

Tech Tip...



2020 Ford PIU Headlights with bluePRINT®

In 2020, Ford introduced the new Police Interceptor Utility to the market. New and improved, and full of SoundOff Signal® lighting. This Tech Tip covers how to interface with the mpower® lights installed into the headlights using bluePRINT.

Locate the following three plugs — one four-pin at each headlight, and one three-pin, near the water reservoir.

Please pay attention to the pinout for each plug listed below.



Sync Wire Connection

Step 1: Setting up the Sync Wires

First, locate the three-pin plug at the water reservoir. This is the Sync wire connection point for the SoundOff lights at the front of the vehicle. This is *only* for the mpower lights in the headlight and is not connected to the fog lights. Those are data controlled lights; do not tamper with that wiring.

On the three-pin plug is a green/white wire loop. Both of these wires need to be connected to ground. The third pin is ground, or these can be grounded externally. Doing so sets the four mpower lights to bluePRINT mode and ready for external flashing. See the section at the end of this document titled “Connectors” for more information on building this connector.

Sync Connector Pin-Out

Pin #	Function
1	Sync wire to R headlight
2	Sync wire to L headlight
3	Ground

Step 2: Headlight Connections

Each headlight has a four-pin connector that is populated completely on the headlight side, and only two wires populate the car side. We recommend buying the mating connectors shown at the end of this document to make connections from bluePRINT to the headlight.

See the below table for the pin-outs at each headlight

Headlight Connector Pin-Out

Pin #	mpower Wire Equivalent	Lighting Function
1	4" mpower Red/White Wire	4" mpower - Steady Color 2 (Blue)
2	4" mpower Red Wire	4" mpower - Steady Color 1 (Red)
3	3" mpower Red/White Wire	3" mpower - Steady Color 2 (Blue)
4	3" mpower Red Wire	3" mpower - Steady Color 1 (Red)



Headlight Connectors - Driver and Passenger Sides

Step 3: Final Notes and Tidying Up

When utilizing the mating connectors, be sure to leave a service loop at each headlight for OEM servicing. It's also a good idea to seal any exposed wire or connectors.

Protect any wiring from chafing using closed loom, split loom, or braided nylon. Zip tie any loose wiring, preferably to factory run wiring. Remember how heat can affect loom and wire insulation.

When building your own connectors, please be sure to order cavity plugs for any unused circuits.

Connector Part Listing



Headlight Connector

Description	Part Number	Website
Molex MX150 Male Connector - 4 Circuit - Black*	0334810401	Click to visit Molex
Molex MX150 Male Terminal - 16-20 AWG Wire	0330001002	Click to visit Molex
Molex MX150 Male Terminal - 22 AWG Wire	0330000003	Click to visit Molex
Molex MX150 Cavity Plug	0343450001	Click to visit Molex



Sync Connector

Description	Part Number	Website
Molex MX150 Female Connector - 3 Circuit - Black*	0334710301	Click to visit Molex
Molex MX150 Female Terminal - 16-20 AWG Wire	0330123001	Click to visit Molex
Molex MX150 Female Terminal - 22 AWG Wire	0330122003	Click to visit Molex
Molex MX150 Cavity Plug	0343450001	Click to visit Molex

*Ordering a connector with a color other than black may prevent proper fitment. Color determines which keying the connector will have.