

IR040H3R125ATEZ Integritas™ Rectifier

Advanced Technology to Simplify Your Power Needs



The ABB IR040H3R125ATEZ true three-phase rectifier efficiently transforms energy from any standard three-phase source into 125 volt DC power needed for industrial applications. The rectifier operates using three-phase input voltages from 320 to 530 VAC without the need of a neutral conductor. This means that one single rectifier can be used globally to meet all your 125V powering needs.

Efficiency is market leading for diode protected, true hot pluggable, 125 volt rectifiers.

The IR040H3R125ATEZ rectifier offers a powerful combination of efficiency, network simplicity, and reliability.

A True System Solution

- Integritas™ rectifiers are part of the proven global platform line of rectifier products designed to meet the demanding needs of industrial customers.
- Monitoring/Control – the built in microprocessor controls and monitors all critical rectifier functions and communicates with the system controller using the built in Galaxy Protocol serial interface.
- Designed and tested to work with battery modules to support a safe, reliable, and low cost way to deliver “5 nines” level of reliability.

Features & Advantages

- Compact – 1 RU form factor provides high power density at 27 Watts/cubic inch.
- Efficient – flat efficiency curve >95% efficiency over a wide range of loads.
- Flexible Output – provides up to 50 amps of power over a broad voltage output band for fast charging of discharged batteries.
- Programmable - output is programmable between 90 - 160 VDC to support nominal 110V and 125V battery strings.
- Wide Range Input – operates at three-phase AC voltage from 320 to 530 VAC.
- Temperature Hardened - operates from -20°C to 75°C
- Fail-Safe Performance – hot insertion capabilities allow for rectifier replacement without system shutdown; soft start and inrush current protection prevents nuisance tripping of upstream breakers.
- Extended Service Life – parallel operation with automatic load sharing ensures that load is distributed across all units.
- Plug and Play – when installed into a shelf connected to a system, the controller will automatically initialize all the set up parameters of the rectifier.

Specifications

Inputs

Voltage (VAC), 3Φ	320 - 530 (UL rated 380-480)
Current Draw (A)	10 max @ 380 V; 8 max @ 480 V
Power Factor	0.96 - 0.99 @ loads over 50%
THD	< 5% @ loads over 70% typical
Holdover	>1ms down to 97 VDC
Frequency (Hz)	45 to 66

Outputs

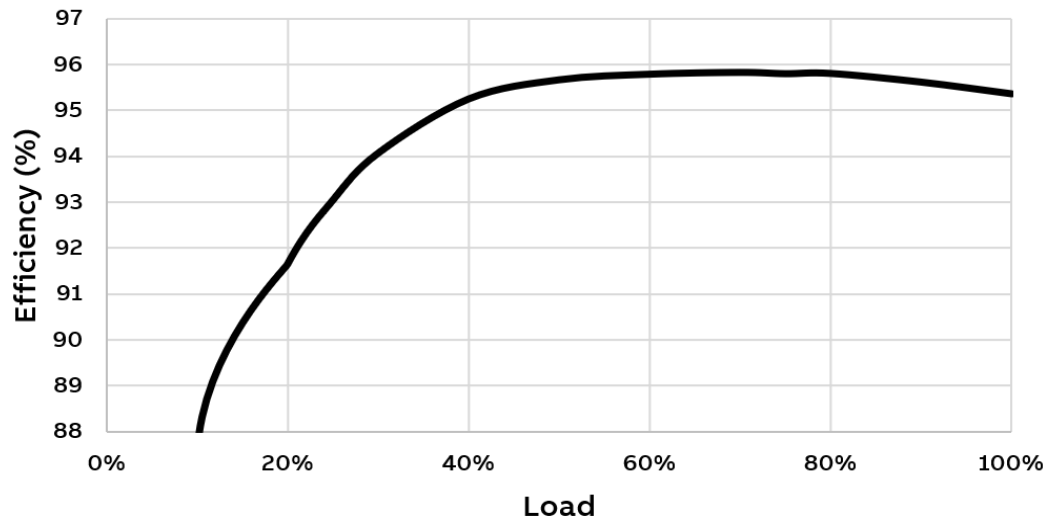
Voltage (VDC)	90–160 range, default = 125 Vdc
Current (A)	50 @ 90 - 125 V 40 @ 142 V 32 @ 160 V
Power (W)	6250
Regulation	± 0.5% (with controller operation)
Ripple (mV _{rms})	<100
Efficiency	96% Peak
Soft Start	Starts up into fully discharged batteries.

Environmental, Compliance & Physical

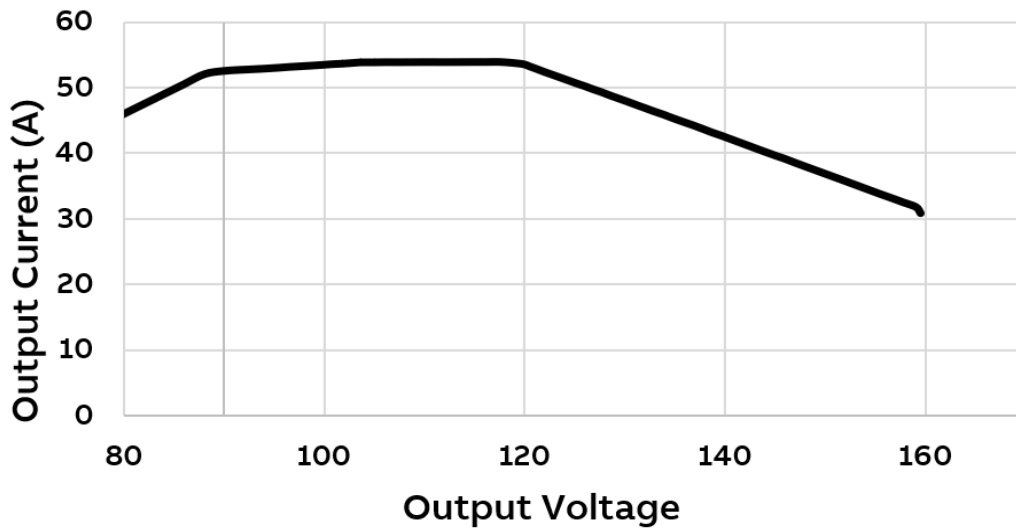
Operating Temperature Range (°C)	-20 to +75 (Output de-rates at 2%/°C at T>55°C)
Cooling Method	Front to back airflow with onboard temperature controlled fans
Operating Relative Humidity	0 - 95% (non-condensing), For use in a controlled environment
Electromagnetic Compatibility	FCC Part 15 EN 55032 (CISPR32) EN 55035 (CISPR 35) GR-1089
Lightning Surge	EN/IEC 61000-4-5 Level 4 ANSI C62.41
Agency Certifications	UL1012, CSA C22.2 EN62368-1 GR-1089 GR-63-CORE
Heat Release (BTU/hr)	853 @ max power
Mean Time Between Failure (MTBF); Life	300k Hours @ 25°C per Telcordia SR-332, Method 1, Case 3; 10 Years
Dimensions, H x W x D (in.) [mm]	1.6 x 7.98 x 17.9 [41 x 202 x 445]
Weight (lbs) [kg]	10 [4.5]

Specifications

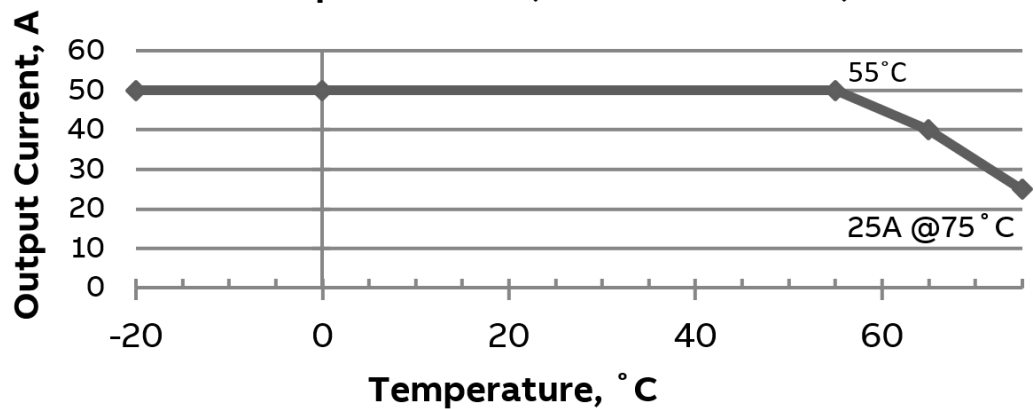
Efficiency vs Load @480Vac Input & 125Vdc Out



Current Limit Profile



Rated Output Current (at Vout = 125VDC)

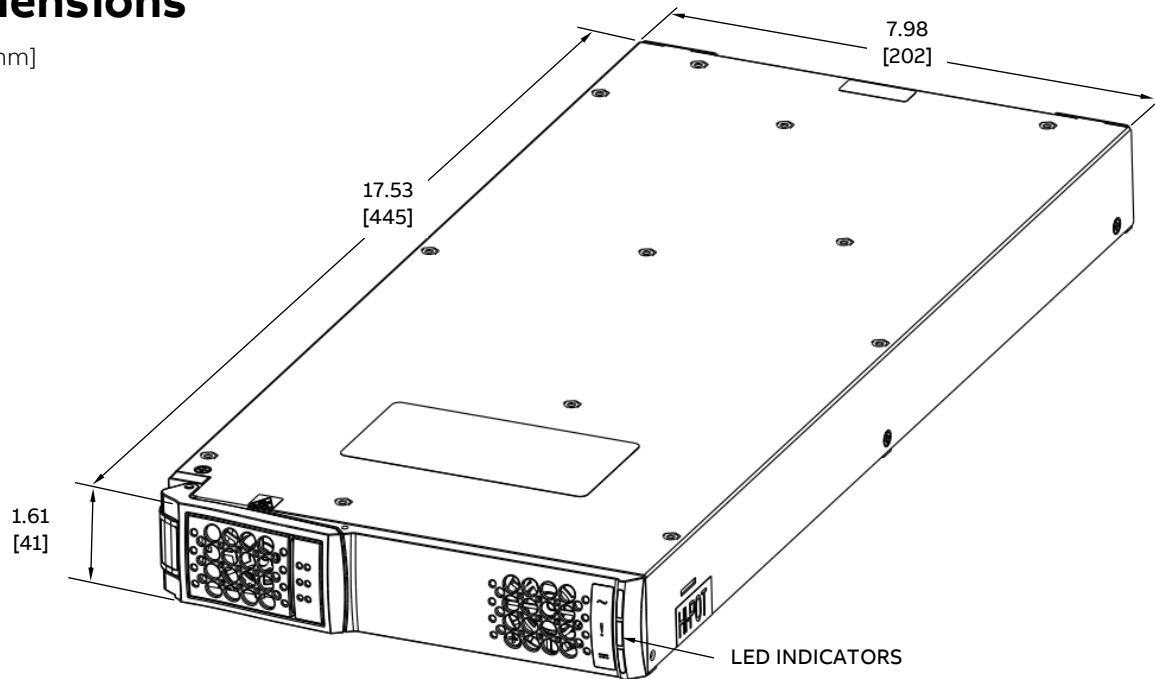


Ordering Information

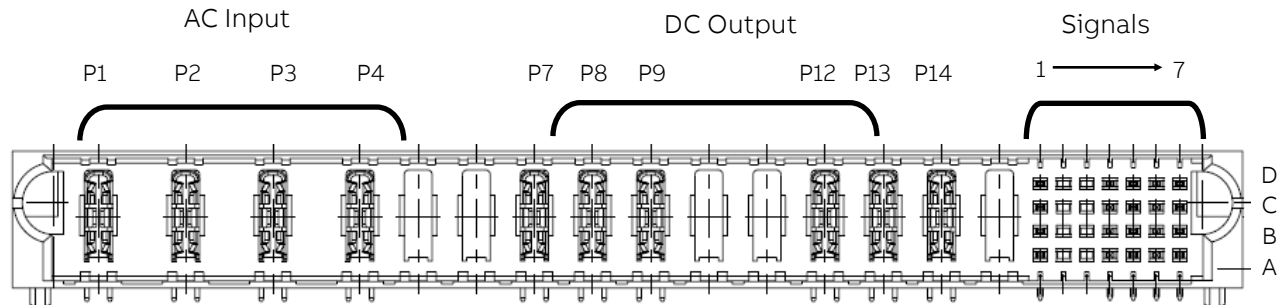
Item	Description	Ordering Number
IR040H3R125ATEZ	125 VDC industrial power rectifier	150052768

Dimensions

Inch [mm]



Signal Interface



Back view

POWER														
AC INPUT				POWER						DC OUTPUT				
P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14	P15
L1	L2	L3	GND	EMPTY	EMPTY	VOUT+	VOUT+	VOUT+	EMPTY	EMPTY	VOUT-	VOUT-	VOUT-	EMPTY

SIGNALS							
1	2	3	4	5	6	7	
12V_INT	EMPTY	EMPTY	SHELF_ID1	ALERT1	SDA1/RS485-	SCL1/RS485+	D
SEC_RTN	EMPTY	EMPTY	SHELF_ID10	MOD_PRES	FAULT	LGND	C
SLOT_ID	EMPTY	EMPTY	STBY_MRGN	VPROG	PFW	5VA	B
INTERLOCK	EMPTY	EMPTY	REM_ONOFF	ALERT0	SDA0	SCL0	A



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