

# Unicla<sup>®</sup> eDrive<sup>™</sup>

## Voltage converter 24-48 V dc 3000 W

### Introduction

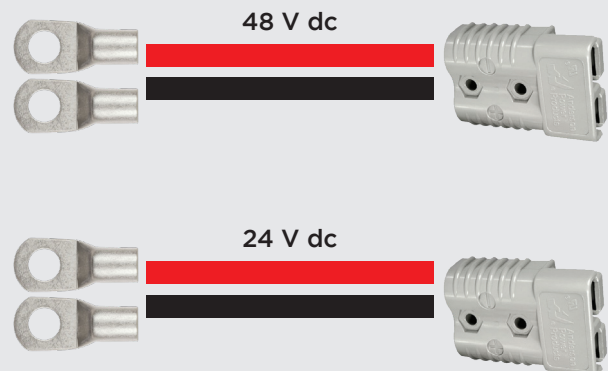
The typical field voltage for heavy vehicle systems such as trucks, and earth moving is 24 V dc. The Unicla voltage converter provides a bridging solution between 24 V dc supply and the Unicla 48 V dc eDrive compressor. The voltage converter offers a simple, compact and fanless design without the need for complicated setup or control.

### Typical installation

Review the power supply location (24 V dc) in relation to the positioning of the 48 V dc eDrive considering minimising cable length and potential mounting positions. The converter can be installed using the mounting tabs in any orientation and should be mounted in an enclosed but ventilated area. The kit includes tubes of thermally conductive adhesive silicone which should be applied to the underside of the unit to assist with heat dissipation into the mounting surface.

The commissioner will need to install a cable connection from the 24 V dc power supply to the converter input and a cable from the converter 48 V dc output to an SB120 Anderson plug connection (the eDrive includes a flylead with mating SB120 Anderson plug). Some important considerations would be the gauge of the cable (length of run, conditions), type of cable (fire rating, install specification) and requirement for isolation and fuse protection. The Unicla voltage converter is supplied with clearly identified voltage terminals in the form of threaded M6 posts on the 24V input and M5 Phillips head screws on the 48V output.

Part Number	UXD3000D
Input voltage	18 to 32 V dc
Start up voltage	18 V dc @ 100% loading
Output voltage	48 V dc
Current	62.5 A
Power consumption (no load)	< 1 W
Efficiency	94%
Voltage regulation	0.01
Load regulation	0.03
Ripple voltage (mvp-p)	500 mv connected to 22UF, capacitor ESR <0.1Ω100KHZ
Overcurrent protection	At rated output. Activate when rated current over 120%. Auto reset
Short circuit	Internal 200 A fuse
Isolation	No isolation from input to output
IP rating	IP54
Dimension	220 x 156 x 65 mm
Weight	3 kg
Cooling	Natural cooling by fins
Rated ambient temperature	45°C
Service life	> 100,000 hrs



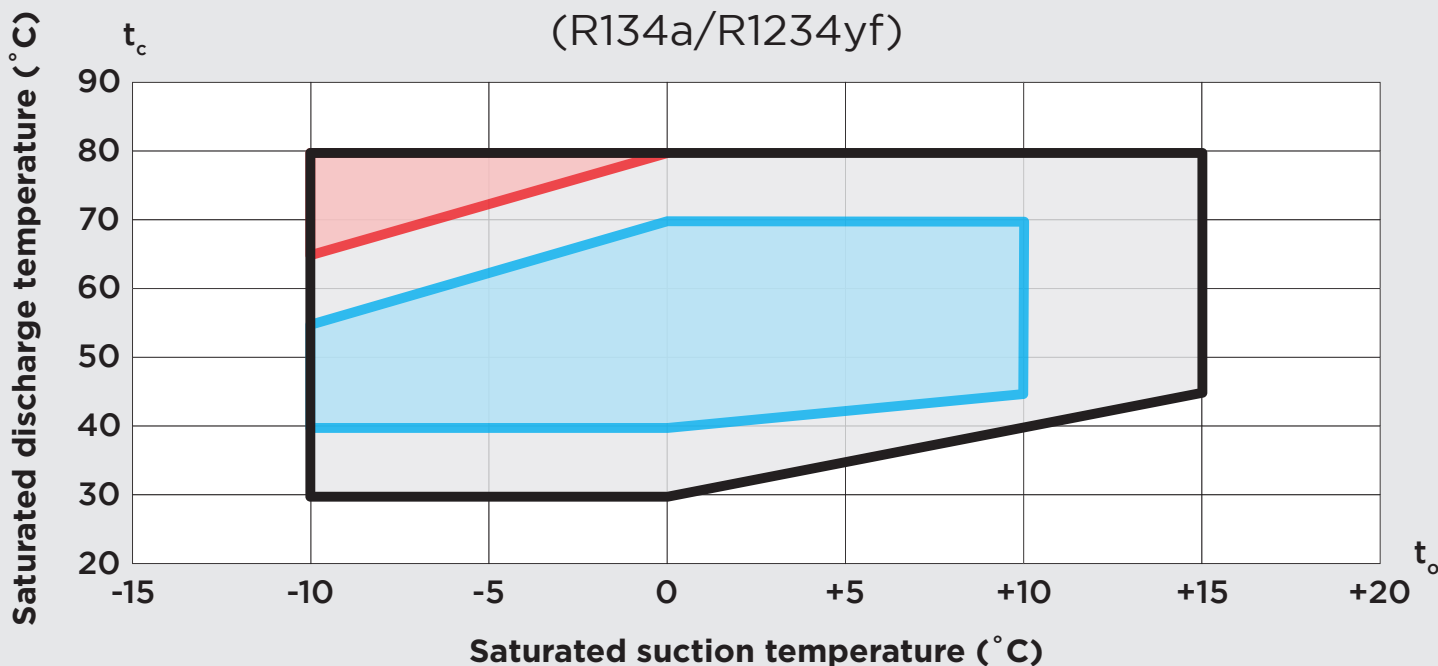


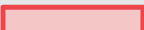
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## Operational limits (R134a/R1234yf)



-  Operational limit
-  Ideal operation
-  Operation with maximum 20K superheat at suction

$t_c$  = Condensing temperature  
 $t_o$  = Evaporating temperature

### R134a

Model	Cond. T	Evap. T			kW
		-5	0	5	
UD150	35	6.2	7.6	9.7	Ca.
		2.1	2.4	2.6	PC
	45	5.0	6.2	8.0	Ca.
		2.4	2.6	2.8	PC
	55	4.0	5.2	6.6	Ca.
		2.5	2.7	3.0	PC

### R1234yf

Model	Cond. T	Evap. T			kW
		-5	0	5	
UD150	35	5.9	7.2	9.2	Ca.
		2.0	2.3	2.4	PC
	45	4.6	5.4	7.4	Ca.
		2.1	2.2	2.5	PC
	55	3.6	4.7	5.9	Ca.
		2.2	2.3	2.6	PC

# Unicla® eConnect™

A two-way conversation. At last.

Harness the true power of eDrive with eConnect, the interface between man and machine. eConnect is a multi-platform digital suite that communicates directly with eDrive, providing a wealth of data and information.

