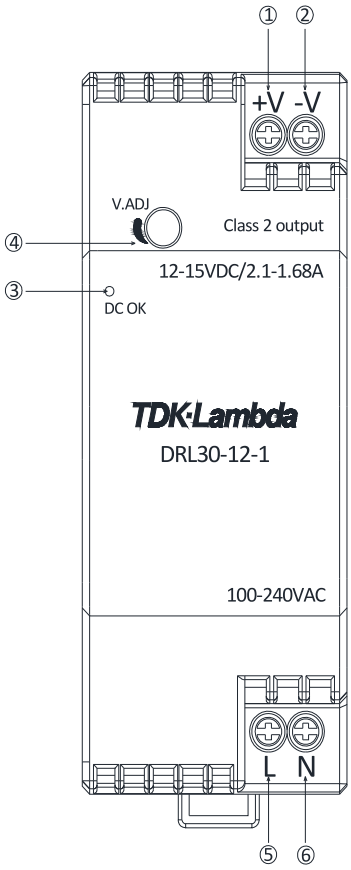
2. Terminal Explanation

2-1. DRL10-1



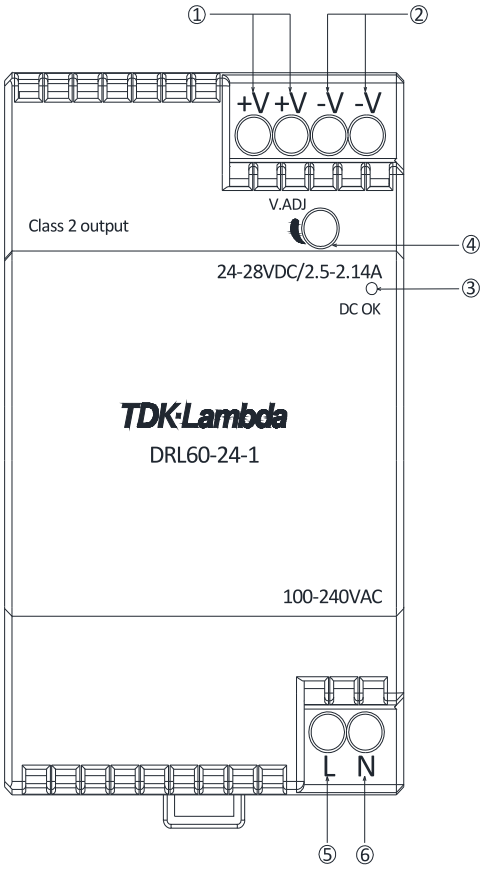
① +V: +Output terminal
② - V: - Output terminal
③ DC OK : Green LED lights when Output Voltage on
④ L: AC Input terminal
Live line (fuse in line)
⑤ N: AC Input terminal
Neutral line

2-2. DRL30-1

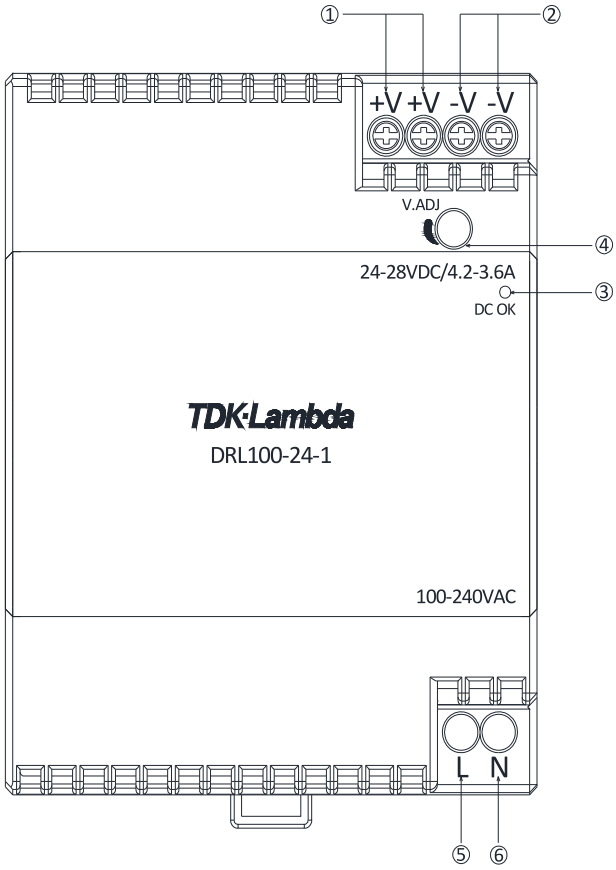


① +V: +Output terminal
② - V: - Output terminal
③ DC OK : Green LED lights when Output Voltage on
④ V.ADJ: Output voltage adjust trimmer
The output voltage rises when a trimmer is turned clockwise.
⑤ L: AC Input terminal
Live line (fuse in line)
⑥ N: AC Input terminal
Neutral line

2-3 DRL60-1



2-4 DRL100-1



① +V: +Output terminal
② - V: - Output terminal
③ DC OK : Green LED lights when Output Voltage on
④ V.ADJ: Output voltage adjust trimmer
The output voltage rises when a trimmer is turned clockwise.
⑤ L: AC Input terminal
Live line (fuse in line)
⑥ N: AC Input terminal
Neutral line

① +V: +Output terminal
② - V: - Output terminal
③ DC OK : Green LED lights when Output Voltage on
④ V.ADJ: Output voltage adjust trimmer
The output voltage rises when a trimmer is turned clockwise.
⑤ L: AC Input terminal
Live line (fuse in line)
⑥ N: AC Input terminal
Neutral line

3. Terminal Connecting Method

Pay attention to the input wiring. If it is connected to wrong terminal, the power supply will be damaged.

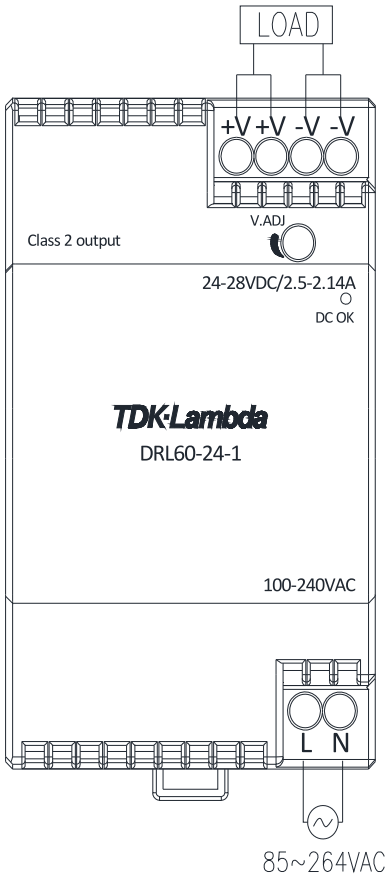
- Input must be off when making connections.
- The output load line and input line shall be separated and twisted to improve noise sensitivity.

When connecting or removing input and output wire , do not apply stress to PCB.

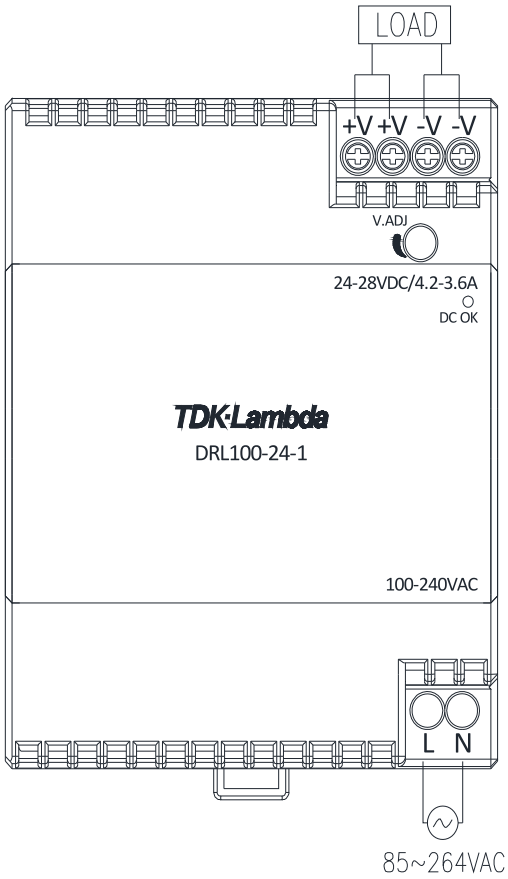
3-1 DRL10-1

3-2 DRL30-1

3-3 DRL60-1



3-4 DRL100-1



4. Explanation of Functions and Precautions

4-1. Input Voltage Range

Input voltage range is single phase 85 ~ 264VAC (47~63Hz) (not safety approved condition).For cases where conformance to various safety specs (UL, CSA, EN) are required, input voltage range will be 100 ~ 240VAC (50/60Hz). Power supply can withstand 300VAC surge for 5 seconds during operation. Input voltage which is out of specification may cause unit damage.

4-2. Output Voltage Range

Output voltage is set to the rated value at shipment. DRL10 output voltage is not adjustable. DRL30,DRL60 and DRL100 V.ADJ trimmer on the front panel side can be used to adjust the output voltage within the range specified (refer to specifications for adjustable range).
To turn the trimmer clockwise, the output voltage will be increased. Take note when the output voltage is increased excessively, over voltage protection (OVP) function may trigger and output voltage will be shut down.. Furthermore, when increasing the output voltage, reduce the output current so as not to exceed the maximum output power.

4-3. Inrush Current

This series has used Power Thermistor to protect the circuit from Inrush Current. Please carefully select input switch and fuse in cases of the high temperature and re-input the power.

4-4. Over Voltage Protection (OVP)

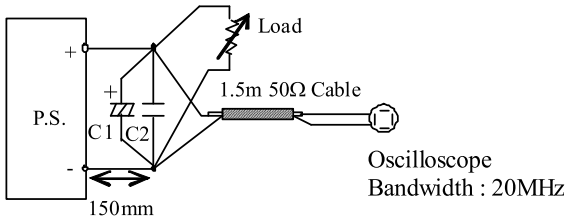
The OVP function (Inverter shutdown method, manual reset type) is provided. OVP function operates within specified range (refer to specification) . To reset OVP, remove the input of power supply for a few minutes, and then re-input. OVP value is fixed and not to be adjusted externally. Never apply more than rated output voltage to output terminal, which may leads to damage. In the case of inductive load, put protective diode in series to the output power line.

4-5. Over Current Protection (OCP)

Hiccup mode with automatic recovery.
OCP function operates when the output current exceeds OCP specification. The output will be automatically recovered when the overload condition is cancelled. Do not operate overload or dead short conditions for more than 30 seconds, which could result in damage or insulation failure. Due to internal protective function , output short causes DRL10-1, DRL30-1 hiccup or latch up, and causes DRL60-1, DRL100-1 hiccup.

4-6. Output Ripple & Noise

The standard specification for maximum ripple value is measured according to measurement circuit as below. When load lines are longer, ripple becomes larger. In this case, electrolytic capacitor, film capacitor, etc. might be necessary to use across the load terminal. The output ripple cannot be measured accurately if the probe ground lead of oscilloscope is too long.

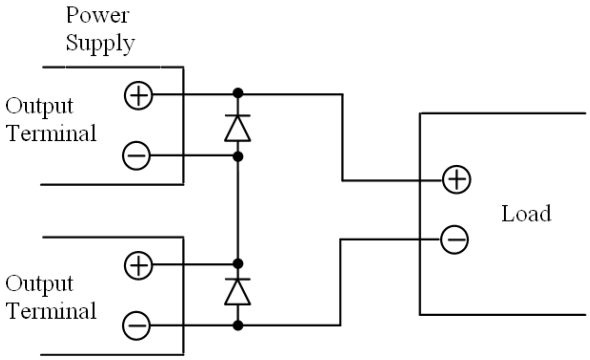


C1 : 100uF Electrolytic Capacitor
C2 : 0.1uF Film Capacitor

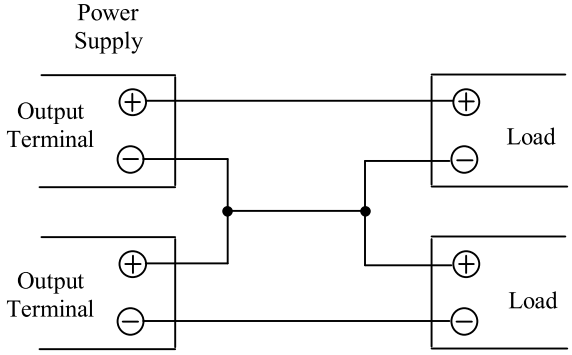
4-7. Series Operation

For series operation, either method (A) or (B) is possible.

Method (A)

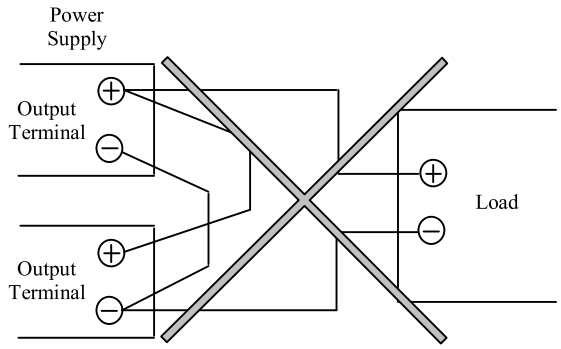


Method (B)



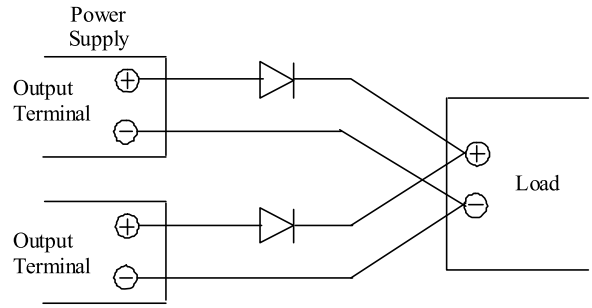
4-8. Parallel Operation

(A) To increase the output current is not possible.



(B) To use as Back-up Power Supply

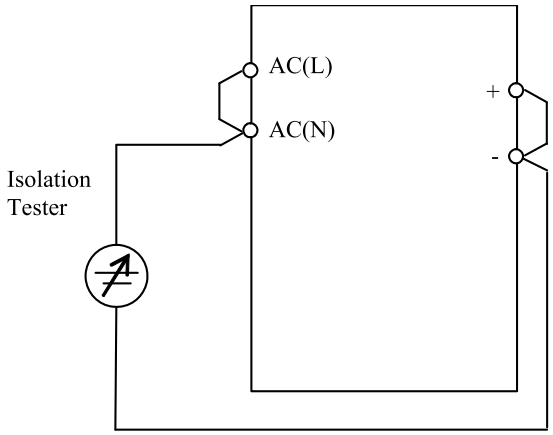
1. Set power supply output voltage higher by the forward voltage drop(VF) of diode
2. Adjust the output voltage of each power supply to be the same.
3. Use within the specifications for output voltage and output power.



4-9. Isolation Test

Isolation resistance between input and output shall be more than 100MΩ at 500VDC. For safety operation, voltage setting of DC isolation tester must be done before the test. Ensure that the unit is fully discharged after the test.

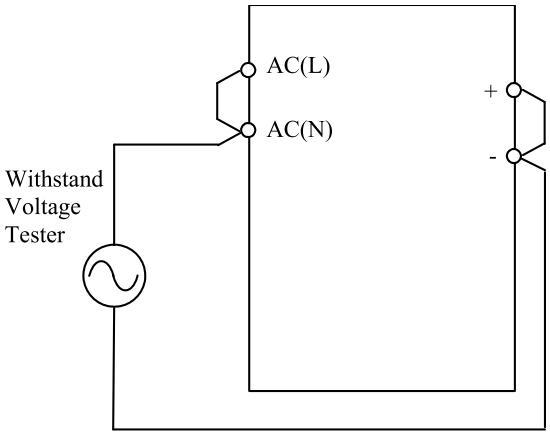
Intput ~ Output : 500VDC 100MΩ or more



4-10. Withstand Voltage

This series is designed to withstand 3.0kVAC between input and output for 1 minute. When testing withstand voltage, set current limit of the withstand voltage test equipment to 20mA. The applied voltage must be gradually increased from zero to the testing value and then gradually decreased for shut down. When timer is used, the power supply may be damaged by high impulse voltage at timer switch on and off. Connect input and output as follows.

Input ~ Output: 3kVAC 1min. (20mA)



4-11. Class 2 limited power source

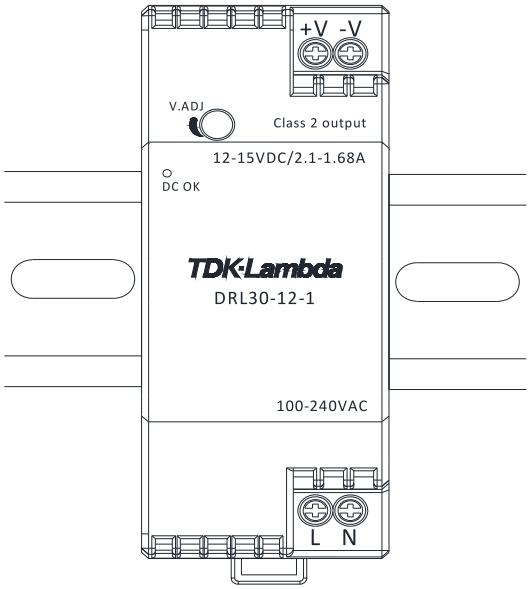
UL1310 class 2 approved models:
DRL10-12-1
DRL10-24-1
DRL30-12-1
DRL30-24-1
DRL60-24-1.

5. Mounting Directions

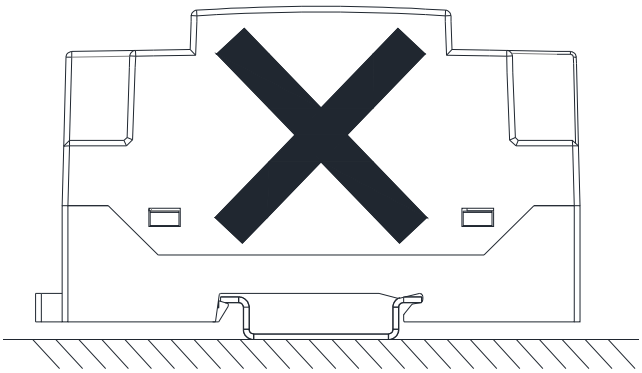
5-1. Mounting Directions

Recommended standard mounting method is (A). Please do not use installation method (B). Refer to the derating below. Do not exceed the load deratings. Keep ventilation holes at top and bottom clear, leave enough space for cooling. Please contact your local sales for particular application related to surrounding space.

Normal mounting (A)



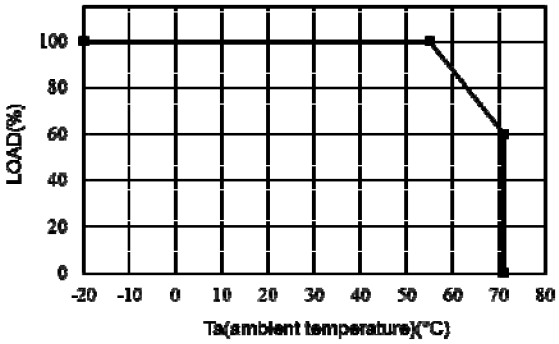
Back Down Mounting (B)



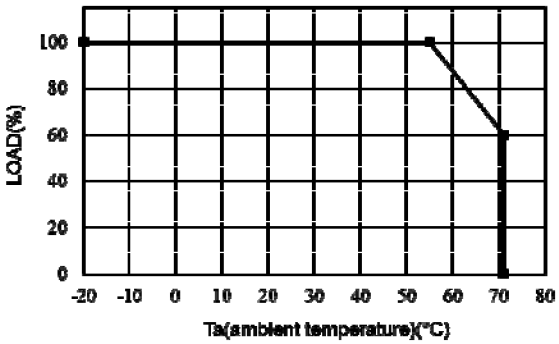
5-2. Output Derating

(Ta: measured at 50mm or less beneath the unit)

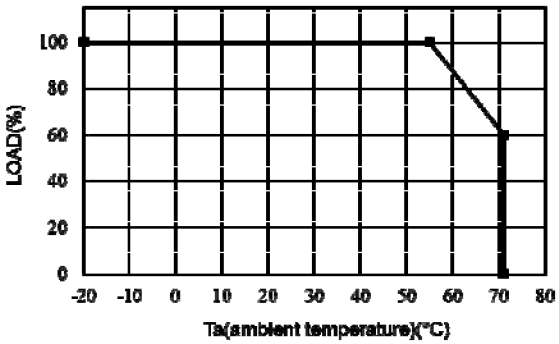
DRL10-1



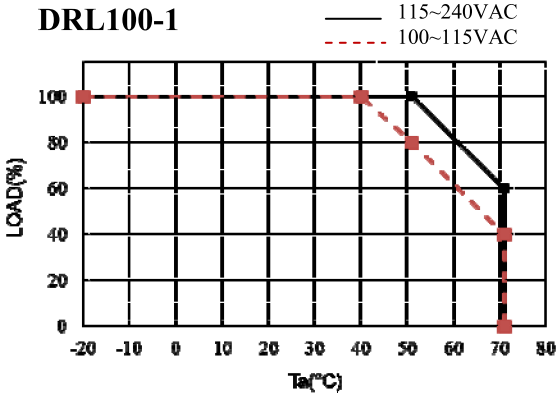
DRL30-1



DRL60-1



DRL100-1



6.Wiring Method

- The output load line and input line shall be separated and twisted to improve noise sensitivity.
- Use all lines as thick and short as possible to make lower impedance.
- Noise can be eliminated by attaching a capacitor to the load terminals.
- EMI reduction performance by winding the cable around the toroidal ferrice core several times. Use any appropriate commecially available ferrite core from local vendor.
- Recommened wire type: solid and stranded, AWG 12~24(wire strip length:4~5mm , 5mm max).

7. Internal and External Fuse Rating

(1) Internal fuse information:

DRL10-1	2010T1A250V (Walter) (AC250V T1A)
DRL30-1	2010T1.6A250V (Walter) (AC250V T1.6A)
DRL60-1	2010T2A250V (Walter) (AC250V T2A)
DRL100-1	0215004.MXEP (Littelfuse) (AC250V T4AH)

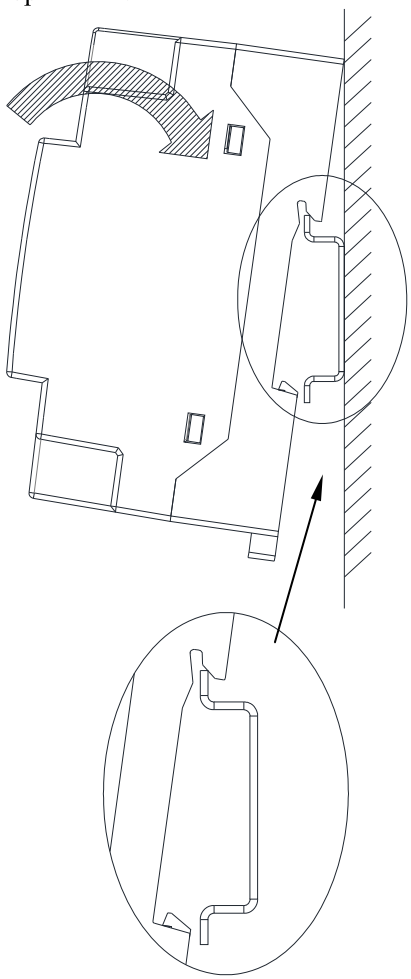
(2) External fuse rating:
Refer to the following fuse rating when selecting the external fuses that are to be used on input line. Surge current flows when line turns on. Use slow-blow fuse or time-lag type fuse. Do not use fast-blow fuse. Fuse rating is specified by in-rush current value at line turn-on. Do not select the fuse according to input current (RMS.) values under the actual load condition.

DRL10-1	AC250V 1A~8A
DRL30-1	AC250V 1.6A~8A
DRL60-1	AC250V 2A~8A
DRL100-1	AC250V 4A~8A

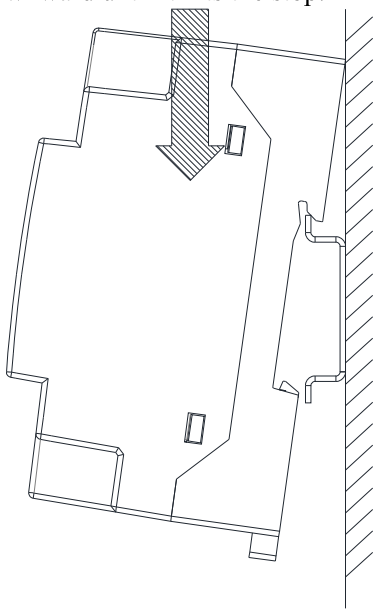
8-1. Power supply mounting on DIN RAIL (TS35 or equivalent)

Make sure input and output wire disconnected when mount power supply onto rail

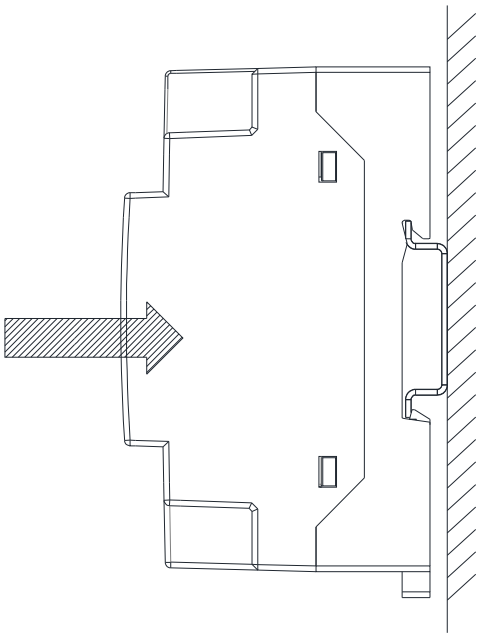
(1) Tilt the unit slightly rearwards, fit the unit over top hat rail.



(2) Slide it downward until it hits the stop.

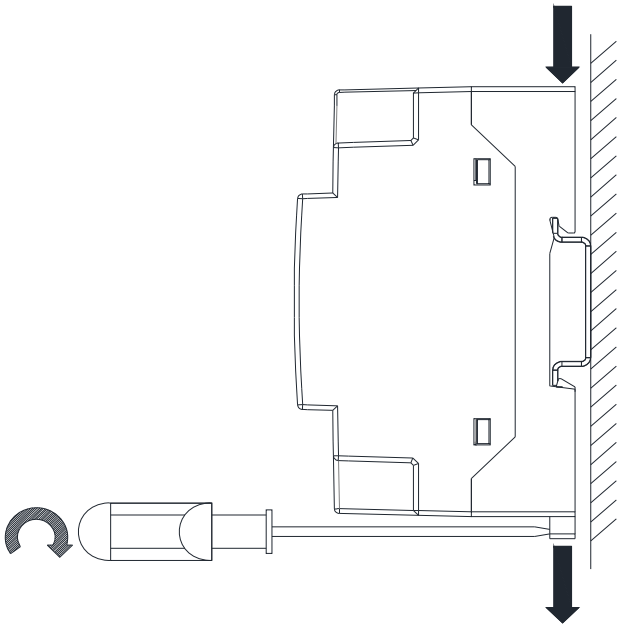


(3) Press against the bottom front side for locking.
Shake the unit slightly to check the locking action.



8-2. Power supply removal from DIN RAIL

Switch main power off and disconnect your system from the supply network. Move the removal hole on the rear down edge downwards by rotating screw driver. Gently lift lower front edge of the unit (tipping) and remove it.



9. Before concluding that the unit is at fault...

Before concluding that the unit is at fault, make the following checks.

- Check if the rated input voltage is connected.
- Check if the wiring of input and output is correct.
- Check if the wire material is not too thin.
- Check if the output voltage control (V.ADJ) is properly adjusted.
- Check if the output current and output wattage do not over specification.
- Audible noise can be heard during Dynamic-Load operation.
- Audible noise can be heard when input voltage waveform is not sinusoidal wave.

10. Returns

Please contact your local sales office or visit our website to arrange return of any faulty product..

11. DRL-1 series UL508 Listed Condition

1) Wire Requirement
   - Use minimum 75°C wire
   - Use copper conductor only

Connector	Recommended Wire	Max. Torque
INPUT (L, N)	solid and stranded, AWG12~24(wire strip length:4~5mm , 5mm max).	0.51N.m (4.5Lb.inch)
OUTPUT (+V, -V)	solid and stranded, AWG12~24(wire strip length:4~5mm , 5mm max).	0.51N.m (4.5Lb.inch)

2) For use in a Pollution degree 2 environment only
3) These products are considered for use where maximum surrounding air temperature does not exceed 71°C. When installing these products please refer to section **5-2** for deratings.
4) Indoor use only

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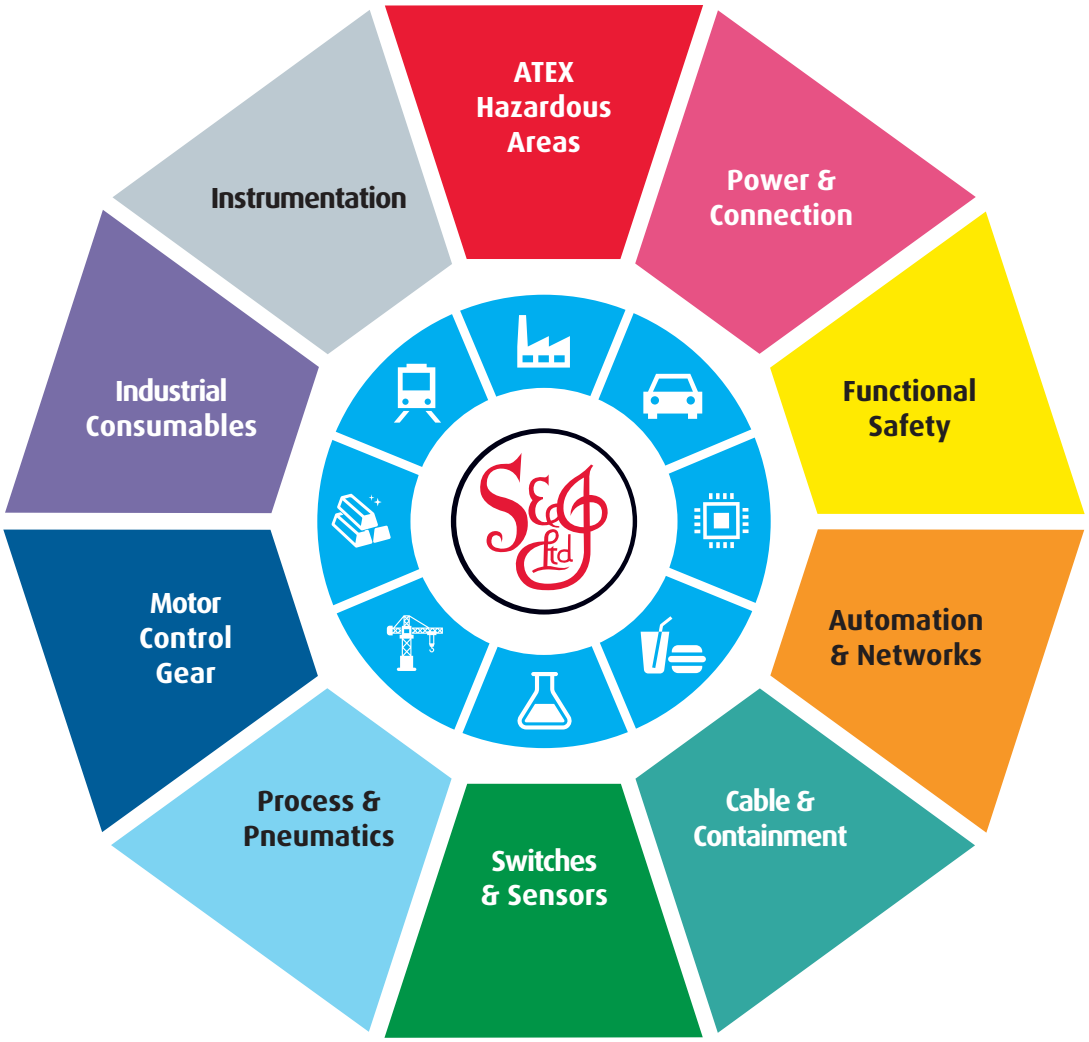

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