DATA SHEET – Power Protection – Surge Protectors

Subject to change without notice

MODEL:- TLP-Pxxx-3P-DRI+MB

Transtech Lightning Protector Three Phase, 3 Mode with Dual Colour LED's, Modbus Class I / CAT C or less

AUSTRALIAN MADE

GENERAL DESCRIPTION

The TLP-Pxxx-3P-DRI+MB is a "new series" lightning and transient protector which provides protection for electrical / electronic equipment connected to three phase distribution systems.

The TLP-Pxxx-3P-DRI+MB is a <u>true</u> 3 mode parallel connected protection device offering 4 levels of kA rating in all 3 modes and offers Dual Colour LEDs and a Remote Indicator output to drive a Transtech panel mounted remote monitor module. Also it is equipped with a Modbus output to directly interface to a BMS).

For mains supply of greater than 100A adequate HRC fuse or MCB protection must be installed prior to the TLP-xxx-3P

FEATURES

- Low "let thru" voltage
- Designed and manufactured to ISO 9001
- Internally protected – automatic reset
- Local status indication by dual colour LED's
- Remote status indication relay
- Remote Indicator output
- **Modbus Output**
- High Energy designed pcb's
- CE Marking / C-tick N 2909
- Full 3 mode protection
- DIN 43880 compliant
- Designed to pass IEC 61643-1:2005 and AS/NZS 1768:2003
- Compliant with IEC 62305-4:2010

NOTE: This device must be installed by a Qualified Electrician.

TECHNICAL DATA

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Normal Working voltage	see table 2 below
Maximum working voltage	476VAC rms (phase to phase)
Working Freq.	40 - 60Hz
Peak let thru volts Up	see table 2 below
Maximum mains current	Unlimited (parallel connected)
	Must be fuse protected over 100A
Mains	
Imax	see table 2 below
Iimp	see table 2 below
Response time	Less than 25nS
Relay Contacts	SPCO (1 amp @240Vac)
Surge Reset	Automatic

SPECIAL FEATURES

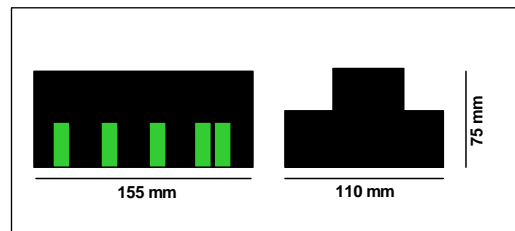|	
Relay Output	Phase loss
LED's (3)	L1, L2, L3, RED = healthy / AMBER = replace)
DIR	Dual LED's Remote Indicator& Relay
MB	Modbus Output for BMS

GENERAL SPECIFICATION

Operating Temp	-40 to +70 Deg C
Terminals	16mm² solid max / 10mm² flex max
Remote Terminals	Plug in 2.5mm²
Indicators	Dual Colour LED's
Housing Material	Mild Steel (Powder coated)
Dimensions	155 (W) x 105 (D) x 85 (H)
Weight	900 grams
Mounting	DIN 43880 Standard DIN Rail
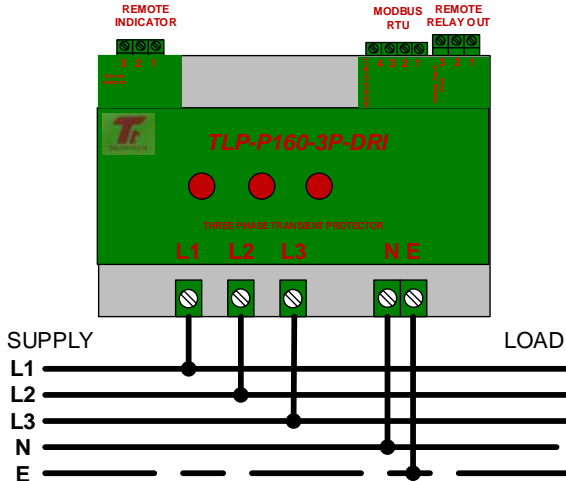
Model	Working Voltage	Frequency.	Imax	Iimp	In	Let Thru V	Response Time
	Phase-Phase		1 Pulse	10/350us	15x8/20us	@3kA	
TLP-P40-3P-DRI+MB	415V	40-60HZ	40kA	-	16kA	> 810	25uS
TLP-P80-3P-DRI+MB	415V	40-60HZ	80kA	5.0kA	32kA	> 810	25uS
TLP-P120-3P-DRI+MB	415V	40-60HZ	120kA	7.5kA	48kA	> 810	25nS
TLP-P160-3P-DRI+MB	415V	40-60HZ	160kA	10.0kA	64kA	> 810	25nS
TLP-P200-3P-DRI+MB	415V	40-60HZ	200kA	12.5kA	80kA	> 810	25nS
TLP-P240-3P-DRI+MB	415V	40-60HZ	240kA	15.0kA	96kA	> 810	25nS
TABLE No 2 (Modbus Out)							

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The MODBUS interface board can take up to 8 inputs. These inputs are available on the bus using MODBUS function codes 1 (Read Coils) and 2 (Read Discrete Inputs). Both function codes return the same information. Each input reads as '0' if there is a fault or '1' otherwise. Under normal conditions, all inputs will read as '1'. The input mapping is as follows:

Input	Description
0	Phase A Present
1	Phase B Present
2	Phase C Present
3	Phase A MOV/Fuse OK
4	Phase B MOV/Fuse OK
5	Phase C MOV/Fuse OK
6	Neutral-Earth Fuse OK†
7	Neutral-Earth Resistance OK†
† = Only available on units fitted with a NEMON module. Always reads as '0' on non-NEMON units.	

The current device setup can be retrieved using MODBUS function codes 3 (Read Holding Register) and 4 (Read Input Register). Both codes will retrieve the same information. These registers can be set using MODBUS function codes 6 (Write Single Register) or 16 (Write Multiple Registers). The register details are as follows:

Register	Description	Default	Valid Values†
0	Device Address	247	1 to 247 inclusive
1‡	Serial Number (Low Word)	< value is uniquely set at factory >	
2‡	Serial Number (High Word)		
3	Baud Rate (divided by 100, e.g. 192 = 19,200 baud)	192	12, 24, 48, 96, 144, 192, 288, 384, 576, 1152
4	Serial Parity	1	0 = None, 1 = Even, 2 = Odd
5	Serial Bus Mode	0	0 = RTU, 1 = ASCII
6	ASCII Mode Timeout (in units of 10ms)	100	50 to 65535 = 0.5 to 65.535 seconds
† = Any value not within the valid range is ignored and the register contents are not modified. No error is returned. ‡ = Register is read-only and cannot be modified. Any writes to these registers are ignored. No error is returned.			

Writing to registers 3, 4 or 5 will cause the serial communications interface to be restarted and all diagnostics counters to be cleared.

The device will also respond to MODBUS function code 43, sub code 14 (Read Device Identification). This will return standard information such as vendor name, product code and revision as per the MODBUS standard

The device will also respond to MODBUS function code 8 (Diagnostics). All sub-functions are supported, although the device never returns NAK or BUSY responses, so sub-functions 16 and 17 always return 0.

All other MODBUS function codes are unsupported and will cause an error reply to be generated.

The default setup will be a device ID of 247 (the maximum ID allowed, and unlikely to already be on a bus), with a baud rate of 19200 and EVEN parity (both as specified by the MODBUS standard). These will be able to be configured here during testing or will be able to be configured by the customer if they have an appropriate computer and RS485 interface to use.

Some PLCs may allow configuration from their HMI if they support arbitrary setting of register values in MODBUS slaves.

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