



Precise, Field-Proven

Wire Preheaters

For Superior Performance During the Extrusion Process

The Preheater Advantage:

- Improve performance and quality—ensures faster extrusion speed and desired adhesion, elongation, and foam rate; minimizes micro-cracks in extruded material
- Maximize production uptime—highly reliable Preheater components ensure that power losses are minimized and that all input power is used to heat the wire with a 94% efficiency rate
- Protect personnel and equipment—proven safety features include wire break detection, current overload sensors, and a wire path that is concealed behind an electrically locked door
- Get maximum operational flexibility—external temperature controller interface allows compensation for low-speed applications and varying input temperatures

Preheating Delivers High-Quality Results and True Savings

Staying ahead of the competition means turning out higher-quality products in less time. An important ingredient to this success is having a Beta LaserMike Preheating system before the extruder to deliver reliable, uniform in-process wire preheating. Beta LaserMike Preheaters optimize the physical characteristics of your insulation material and make sure the insulation properly bonds to the conductor without gaps or cracks. This means you get a consistent, high-quality product from production run to production run. And, with a Beta LaserMike Preheater installed on your extrusion line, you will effectively:

- Reduce start-up time
- Decrease scrap
- Increase productivity

Beta LaserMike offers a range of Preheaters to meet your production needs. Our Preheaters have been in service for over 30 years and are used by the world's leading wire manufacturers. And, these organizations rely on our Preheaters for the highest level of performance and dependability day in and day out.

BETA LaserMike
Measured by Commitment

In-Process Wire Preheating

Higher Frequency, Optimum Performance

When your wire is preheated for only fractions of a second by a low-frequency (50/60 Hz) heat cycle, heat is applied unevenly to the wire, resulting in hot and cold spots in the insulation material. Beta LaserMike Preheaters solve this problem by using high-frequency preheating that applies the optimum heat cycles to the wire as it passes through the Preheater. This ensures a linear and consistent heating along the length of the wire, regardless of speed, to meet your unique temperature requirements. Beta LaserMike Preheater components are also carefully designed to ensure that power losses are minimized and that all the input power is used to heat the wire.

Designed for Safety and Lowest Maintenance

Longevity, safety, and durability are also built in to all Beta LaserMike Preheaters. For example, wire break detection and current overload sensors are included in every unit, and we use an incremental encoder for speed monitoring, so there are no brushes to wear out. The Preheater's wire path is concealed behind an electrically locked door for greater safety. The facility to fit an optional external temperature controller is provided on all models, allowing for compensation for low-speed applications and varying input temperatures.



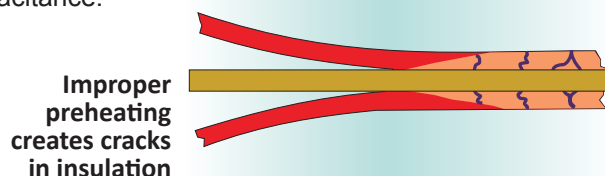
3 Models to Choose From

- **MCS120L0817:** Compact, economical model ideal for wire sizes 0.28 - 1.4 mm (0.01 - 0.06 in.).
- **MCS280L1640:** High-speed, powered preheater for wire sizes 0.45 - 2.8 mm (0.02 - 0.12 in.).
- **MCS190L1640:** High-speed, precision ceramic pulley preheater for wire sizes 0.37 - 1.4 mm (0.008 - 0.055 in.). Ideal for Data, Telecom, and Coax cables.

Why Preheating is Important

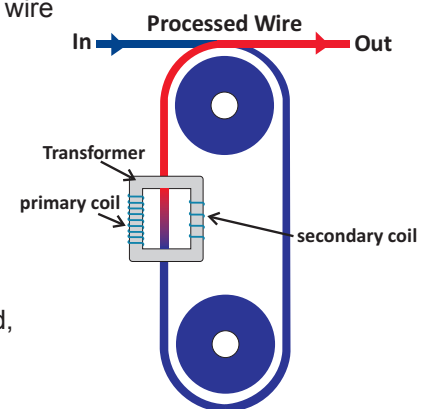
The all-too-important properties of cable insulation can be dramatically affected by the temperature of the metal core as it is being formed. When a hot plastic is extruded onto a cold core, the plastic is quickly chilled, and a condition called Thermal Shock can occur.

This condition reveals itself in the formation of cracks in the insulation. These cracks, in turn reduce the electrical and mechanical performance of the cable. Conversely, an over-heated wire can reduce the ability of the insulation to flow correctly around the wire and adhere to its surface. Both of these problems can influence line tension as the wire is pulled through the extruder, and the electrical performance of the product, in particular, the capacitance.



How it Works

The wire being processed passes around two pulleys and through a transformer. As the wire passes through the transformer, it shorts the secondary coil. This energizes the primary coil with a voltage that causes a large secondary current to flow. These high currents in the wire increases the wire temperature. High frequency heat cycles ensure a linear, consistent wire preheating. The applied voltage is calculated from the required temperature rise and the line speed, together with a calibration constant.



Wire passing through Preheater

Optimum Temperature Control

All Beta LaserMike Preheaters are equipped with a **C580** temperature controller.



C580 Controller

Operator displays and controls

- Start and stop buttons
- Display function button
- Set temperature increment and decrement buttons
- Diagnostic lamps for start, stop, fault, run, and remote control
- Digital display for set temperature and loop voltage

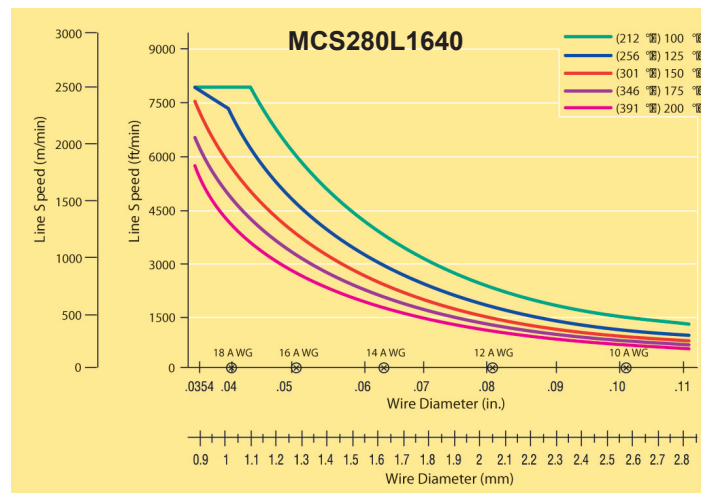
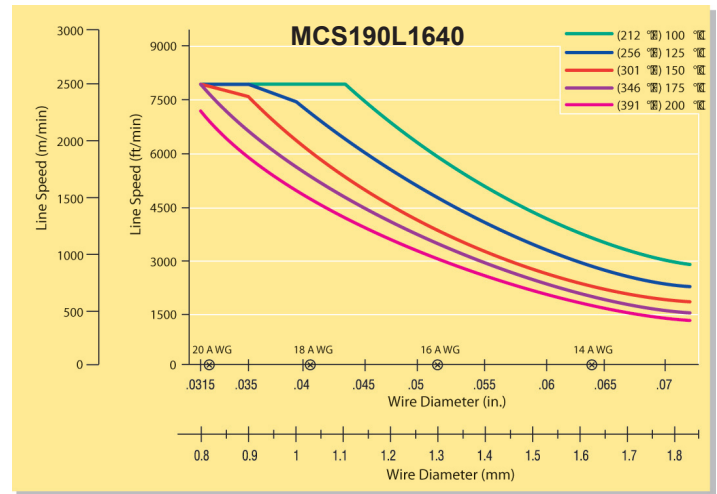
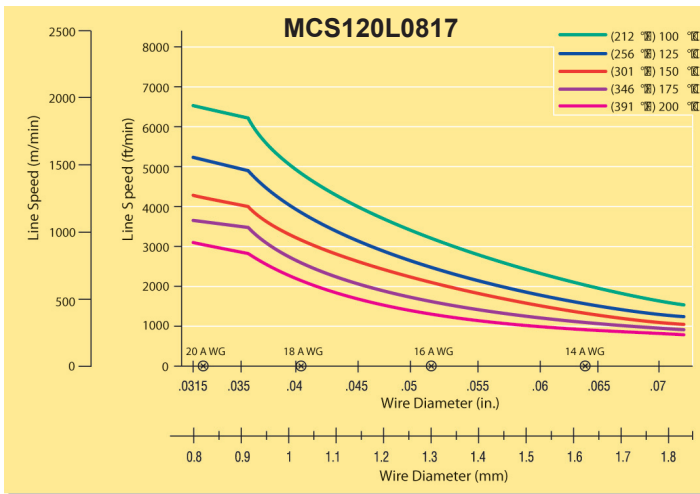
Presets

- Gain, bias, cut-on speed, and wire break sensitivity
- Select °C/°F and control loop ON/OFF switches

Interfacing

- Set temperature input: 0-10 VDC=0-1000°C/°F
- Contact inputs: start, stop, and remote set temperature enable
- Contact output: operating fault/power OFF
- Profibus option available

Performance Graphs*



*Maximum power not shown. 20% reserves calculated.
Base calculation for incoming wire temperature is 10°C (50°F).

Options

Standard Options	
Option	Model (MCS)
2 Wire Version	120, 280
Range Switch	120*
PIB1001 Profibus	ALL
Solenoid Door Switch	ALL
80 MM Plinth	ALL
Wide Track Pulley Set	280

Special Options	
Option	Model (MCS)
Low Loss Pulley Set	120, 280
High Temp Pulley Set	120, 280
Wheels and Rails-Sunken or Floor Mount	ALL
Material Selector Switch	ALL
WireTemp Mountings	ALL

*Range option standard on MCS190 and MCS280.

Preheater Models

Model	MCS120L0817	MCS280L1640	MCS190L1640
Wire size	0.28 - 1.4 mm (0.01 - 0.055 in.) 29 - 15 AWG Stranded wire up to 2.5 mm ² (0.0039 in. ²)	0.45 - 2.8 mm (0.02 - 0.11 in.) 25 - 9 AWG Stranded wire up to 6 mm ² (0.0093 in. ²)	0.37 - 1.4 mm (0.015 - 0.055 in.) 27 - 15 AWG
Maximum line speed	1500 m/min. (4900 ft./min.)	2500 m/min. (8200 ft./min.)	2500 m/min. (8200 ft./min.)
Maximum wire temp	190°C (370°F)	190°C (370°F)	400°C (750°F)
Pulley size	2 x 120 mm (2 x 4.7 in.)	2 x 280 mm (2 x 11 in.)	2 x 190 & 2 x 120 mm (2 x 7.5 & 2 x 4.7 in.)
Pulley sleeve	Contact/insulating	Contact/insulating	Ceramic
Power output	8 KVA	16 KVA	16 KVA
Max loop voltage	17 V	40 V	40 V
Dimensions	H: 1277 mm (50.26 in.) W: 390 mm (24.13 in.) D: 613 mm (15.35 in.)	H: 1277 mm (50.26 in.) W: 530 mm (20.87 in.) D: 763 mm (30.04 in.)	H: 1277 mm (50.26 in.) W: 530 mm (20.87 in.) D: 763 mm (30.04 in.)
Efficiency rate	>90%	>94%	>94%
Power supply	380-480 VAC, RMS 3 phase		
Sealing	Sealed to IP54 (NEMA 13)		

About Beta LaserMike

Beta LaserMike provides integrated process control solutions using a wide range of non-contact measurement technologies designed to improve product quality and reduce manufacturing costs. These solutions provide in-process dimensional monitoring, control, and sample/part inspection of products such as wire and cable, fiber optics, metals, rubber and plastic, flat rolled goods, tube and pipe, and other manufactured goods. Every system is backed by Beta LaserMike's world-class service and support organization. With offices around the globe, we're committed to serving your unique measurement application needs.

BETA LaserMike

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