BOXTRAB surge protective device

Protection for power, data, and signal in one enclosure

PHOENIX CONTACT
INSPIRING INNOVATIONS

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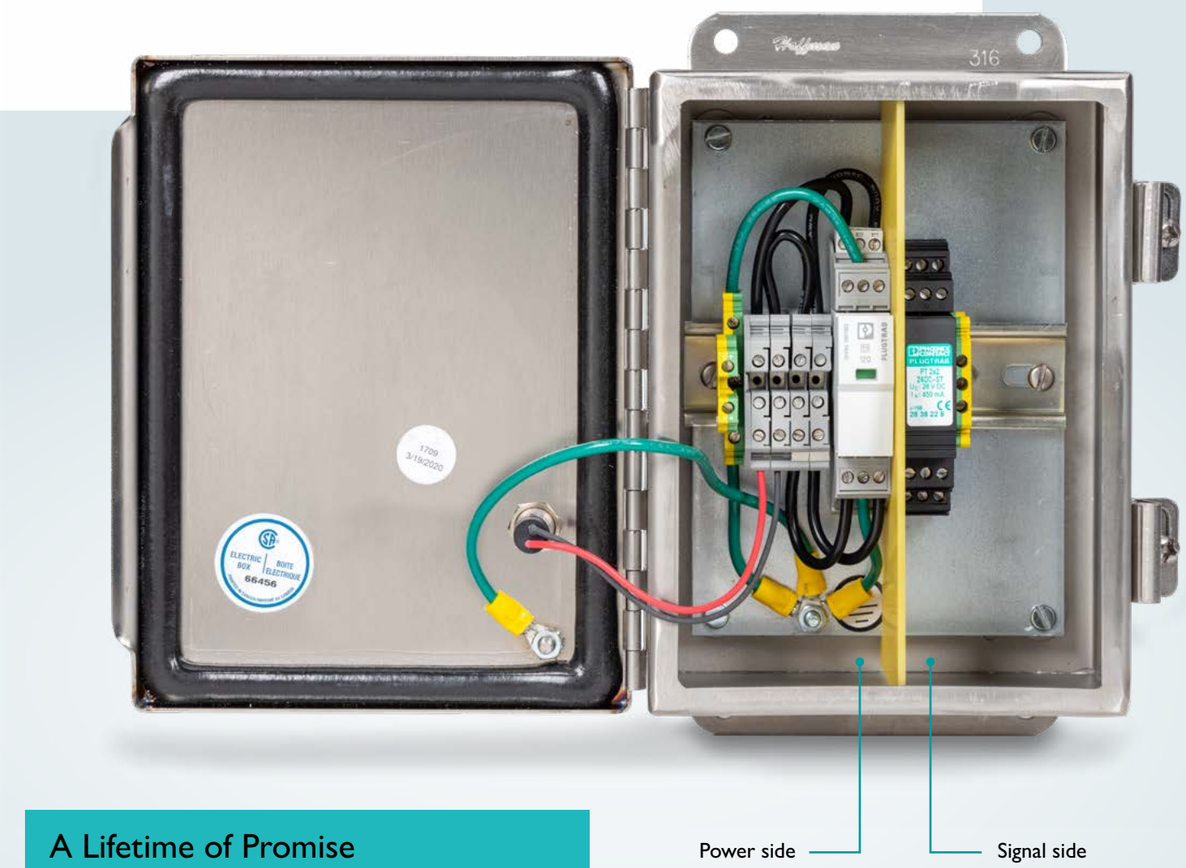
BOXTRAB is a state-of-the-art surge protective device (SPD) that can combine protection for power, data, and signal — all within the same enclosure. Phoenix Contact has offered various BOXTRAB products over the years, and this update delivers an expanded family with the same great protection and groundbreaking features — now configurable and field-upgradeable. Also, for the first time, the family offers high-quality, 316L stainless-steel enclosure versions for industrial processing applications involving chemicals. This provides a higher corrosion resistance, especially against chlorides and chlorinated solutions.



A Lifetime of Promise

Phoenix Contact offers an industry exclusive Limited Lifetime Warranty† on the BOXTRAB series. We stand behind our products like no one else, and we offer replacement SPDs free of charge for the life of the product. Signup required at **www.phoenixcontact.com/LLW**

† Subject to terms and conditions. See **www.phoenixcontact.com/LLW** for more details.

The most unique feature of the BOXTRAB series is the ability to custom-configure and field-upgrade the product to meet your exact needs. With all the different expansion options available, BOXTRAB offers a flexible solution for virtually any combination of power, data, and signal.

BOXTRAB is available in either a polycarbonate or stainless-steel enclosures. Both enclosures are NEMA 4X outdoor-rated. The metal enclosure identified as 4XS, is made of 316L stainless steel. 316L stainless steel is commonly used in industrial processing applications involving chemicals. It provides a higher corrosion resistance, especially against chlorides and chlorinated solutions. 316L stainless steel is a better choice for applications where salt exposure is an issue to avoid a potential chemical reaction with the metal. In addition, the stainless steel versions have an externally mounted LED to provide visual indication of the status of the power SPD inside.

The polycarbonate enclosure, identified as 4XP, has multiple knockouts to allow for easy wiring. The clear UV-resistant polycarbonate lid allows easy viewing of SPD status without the need to open the enclosure.

The BOXTRAB series offers 14 standard configurations. Four are power only, each with a different power PLT-SEC surge protective device. The other three are power and signal combinations. All versions can be customized or upgraded in the field as required for specific applications.

Standard configuration part number chart

Polycarbonate enclosure, clear front cover				
	Protection type	**Part number**	**Type description**	**Description**
	Power	2908680	BXT-4XP-SEC-T3-24-FM	Wall-mounted NEMA 4X polycarbonate enclosure with surge protection for 24 V AC/DC power and a divided compartment ready for additional isolated loop protection
		2908681	BXT-4XP-SEC-T3-60-FM	Wall-mounted NEMA 4X polycarbonate enclosure with surge protection for 60 V AC/DC power and a divided compartment ready for additional isolated loop protection
		2908682	BXT-4XP-SEC-T3-120-FM	Wall-mounted NEMA 4X polycarbonate enclosure with surge protection for 120 V AC/DC power and a divided compartment ready for additional isolated loop protection
		2908683	BXT-4XP-SEC-T3-230-FM	Wall-mounted NEMA 4X polycarbonate enclosure with surge protection for 240 V AC/DC power and a divided compartment ready for additional isolated loop protection
	Power & Signal	2908684	BXT-4XP-SEC-T3-120+1X2-24	Wall-mounted NEMA 4X polycarbonate enclosure with surge protection for 120 V AC/DC power and one DC 24 V loop with 28 V DC MCOV
		2908685	BXT-4XP-SEC-T3-120+2X2-24	Wall-mounted NEMA 4X polycarbonate enclosure with surge protection for 120 V AC/DC power and two DC 24 V loops with 28 V DC MCOV
		2908686	BXT-4XP-SEC-T3-120+2X2-24AC	Wall-mounted NEMA 4X polycarbonate enclosure with surge protection for 120 V AC/DC power and two AC 24 V loops with 28 V AC/40 V DC MCOV

316L stainless-steel enclosure, LED in door				
	Protection type	**Part number**	**Type description**	**Description**
	Power	1191881	BXT-4XS-SEC-T3-24-FM	Wall-mounted NEMA 4X 316L stainless-steel enclosure with surge protection for 24 V AC/DC power and a divided compartment ready for additional isolated loop protection
		1191882	BXT-4XS-SEC-T3-60-FM	Wall-mounted NEMA 4X 316L stainless-steel enclosure with surge protection for 60 V AC/DC power and a divided compartment ready for additional isolated loop protection
		1191884	BXT-4XS-SEC-T3-120-FM	Wall-mounted NEMA 4X 316L stainless-steel enclosure with surge protection for 120 V AC/DC power and a divided compartment ready for additional isolated loop protection
		1191885	BXT-4XS-SEC-T3-230-FM	Wall-mounted NEMA 4X 316L stainless-steel enclosure with surge protection for 240 V AC/DC power and a divided compartment ready for additional isolated loop protection
	Power & Signal	1191886	BXT-4XS-SEC-T3-120+1X2-24	Wall-mounted NEMA 4X 316L stainless-steel enclosure with surge protection for 120 V AC/DC power and one DC 24 V loop with 28 V DC MCOV
		1191887	BXT-4XS-SEC-T3-120+2X2-24	Wall-mounted NEMA 4X 316L stainless-steel enclosure with surge protection for 120 V AC/DC power and two DC 24 V loops with 28 V DC MCOV
		1191888	BXT-4XS-SEC-T3-120+2X2-24AC	Wall-mounted NEMA 4X 316L stainless-steel enclosure with surge protection for 120 V AC/DC power and two AC 24 V loops with 28 V AC/40 V DC MCOV

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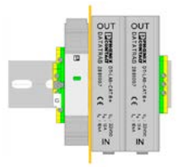
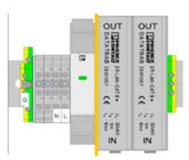
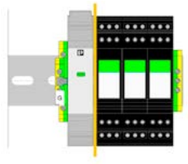
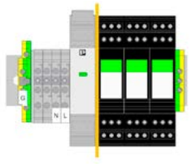
Expansion part number chart

Expansion options				
Part number	Type description		Expansion layout	
D-LAN			Polycarbonate enclosure	Stainless steel enclosure
2818973	D-LAN-A/RJ45-BS			
2858991	D-LAN-CAT.5E			
2859084	D-LAN-CAT.5E-U			
2800723	D-LAN-CAT.5-FP			
2800763	D-LAN-CAT.5-HC			
2881007	DT-LAN-CAT.6+			

Expansion options					
Part number	Type description	Part number	Type description	Expansion layout	
PT plugs		PT bases		Polycarbonate enclosure	Stainless steel enclosure
2856016	PT 1X2- 5DC-ST	2856113 2856126	PT 1X2-BE PT 1X2+F-BE		3 max additional PT
2856029	PT 1X2-12DC-ST				
2856058	PT 1X2-24AC-ST				
2856032	PT 1X2-24DC-ST				
2858043	PT 3-HF-12DC-ST				
2858030	PT 3-PB-ST				
2856061	PT 2X1- 5DC-ST	2856139 2856142	PT 2X1-BE PT 2X1+F-BE		
2856074	PT 2X1-12DC-ST				
2856100	PT 2X1-24AC-ST				
2856087	PT 2X1-24DC-ST				
2839172	PT 2X1VA- 60AC-ST	2839282	PT BE-FM		
2839185	PT 2X1VA-120AC-ST				
2839198	PT 2X1VA-230AC-ST				
2838241	PT 2X2- 5DC-ST	2839208 2839224	PT 2X2-BE PT 2X2+F-BE		
2838254	PT 2X2-12DC-ST				
2838283	PT 2X2-24AC-ST				
2838228	PT 2X2-24DC-ST				
2838762	PT 5-HF- 5 DC-ST				
2838775	PT 5-HF-12 DC-ST				
2839567	PT 2X2-HF- 5 DC-ST	2839224	PT 2X2+F-BE		
2839570	PT 2X2-HF-12 DC-ST				
2839729	PT 2X2-HF-24 DC-ST				
2838225	PT 2XEX(I)-24DC-ST	2839279	PT 2XEX(I)-BE		
2839211	PT 4- 5DC-ST	2839402 2839415	PT 4-BE PT 4+F-BE		
2839237	PT 4-12DC-ST				
2839240	PT 4-24DC-ST				
2838306	PT 4X1- 5DC-ST	2839363 2839376	PT 4X1-BE PT 4X1+F-BE		
2838319	PT 4X1-12DC-ST				
2838351	PT 4X1-24AC-ST				
2838322	PT 4X1-24DC-ST				





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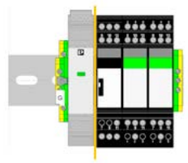
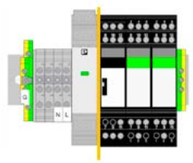
Expansion part number chart

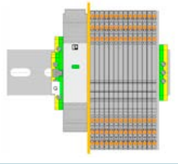
Expansion options				
Part number	Type description	Part number	Type description	Expansion layout
PT-IQ		PT-IQ		Polycarbonate enclosure / Stainless steel enclosure
2801256	PT-IQ-1X2+F-24DC-PT	2801289	PT-IQ-3-HF+F-12DC-PT	
2800977	PT-IQ-1X2+F-24DC-UT	2800995	PT-IQ-3-HF+F-12DC-UT	
2801255	PT-IQ-1X2-24DC-PT	2801288	PT-IQ-3-HF-12DC-PT	
2800976	PT-IQ-1X2-24DC-UT	2800786	PT-IQ-3-HF-12DC-UT	
2801257	PT-IQ-1X2-48DC-PT	2801287	PT-IQ-3-PB+F-PT	
2800978	PT-IQ-1X2-48DC-UT	2800994	PT-IQ-3-PB+F-UT	
2801512	PT-IQ-1X2-EX-24DC-UT	2801286	PT-IQ-3-PB-PT	
2801248	PT-IQ-2X1+F-24DC-PT	2800785	PT-IQ-3-PB-UT	
2800788	PT-IQ-2X1+F-24DC-UT	2801272	PT-IQ-4X1+F-24DC-PT	
2801250	PT-IQ-2X1+F-48DC-PT	2800983	PT-IQ-4X1+F-24DC-UT	
2800790	PT-IQ-2X1+F-48DC-UT	2801274	PT-IQ-4X1+F-48DC-PT	
2801247	PT-IQ-2X1-24DC-PT	2801220	PT-IQ-4X1+F-48DC-UT	
2800787	PT-IQ-2X1-24DC-UT	2801271	PT-IQ-4X1-24DC-PT	
2801262	PT-IQ-2X2+F-12DC-PT	2800982	PT-IQ-4X1-24DC-UT	
2800985	PT-IQ-2X2+F-12DC-UT	2801219	PT-IQ-4X1-48DC-UT	
2801264	PT-IQ-2X2+F-24DC-PT	2801295	PT-IQ-5-HF+F-12DC-PT	
2800981	PT-IQ-2X2+F-24DC-UT	2800801	PT-IQ-5-HF+F-12DC-UT	
2801266	PT-IQ-2X2+F-48DC-PT	2801292	PT-IQ-5-HF+F-5DC-PT	
2800987	PT-IQ-2X2+F-48DC-UT	2800798	PT-IQ-5-HF+F-5DC-UT	
2801260	PT-IQ-2X2+F-5DC-PT	2801293	PT-IQ-5-HF-12DC-PT	
2801263	PT-IQ-2X2-24DC-PT	2800799	PT-IQ-5-HF-12DC-UT	
2800980	PT-IQ-2X2-24DC-UT	2801291	PT-IQ-5-HF-5DC-PT	
2800986	PT-IQ-2X2-48DC-UT	2800797	PT-IQ-5-HF-5DC-UT	
2801259	PT-IQ-2X2-5DC-PT	2801296	PT-IQ-PTB-PT*	
2801513	PT-IQ-2X2-EX-24DC-UT	2800768	PT-IQ-PTB-UT*	

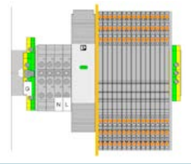




* If you use PT-IQ to expand your configuration, you must use one of these controller part numbers

Part number	Type description		Expansion layout	
TTC-3			Polycarbonate enclosure	Stainless steel enclosure
No indication			14 max additional TTC-3	
2907325	TTC-3-1X2-24DC-PT			
2907326	TTC-3-2X1-24DC-PT			
2908843	TTC-3-LCP (end cover)			





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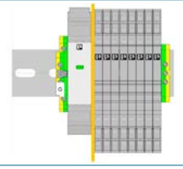
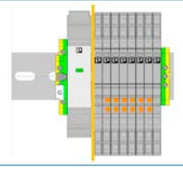
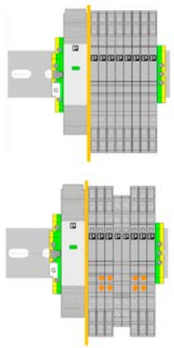
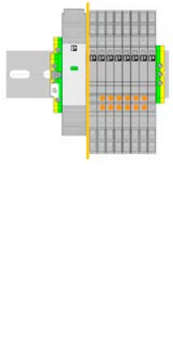
Expansion part number chart

Expansion options					
Part number	Type description	Part number	Type description	Expansion layout	
TTC-6		TTC-6		Polycarbonate enclosure	Stainless steel enclosure
No indication				8 max additional TTC-6	
2906804	TTC-6-1X2-24DC-PT	2906807	TTC-6-2XTVSD-12DC-PT		
2906798	TTC-6-1X2-24DC-UT	2906808	TTC-6-2XTVSD-24DC-PT		
2906806	TTC-6-2-24DC-PT	1065316	TTC-6-3-HF-12DC-PT		
2906800	TTC-6-2-24DC-UT	1109712	TTC-6-3-HF-F-12DC-PT		
2906805	TTC-6-2X1-24DC-PT	2908729	TTC-6-LCP (end cover)		
2906799	TTC-6-2X1-24DC-UT				
With indication				Models with "-I" are compatible with FMRS indication modules, 8 max additional TT-6…I, 6 max additional if using FMRS	
2907811	TTC-6-FMRS-PT	2906845	TTC-6-GDT-D-24AC-UT-I		
2907810	TTC-6-FMRS-UT	2906863	TTC-6-GDT-D-60AC-PT-I		
2906772	TTC-6-1X2-F-M-24DC-PT-I	2906846	TTC-6-GDT-D-60AC-UT-I		
2906764	TTC-6-1X2-F-M-24DC-UT-I	2906858	TTC-6-MOV-C-120AC-PT-I		
2906726	TTC-6-1X2-M-24DC-PT-I	2906840	TTC-6-MOV-C-120AC-UT-I		
2906713	TTC-6-1X2-M-24DC-UT-I	2906854	TTC-6-MOV-C-24DC-PT-I		
2906820	TTC-6-1X2-M-EX-24DC-UT-I	2906837	TTC-6-MOV-C-24DC-UT-I		
2908439	TTC-6-2-HC-24DC-PT-I	2906855	TTC-6-MOV-C-48DC-PT-I		
2908438	TTC-6-2-HC-24DC-UT-I	2906838	TTC-6-MOV-C-48DC-UT-I		
2906731	TTC-6-2-HC-M-24DC-PT-I	2906857	TTC-6-MOV-C-60DC-PT-I		
2906719	TTC-6-2-HC-M-24DC-UT-I	2906839	TTC-6-MOV-C-60DC-UT-I		
2906776	TTC-6-2X1-F-M-24DC-PT-I	1109689	TTC-6-MOV-D-120AC-PT-I		
2906767	TTC-6-2X1-F-M-24DC-UT-I	1109673	TTC-6-MOV-D-120AC-UT-I		
2906729	TTC-6-2X1-M-24DC-PT-I	2906859	TTC-6-MOV-D-24DC-PT-I		
2906716	TTC-6-2X1-M-24DC-UT-I	2906841	TTC-6-MOV-D-24DC-UT-I		
2906821	TTC-6-2X1-M-EX-24DC-UT-I	2906847	TTC-6-TVSD-C-12DC-PT-I		
2906778	TTC-6-3-HF-F-M-12DC-PT-I	2906829	TTC-6-TVSD-C-12DC-UT-I		
2906769	TTC-6-3-HF-F-M-12DC-UT-I	2906848	TTC-6-TVSD-C-24DC-PT-I		
2906779	TTC-6-3-HF-F-M-24DC-PT-I	2906831	TTC-6-TVSD-C-24DC-UT-I		
2906770	TTC-6-3-HF-F-M-24DC-UT-I	2906849	TTC-6-TVSD-C-48DC-PT-I		
2906822	TTC-6-3-HF-F-M-EX-12DC-UT-I	2906832	TTC-6-TVSD-C-48DC-UT-I		
2906823	TTC-6-3-HF-F-M-EX-24DC-UT-I	2906850	TTC-6-TVSD-C-60DC-PT-I		
2906732	TTC-6-3-HF-M-12DC-PT-I	2906833	TTC-6-TVSD-C-60DC-UT-I		
2906721	TTC-6-3-HF-M-12DC-UT-I	2906851	TTC-6-TVSD-D-24DC-PT-I		
2906861	TTC-6-GDT-C-110AC-PT-I	2906834	TTC-6-TVSD-D-24DC-UT-I		
2906844	TTC-6-GDT-C-110AC-UT-I	2906852	TTC-6-TVSD-D-48DC-PT-I		
2906860	TTC-6-GDT-C-24AC-PT-I	2906835	TTC-6-TVSD-D-48DC-UT-I		
2906842	TTC-6-GDT-C-24AC-UT-I	2906853	TTC-6-TVSD-D-60DC-PT-I		
2906862	TTC-6-GDT-D-24AC-PT-I	2906836	TTC-6-TVSD-D-60DC-UT-I		

TT-ST		
2858946	TT-ST-M-SFP-24AC	
2858894	TT-D-STTCO-BK (end cover)	

Common applications

Below are several common devices the BOXTRAB series of products are utilized to protect. These devices are often critical for efficient and proper operation of the systems they monitor and control. Protecting these devices from transient activity helps ensure they remain up and running.

Level

The status of the sensor can be reported to aid in troubleshooting faulty measurements. A level transmitter may also support high and low alarm set points.

Temperature

In addition to the process temperature, ambient temperature can be reported along with cold junction temperatures. Further, the sensor breakage can be detected and reported to aid in troubleshooting.

Pressure

Differential pressure transmitters have variables for differential pressure, cell temperature, and static pressure that can be used for calculating flow. Sensor breakage and status can also be detected.

Flow

Coriolis mass-flow meters can report process media density. A DP-based mass-flow meter can report absolute pressure and temperature in addition to the main process measurement.

pH

In addition to the pH measurement, a HART pH device can provide temperature measurement, as well as other indicators of the sensor health and possible failure.

Valve positioner

The actual valve position feedback can be obtained from a digital positioner. Comparing this value to the target position can indicate a valve that is sticking.

Ongoing communication with customers and partners worldwide

Phoenix Contact is a global market leader based in Germany. We are known for our future-oriented components, systems, and solutions in the fields of electrical engineering, electronics, and automation. With a global network reaching across more than 100 countries with over 17,400 employees, we stay in close contact with our customers, something we believe is essential for success.

Our wide variety of innovative products makes it easy for our customers to find future-oriented solutions for multiple applications and industries. We focus predominantly on the fields of energy, infrastructure, process, and factory automation.

You can find your local partner at

www.phoenixcontact.com

INSPIRING INNOVATIONS