Programmable electronic circuit protection

CBM, CBMC, and PTCB

CBM

The CBM is a series of programmable, multichannel electronic circuit breakers for 24 V DC applications that provides quick and easy nominal current adjustment. The UL Listed CBM series offers four- and eight-channel versions. That's up to eight circuit breakers in 41 mm of space, or 5.125 mm per channel! The selected settings are locked electronically to prevent accidental changes. The circuit breaker features local and remote status indication that allows the user to monitor multiple events for both the individual channels and the input voltage. They are also rated for Class I Division 2 hazardous location applications.

CBMC

Like the CBM, the UL Listed CBMC is a series of programmable, multichannel electronic circuit breakers for 24 V DC applications. The CBMC was originally designed with the intent to provide a basic set of features, make the programmability less obvious, and provide a more compact overall package. As the series evolved, the IO-Link version was introduced, which expanded on the features and capabilities provided in the original CBM series. Available in various 4-channel versions, the product can be preconfigured with fixed or adjustable nominal current settings defined by the customer. They are also available with an NEC Class 2 rating that limits the output power to 100 W per channel to eliminate fire and shock hazards.

PTCB

The PTCB series is essentially a single-channel version of the CBMC with one significant addition: they are bridgeable with our CLIPLINE terminal blocks to provide exceptional flexibility. At only 6.2 mm wide, these circuit breakers are the ideal overcurrent protection for your critical loads. They can be individually programmed with an adjustable range from 1 to 8 A, and are also available in fixed values in increments from 1 to 8 A. Like the CBMC, they are also UL Listed and available with an NEC Class 2 rating.

Areas of application

As a relatively new approach to circuit protection in the control cabinet, adoption of electronic circuit breakers in the market is rapidly accelerating. Any applications using 24 V power supplies are great candidates for these products. Specifically, these breakers are used within material handling applications such as conveyor systems, industrial HVAC control systems, applications using fuses, and those in hazardous location areas that require Class I Division 2 or NEC Class 2 approvals.

These breakers can be used to protect a wide variety of loads, including those for wireless radios, Ethernet switches, HMIs/IPCs, controllers, sensors, and DC motors, to mention a few. With a highly defined and reliable tripping characteristic that provides additional information and control of your system, these devices offer significant advantages over traditional overcurrent protection. Electronic circuit breakers don't wear out over time like fuses, they can be controlled and adjusted remotely, and they provide additional information you can't get from mechanical breakers.

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	CBM	CBMC	PTCB
			
Channels	4 or 8	4	1
Ampere rating options	0.5-10 A	1-10 A or 1-4 A	Programmable: 1-3 A, 1-4 A, or 1-8 A Fixed: 1,2,3,4,5,6,7,8 A
Operating voltage	18-30 V DC	18-30 V DC	18-30 V DC
Programming mode	Turn dial	Push and hold	Push and hold
Cascaded startup	100 ms delay	10 ms delay	N/A
Width	41 mm	36 mm	6.2 mm
Terminal connection	Push-in	Push-in	Push-in
Input wire size (AWG)	20…4	24…8	24…14
Ambient temperature (operation)	-25°C to 65°C	-25°C to 60°C	-30°C to 60°C
Active current limitation	typ. 2.0 x IN (0.5 - 1 A) typ. 1.5 x IN (2 - 10 A)	N/A	N/A
Trip status local channel indication	Yes	Yes	Yes
Trip status remote indication	Yes	Yes	Yes
I>80% local status warning	Yes	Yes	Yes
I>80% remote status warning	Yes	No	No
Electronic locking	Yes	Yes	Yes
Under/overvoltage monitoring	Yes	No	No
Remote reset	Yes	Yes	Yes
Available preconfigured or fixed value	No	Yes	Yes
Bridgeable to CLIPLINE terminal blocks	No	No	Yes
IO-Link communication protocol	No	Yes	No
Approvals	UL 508 Listed UL 2367 Recognized w/ Class I, Division 2	UL 508 Listed UL 2367 Recognized UL 1310 (NEC Class 2) options	UL 508 Listed UL 2367 Recognized UL 1310 (NEC Class 2) options

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