

ProTHERMIC™

PROTON
PRODUCTS

PH Series Wire Preheater

INTRODUCTION

The ProTHERMIC™ PH Series are a comprehensive range of High Frequency induction Preheaters featuring the latest advanced High Frequency solid state technology. Wire preheating is an essential operation to achieve elimination of wire moisture, improve stripping characteristics, and avoid pin hole and bare patch faults.

The shorting pulley rim is manufactured from a special copper alloy that has high electrical conductivity and good wear resistance. The insulating pulley is manufactured from resin bonded fabric which has good wear resistance and low thermal conductivity to minimise wire-to-pulley heat loss.

The pulleys are mounted on low friction, double row ball bearings to minimise the drag force (tension increase) on the wire as it passes through the preheater. Both pulleys are precision machined to ensure that uniform tension is applied to the wire, thus reducing SRL problems in data and telecommunications cable applications.

The preheater is powered from a 3-phase mains input, which is converted to a high-frequency supply by a specially designed inverter, the output of which is automatically adjusted to deliver the necessary power to maintain the required "Preset Temperature" regardless of wire size or production speed.

The preheater is fully protected against mains supply phase loss or brownouts.

PH300 Series

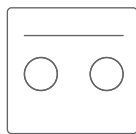


∴ Data Sheet ∴

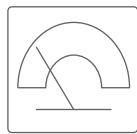
FEATURES



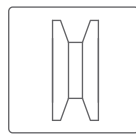
LINE SPEED
DISPLAY



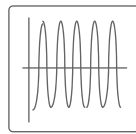
RELAYS



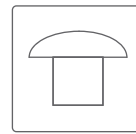
ANALOGUE I/O



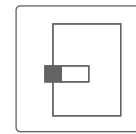
PRECISION LONG



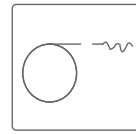
OPTIMIZED



EMERGENCY



DOOR INTERLOCK



WIRE BREAK

TECHNOLOGY

Advanced Frequency Control

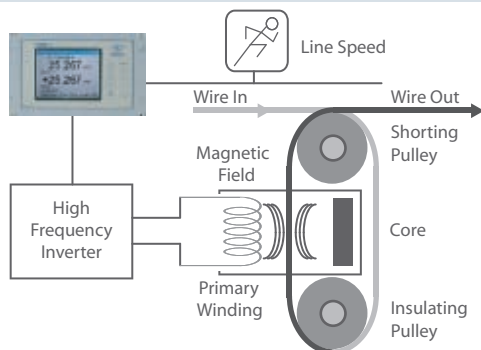
V = Heating Loop Voltage, required to dissipate the power required

P = Power in Watts, required to heat the wire

R = Resistance of Wire or Conductor within the heating loop

$$V = \sqrt{P \times R} \quad \text{Where } P \times R = \Delta T \times \text{Speed} \times K$$









$$V = \sqrt{\Delta T \cdot \text{Speed} \cdot K}$$



BENEFITS

- High Frequency Heating
- Advanced Frequency Control Technology
- Optimum Heating Cycle
- Consistent Conductor Temperature
- Precision Pulley and Bearing Assembly
- Hardened Pulley Surface for Long Life
- Wire Break Detection
- Line Speed, Voltage and Current Display
- Compact Design
- Digital Communication
- Door Interlocking and Emergency Stop

SPECIFICATIONS

| Model | PH1% Series | PH1+0 Series | PH300 Series | PH3+0 Series | PH450 Series | PH600 Series | | |
|--|---|---|---|---|---|---|---|---|
| Pulley root diameter | 100mm (3.94") | 155mm (6.10") | 294mm (11.58") | 325mm (6.10") | 450mm (17.72") | 593mm (23.35") | | |
| Solid Wire diameter Maximum | 1mm | 1.7mm | 3mm | 6mm | 4.5mm | 6mm | | |
| Solid Wire diameter Minimum | 0.1mm | 0.3mm | 0.5mm | 0.5mm | 1mm | 2.5mm | | |
| Stranded wire diameter | 1mm | 1.95mm | 3.2mm | 6.2mm | 5.64mm | 6.8mm | | |
| Stranded wire cross-sectional area | 0.8mm ² | 3mm ² | 8mm ² | 30mm ² | 25mm ² | 36mm ² | | |
| Wire preheat temperature | 200°C | 200°C | 200°C | 200°C | 200°C | 200°C | | |
| Induction frequency | 2500Hz | 1469Hz | 1469Hz | 1469Hz | 1469Hz | 1469Hz | | |
| Continuous wire tension | 470N | 470N | 530N | 530N | 2005N | 5231N | | |
| Wire direction | Bidirectional | Bidirectional | Bidirectional | Bidirectional | Left-to-right or right-to-left | Bidirectional (left-to-right or right-to-left) | | |
| Wire material | Copper/Aluminium/Copper-clad/Special | | | | | | | |
| Wire line height | 980(minimum) / 1000(typical) / 1020mm(maximum) | | | | | | | |
| Operating temperature | +5 ~ +45°C (41°F - 113°F) | | | | | | | |
| Ingress protection (wire entry/exit areas and pulley compartment only) | IP53 | | | | | | | |
| Maximum Power supply frequency | 65Hz | 65Hz | 65Hz | | 65Hz | 65Hz | | |
| Minimum Power supply frequency | 47Hz | 47Hz | 47Hz | | 47Hz | 47Hz | | |
| Weight | TBA | 290 kg (639lb) | 360 kg (794lb) | | 500 kg (1102lb) | 1300kg (2865lb) | | |
| Standard Interfaces | | | | | | | | |
| 4 x Logic inputs | Solenoid door / Emergency stop / Start Preheating / Stop Preheating (Max. input voltage +24V) | | | | | | | |
| 4 x Relay outputs | Fault / State / Auxiliary / Emergency stop (Isolated Contact, max. rating : 50Vdc/30Vac/0.5A) | | | | | | | |
| 4 x Analogue outputs | User programmable | | | | | | | |
| Remote Temperature set input | Temperature Control input | | 0 to +10V, user scalable | | | | | |
| Control(FB) Temperature input | Temperature feedback input | | | | | | | |
| Communications Interfaces | CAN-bus; I-Bus; RS232, RS422/RS485, Ethernet | | | | | | | |
| Optional Interfaces |  |  |  |  |  |  |  |  |
| Communications Interfaces | ProfiBus; ProfiNet, DeviceNet, Ethernet IP, WiFi | | | | | | | |

CONTROLLER FUNCTIONS

- Start & Stop Preheating
- Temperature Preset
- Multiple Languages
- Power Range Notification
- Line Speed, Current, Voltage Display
- Wire Break Indication
- Active Current Limit
- Product Menu
- Set Material Type
- Pulley Loss Power Compensation

GENERAL OPTIONS

- Twin Wire Applications
- Low Loss Pulley Set
- Range Switch
- Height Adjustable Plinth
- High Temperature Pulley Set



CONTACT

USA

Proton Products Inc.
9272 Jeronimo Rd #110
Irvine, CA 92618.
United States
Email : Sales@protonproducts.us

EUROPE

Proton Products Europe N.V.
TerspeltBusinessPark
Koeweideblock 2/C13
B-1785 Merchterm
BELGIUM.
Email : sales@protonproducts.eu

ASIA

Proton Products Chengdu Ltd
Tianfu Software Park G3-401
No. 1800 Central YiZhou Ave.
Chengdu, SiChuan 610041.
CHINA.
Email : sales@protonproducts.cn

Thailand Agent

Diamond International Co., Ltd.
555/46 Moo 4, Mahasawat,
Bangkrui, Nonthaburi 11130,
THAILAND.
Mr. Kamnat Chyanimit
Tel : +66 2038 7144
Mobile : +66 8 9936 6895
Email : sales@diamond-inter.com