

## COOLER CONTROL ELECTRONICS AM7X

- **Temperature stability  $<\pm 20\text{mK}$**
- **Power supply range  $18\text{...}32\text{V}_{\text{DC}}$**
- **High power efficiency ( $>85\%$ )**
- **Output capability up to  $100\text{W}_{\text{AC}}$**
- **High MTTF ( $>50,000\text{h}$ )**
- **Symmetrical sensing of diode 2N2222 with 1mA**
- **Temperature adaptive soft start for fastest cooldown**
- **Adjustable controller characteristics**

The AM7X control electronics, combined with the EMI-filter module, meets the requirements of miniature split linear coolers, with an input power range from  $10\text{W}_{\text{DC}}$  to  $130\text{W}_{\text{DC}}$ .

The product relies on a very compact hybrid design offering excellent thermal transfer. In combination with the optional EMI-filter module, EMI requirements of MIL-STD-461E are assured.

Sophisticated control circuitry enables temperature stability within  $\pm 0.5\text{K}$  covering a wide range of ambient conditions and input voltages.

Coldtip temperature can either be predefined or adjusted between  $30\text{K}$  and  $296\text{K}$  on customer side using offset voltage input.

AM7X also features cooler remote on/off function via an external signal without power disconnection.

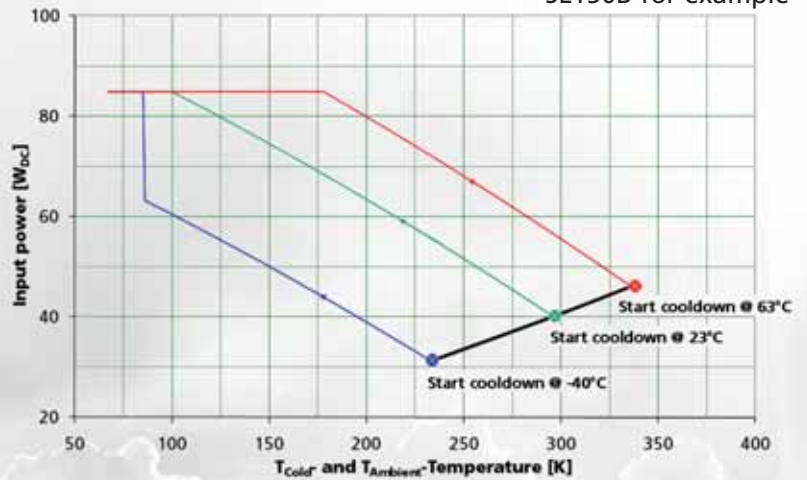


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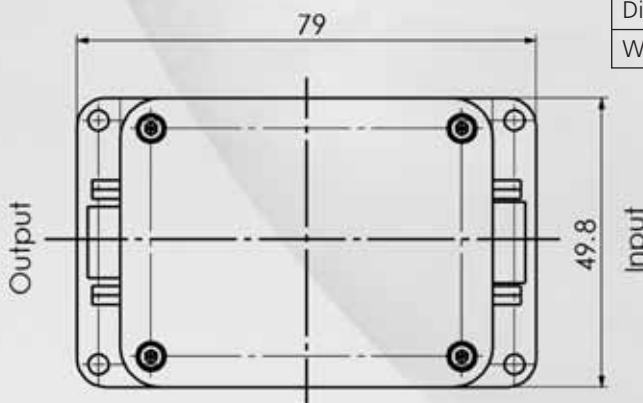
### Applications

- High performance IDCAs and superconductor applications
- All detectors operating at 30 - 296K
- Ambient temperature up to 80°C
- Applications demanding high temperature stability

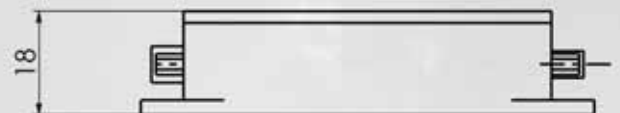
Input power ramp up during cooldown  
SL150B for example



Nominal efficiency	$\eta$	> 85%
Supply voltage	nominal extended	24...32V <sub>dc</sub> 18...32V <sub>dc</sub>
Long term temperature stability (constant ambient conditions)	$\Delta T_{\text{Stable}}$	<±0.02K
Entire control temperature fluctuation (over all ambient temperatures, supply voltage, heat loads)	$\Delta T_{\text{Total}}$	<±0.5K
Ambient temperature range	$\Delta T_{\text{Ambient}}$	-54...+80°C
Coldfinger temperature (adjustable)	$\Delta T_{\text{Cold}}$	30...296K
Temperature sensor		diode 2N2222
Applicable EMI-standard (incl. filter)		MIL-STD-461E
Dimensions		79 x 49.8 x 18mm
Weight		< 100g



Housing dimensions external  
AIM Cooler electronics AM7X



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