

INRUSH CURRENT LIMITER for DIRECT CURRENT

LCA25 **LOREME**

- **Limiting the inrush current at start-up**

current clamping for capacitive load or DC-DC converter

avoid to oversize protections

Increases system availability and safety

avoid the blocking of power supplies

- **Wide operational range**

Rating voltage 20 to 270Vdc

Rating current up to 3A



The LCA25 works like a current clamping circuit, it limits the peaks of current in the load when starting installations.

Description:

The tripping current or inrush current is the name of an transient overcurrent that occur when powering up some electrical devices (ex: DC/DC converters, capacitor, ...)

This peak current can reach 10 to 20 times the steady state current. By limiting this transient current, the LCA25 reduce voltage drops in the cables, allowing to reduce the cabling sections and to install small and fast circuit breakers for better protection and more reliable starting without overloads.

The LCA25 is designed for use in automation systems that require high availability, allowing the non triggering of protection during power up or reboot. It limits also the constraints on battery powered systems. It is suitable when DC/DC converters operate in parallel, which can generate peak current up to several hundred amperes.

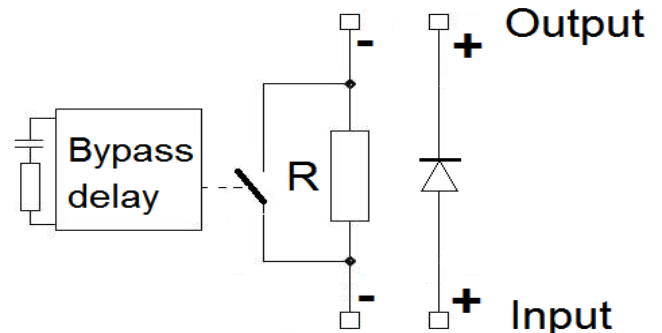
Characteristics:

- Power supply 20...265 Vdc. Rated voltage to be defined
- Limiting current up to 3A. Rated current to be defined
- Low dissipated power < 1 Watts
- Protected against reversed polarity
- Limiting time: 400ms typical

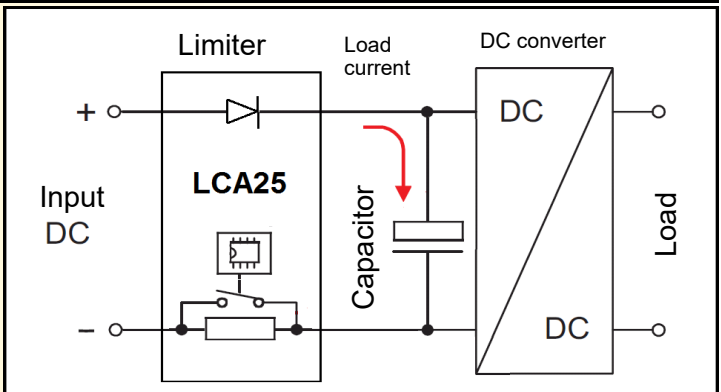
Feature:

- Symmetrical DIN rail mounting,
- Connection with screw terminals (up to 2.5mm² section),
- Conformal coating,
- Protection rating (housing/terminal blocks) : IP20
- Green LED indicator for output voltage presence
- Resistant, protected against shock and vibrations

Internal synoptic :



Typical application diagram



The inrush current is limited by a fixed resistor. After a delay, this resistor is shunted by a mosfet transistor.

Version and order code:

LCA25 - U - i / i max : DC current limiter
U : rated operating voltage
i : nominal current consumed by load
i max : limited current.

CURRENT LIMITER characteristics

Limiting time	400ms typical
Peak dissipated power (during limitation)	200 Watts max
Dissipated power (without limitation)	1 Watts Max
Number of start-up cycles	5 per minute max
Cooling	natural convection
Voltage drop (without limitation)	2V max

POWER SUPPLY

20.....265 Vdc (rated voltage to be defined)
protected against reversed polarity

Power consumption : < 1W

OUTPUT

2 parallel outputs for connection of 2 loads.

Remark : the limitation is common for the two outputs

ENVIRONMENT

Operational temperature	-20 to 70 °C
Storage temperature	-40 to 85 °C
Humidity	95 % non condensing
Climatic resistance:	500 hours at 95% Hr , 55°C in air
Weight	50 g
Protection rating	IP 20
MTBF (MIL HDBK 217F)	> 4 000 000 Hrs @ 25°C
MTBF (MIL HDBK 217F)	> 1 500 000 Hrs @ 70°C
Life time	> 200 000 Hrs @ 30°C
Life time	> 100 000 Hrs @ 50°C
Dielectric strength	No isolation
Insulation resistance	No isolation

Electromagnetic compatibility 2014/30/UE / Low Voltage Directive 2014/35/UE

Immunity standard for industrial environments EN 61000-6-2		Emission standard for industrial environments EN 61000-6-4
EN 61000-4-2 ESD	EN 61000-4-8 AC MF	EN 55011 group 1 class A
EN 61000-4-3 RF	EN 61000-4-9 pulse MF	
EN 61000-4-4 EFT	EN 61000-4-11 AC dips	
EN 61000-4-5 CWG	EN 61000-4-12 ring wave	
EN 61000-4-6 RF	EN 61000-4-29 DC dips	

**WIRING AND OUTLINE DIMENSIONS:**