



Bourns Releases Power Line Communication (PLC) Transformers

Model PFB Series

Riverside, California – **June 21, 2022** – Bourns Custom Magnetics Product Line is introducing the new [Model PFB Power Line Communication Transformer Series](#). Bourns offers two part numbers for the PFB series – PFBR45-ST13150S as a standard PLC transformer and PFBR45-SP13150S as an extended transformer. The table below identifies key differences between the two part numbers.

Bourns Part Number	Pri. Inductance @100 kHz / 1V		Leakage Inductance @100 kHz / 1V (All Sec. Pins Shorted)		Turns ratio		DCR Max.		Interwinding Capacitance @50 kHz		Hi-Pot 1 Sec / 1 mA	
	(1-4)	1 mH, +35 %, -30 %	(1-4)	1.5 μ H Typ. (2 μ H Max.)	(1-4):(7-5)	2:1 \pm 3 %	(1-4)	215 m Ω	(1,4-5,6,7,8)	30 pF Max.	(1-8) w/ (6,7) shorted	2000 Vac
PFBR45-ST13150S	(1-4)	1 mH, +35 %, -30 %	(1-4)	1.5 μ H Typ. (2 μ H Max.)	(1-4):(8-6)	2:1 \pm 3 %	(8-6)	105 m Ω				
					(1-4):(8-6)	2:1 \pm 3 %	(7-5)	115 m Ω				
PFBR45-SP13150S ¹	(9-6)	1.15 mH, \pm 30 %	(9-6)	1.3 μ H Max.	(9-6):(1-4)	2:1 \pm 3 %	(9-6)	500 m Ω	(9,6-1,2,4,5)	30 pF Max.	(9-1) w/ (2,4) shorted	4500 Vac
					(9-6):(2-5)	2:1 \pm 3 %	(1-5) w/ (2,4) shorted	350 m Ω			(1-5)	625 Vac

¹ Volt-time: 11 (V- μ Sec)

In today's world, smart cities and homes need intelligent control technology and the best energy-saving solutions. These needs have led to the rapid increase of telecommunication systems that are efficient, reliable and cost-effective, making PLC technology a desirable option.

The primary inductance of the PFB series is 1 mH for the standard version and 1.15 mH for the extended version. The leakage inductance for both versions is 1.5 μ H typ. (2 μ H max.) and 1.3 μ H max., respectively. The Model PFBR45-ST13150S is designed for functional insulation for a working voltage of 400 VDC, while the

extended version, Model PFBR45-SP13150S, is designed for reinforced insulation with a working voltage of 400 VDC. The interwinding capacitance of both parts is up to 30 pF and the operating temperature range of the Model PFB series (including self-temperature rise) is from -40 °C to +125 °C.

The Model PFB Series is designed for the ST Micro 8500 PLC System-on-Chip (SoC) and has excellent transmission characteristics. This series is ideal for diverse applications such as smart grid, automatic meter reading (e.g., energy, gas and water meters), PC home network systems, street lighting systems, home automation systems and CCTV cameras. Both models are RoHS compliant*.

Samples and production quantities are now available.

For additional details on Bourns® transformers, visit the Bourns website at www.bourns.com/products/magnetic-products/transformers-power.

Features

- Excellent transmission characteristics
- Compact SMT housing
- Designed for functional insulation with a working voltage of 400 VDC (PFBR45-ST) or reinforced insulation with a working voltage of 400 VDC (PFBR45-SP)
- Designed for ST Micro 8500 PLC System-on-Chip (SoC)
- Complies with EN 62368 and EN 61885
- RoHS compliant*

Applications

- Smart grids
- Automatic meter reading – energy, gas and water
- PC home network systems
- Street lighting systems
- Home automation systems
- CCTV cameras

* RoHS Directive 2015/863, Mar 31, 2015 and Annex.