

AUXILIARY POWER SYSTEM FOR THE DIESEL ELECTRIC LOCOMOTIVE

The Auxiliary Power Converter supplies the auxiliary AC-power needs of the diesel-electric locomotive. It charges also the batteries. The unit is installed inside the locomotive. Its supply voltage is either 3*400 Vac from shore, (variable- voltage/frequency 3*200...460Vac/ 40...100Hz from the synchronous alternator of the locomotive or 110 Vdc from the batteries of the locomotive. The unit enables use of maintenance free AC-motors for the auxiliary drives.

TECHNICAL DATA:

Type: 39TX350DCDC40

Input Characteristics:

Nominal input voltages:

110 V_{DC} from battery
 shore supply 3*400Vac / 50Hz or 1*1500Vac
 alternator supply 3*200...460Vac/ 40...100Hz

Output Characteristics:

Auxiliary supply /AC 1:

- Output voltage $U_{AN} = 0...3 \times 230 V_{rms} \pm 5\%$
- Output current $I_{AN} = 39 A$ (16A when supplied from batteries of 110Vdc)
- Output frequency $f_N = 0...50 Hz$
- Output power 15 kVA or 6 kVA with battery supply
- Overload capacity
 - 1.5 x I_{AN} : at +60°C 5s/10 min
 - 2.5 x I_{AN} : at +60°C 2s/20 min; $f_N < 60Hz$

Auxiliary supply /DC 2:

- Output voltage $U_B = 0...138 V_{dc}$ (adjustable)
- Output current $I_B = 40 A$

Applications:

- Auxiliaries of diesel-electric locos
- Auxiliaries of diesel-electric trains
- Auxiliaries of electric locos
- Other multi supply units



Auxiliary Power Converter for diesel locomotive is mounted inside the locomotive.

Mechanical Data

Input1		Input2	
Nominal input voltage	3*400 VAC	Nominal input voltage	110 VDC
Uin1	3*200...460VAC 1*460 VAC	Uin2	
Operating range	3*200... 460 VAC	Operating range	77 – 138 VDC
AC-output		General	
Output voltage	0..3x230 Vrms ± 5%	Efficiency	> 90 %
Uout		Temperature range	-40 ...55°C
Frequency	0..50 Hz	Humidity	Less than 95%
Continuous power	15 kVA (6kVA)		
Pout		Cooling	Forced cooling
Max. output power	23 kVA	Dimensions in mm	600 x 600 x 350 mm (LxWxH)
Distortion factor	20 %	Weight	60 kg
DC-output	Battery charging *	Mounting	Inside locomotive
Output voltage	90 ... 138Vdc	Housing	IP 54
Output current	0...40Adc		
Output power	5 kW		
* when input 1 available			

Complying standards

Electrical particles	EN 50207, Railway applications – Electronic power converters for rolling stock
Vibration shock etc.	EN 50155, Railway applications – Electronic equipment used on rolling stock
EMC	EN 50121-3-2, EMC on board rolling stock

Block diagram

