

# UY Series

## 35 Amp Solid-State Power Controller



- SCR output panel mount solid-state relay / heat sink assembly
- Output ratings up-to 35 amps @ 40°C ambient temperature
- IP20 touch-safe housing with removable flaps over the input and output terminals
- Green LED input status indicator
- Compact, thermally efficient heat sink to maximize overall product life expectancy
- Direct-bond copper (DBC) substrate for superior thermal performance
- Epoxy free design eliminates stress on internal components due to epoxy expansion and contraction
- Direct-power lead-frame design reduces solder joints and enhances reliability
- EMC compliant, level 3
- Solid-state relay approvals: cURus, VDE/TÜV, and CE

Input / Output Specifications	DC Input / Control			AC/DC Input / Control	
	U50DY	U650HDY	U50HDY-10	U50AY	U50HAY
Part Number: HBC -	U50DY	U650HDY	U50HDY-10	U50AY	U50HAY
Operating Voltage (Vrms; 47-440Hz)	12-280	24-600	24-510*	24-275	24-510
Load Current Range (Amps RMS)	.15 - 35	.15 - 35	.15 - 35	.15 - 35	.15 - 35
Output Switching Type	Zero-Cross	Zero-Cross	Instantaneous	Zero-Cross	Zero-Cross
Celduc Solid-State Relay Utilized	SO945460	SO965460	SO765090	SO845970	SO965940
Output Over Voltage Protection	None	None	Varistor + RC	Varistor	TVS
Transient Overvoltage (Vpk)	600	1200	950	450	1100
Max On-State Voltage Drop (Vrms @ Imax)	1.1	1.1	1.1	1.1	1.1
Max Surge Current (Apk; 50/60Hz)	750/788	750/788	750/788	750/788	750/788
Max I <sup>2</sup> T for Fusing (A <sup>2</sup> S; 50/60Hz)	2800/2577	2800/2577	2800/2577	2800/2577	2800/2577
Max Off-State Leakage Current (mArms)	1.0	1.0	5.0	1.0	1.0
Input / Control Voltage Range	3-32Vdc	3.5-32Vdc	3.5-32Vdc	20-265Vac/dc	20-265Vac/dc
Input Current Range (mA)	10-13	10-13	10-13	5-10	5-10
Max. Turn-On/Turn-Off Time (msec)	½ AC Cycle	½ AC Cycle	0.1 / ½ Cycle	30 / 30	30 / 30
Input Over Voltage Protection	TVS	TVS	TVS	None	None

\*HBC-UxxHDY-10 line frequency range limited to 100Hz due to output RC snubber network



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### General Specifications

Description	Specification
Dielectric Strength (Input/Output/Heat Sink)	4,000 Vrms
Ambient Operating Temperature Range	-40 to +80 °C
Weight	0.75 lbs (340 g)
Solid State Relay Housing Material	UL94 V-0 Polymers
Heat Sink Material	Aluminum
Input Terminal Screw Torque Range (in-lb/Nm)	13 - 17 / 1.5 - 2.0
Load Terminal Screw Torque Range (in-lb/Nm)	21 - 26 / 2.4 - 3.0

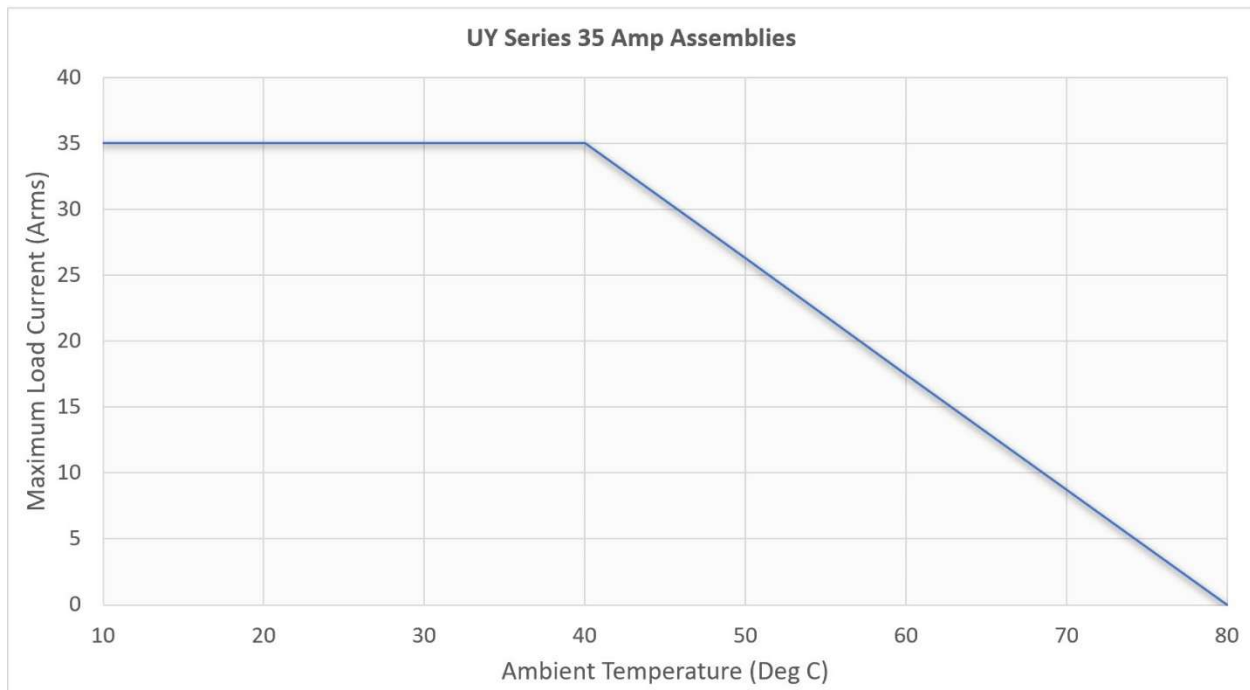
### Available Options (Suffix at end of part number)

-M MOV (metal oxide varistor) overvoltage protection

### Nomenclature Examples:

HBC-U650HDY with MOV = HBC-U650HDY-M

### Derating Curves:



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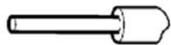
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### Termination Specifications:

#### Input / Output Connections:

##### Input Connections (1 or 2 wires):

###### Solid Wire – No Ferrule



14 AWG – 18 AWG  
0.75 mm<sup>2</sup> – 2.5 mm<sup>2</sup>

###### Stranded – W/Ferrule\*

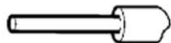


14 AWG – 18 AWG  
0.75 mm<sup>2</sup> – 2.5 mm<sup>2</sup>



##### Output Connections (1 or 2 wires):

###### Solid Wire – No Ferrule



8 AWG – 16 AWG  
1.5 mm<sup>2</sup> – 10.0 mm<sup>2</sup>

###### Stranded – W/Ferrule\*



8 AWG – 16 AWG  
1.5 mm<sup>2</sup> – 10.0 mm<sup>2</sup>



\* Termination with stranded wires without ferrules is not recommended

#### Load Terminal Connection with Ring Terminals:

**Max. Width = 0.5" / 12.6mm**

Suggested narrow tongue compression terminal lugs for applications with large power conductors:\*

- 6 AWG / 16 mm<sup>2</sup> = Burndy YA6CLBOX
- 4 AWG / 25 mm<sup>2</sup> = Burndy YA4CLBOX
- 2 AWG / 35 mm<sup>2</sup> = Burndy YA2CLNT14
- 1 AWG / 50 mm<sup>2</sup> = Burndy YA1CLNT14

\* Correct terminal selection may depend upon multiple application factors. It is the responsibility of the end user to determine whether these or similar terminals are suitable for use in their applications. Please review terminal specifications carefully to ensure suitability for use within the application.



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