DIFFICULTY
(Expert installation)

PayRange®

Relay Module

Laundry Installation Guide

For BluKey™ Pulse / Pro Pulse Devices

BluKey™ Pro Pulse

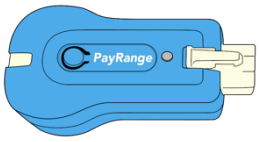
BluKey™ Pulse

LAUNDRY RELAY MODULE NO/NC

Coin Operated Pulse-Type Equipment

PayRange Laundry System

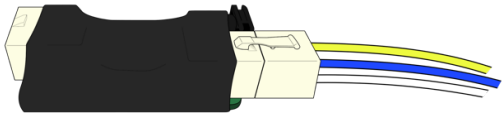
BluKey™ Pulse



BluKey™ Pro

Laundry Interface Kit

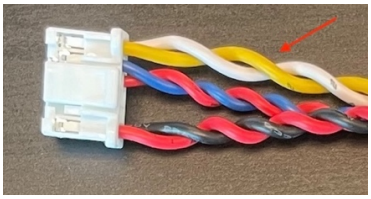
Relay Module
w/ Harness



Coin-Op Machine

BluKey device accepts payment from PayRange mobile app. Laundry Interface Kit (includes Laundry Interface Module and Cable Harnesses) connects BluKey to Laundry Machine and converts electrical signals between them.

****Note: Ignore the twisted yellow/white pair of wires located on the RelayModule Harness for BluKey Pro (these wires will not be used at this time).**



Installation Overview

The BluKey (BK) Pulse device can be installed as a cashless, mobile payment option in coin-operated laundry appliances that use a pulse payment system. BK Pulse credits a machine by sending pulses, working the same way as if cash has been inserted. Using the RelayModule Harness Kit, the BluKey device can be connected to the coin acceptor to allow coin pulses to pass through unimpeded, while upgrading your machine to also accept mobile payments. **The machine must have a coin acceptor to be compatible with the PayRange RelayModule.**

Note: Coin acceptor must be pulse-type, RelayModule cannot interface with serial or MDB hardware.

Installation Steps

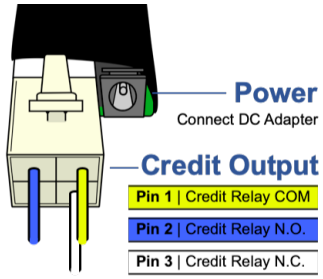
IMPORTANT: PayRange service requires data connection on a user's mobile device. Prior to installation, verify location has adequate cellular reception or a WiFi network that users can access. If mobile web browser can load a website relatively quickly, data connection should be adequate.

Step 1: Prepare Machine

- Completely disconnect power (unplug or turn off breaker)
- Open machine control panel or lid to access coin acceptor and locate a power source

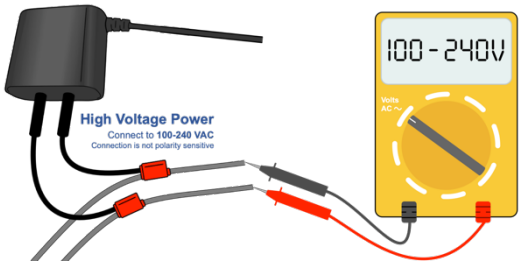
Step 2: Locate Power Source and Connect Adapter

The RelayModule is equipped with a DC jack which connects to a **High Voltage** or **Low Voltage** power adapter (included with harness). Do not attempt to modify the power connector or connect a power adapter that was not provided by PayRange.

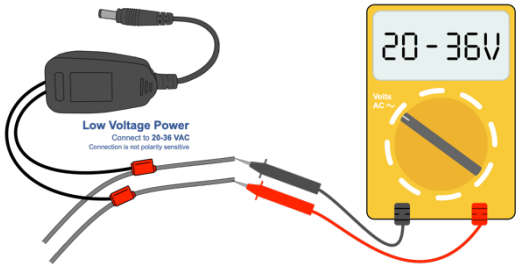


Input Range

- **Low Voltage: 20-36 VAC/VDC**
- **High Voltage: 100-240 VAC**



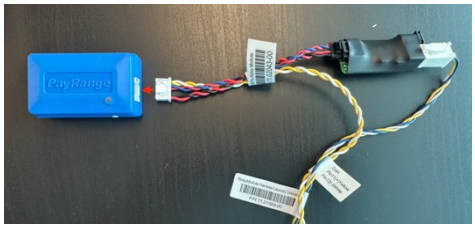
1. Use the machine wiring diagram and a voltmeter to locate a wire pair carrying constant power within the appropriate voltage range
   Note: *A label on a power transformer can be very helpful to identify voltages present.*
2. Connect one input wire from the power adapter to one of the machine power supply wires
3. Connect remaining power adapter input wire to remaining power supply wire
4. Connect power adapter to Relay Module DC jack



Step 3:

Connect BluKey Pro to harness.

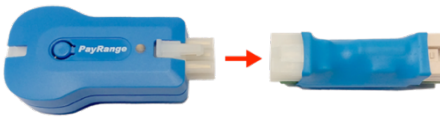
Connect BKPro Relay Module harness to BluKey Pro



or

Connect BluKey Pulse to Interface Module and harness.

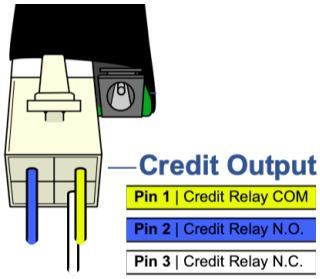
Connect BKPro Relay Module harness to one end of the Interface Module and BluKey Pulse to the opposite end of the Interface Module.



Step 4: Identify Coin Acceptor Type and Connection Method (Pages 7-15)

The Relay Module harness has three wire leads for credit output. Only two will be used for any installation depending on coin acceptor type (COM & NO or COM & NC):

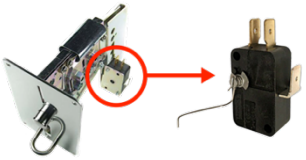
Pin 1. Relay Common (COM)
Pin 2. Relay Normally Open (NO)
Pin 3. Relay Normally Closed (NC)



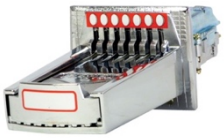
This guide splits coin acceptors into four categories: Optical Sensor, Microswitch, Coin Slide, and Third-Party. Determine machine coin acceptor type based on the category descriptions, then proceed to the respective section for connection method.

Optical Sensor: One coin inserted at a time, coin drops from chute through optical sensor opening, typically have three or four wire leads (some older optical sensors used five wire leads)
Jump to Optical Sensor wiring section

Microswitch: One coin inserted at a time, coin drops through chute and hits a wire lever/actuator, typically only two wire leads (there are three connection terminals, but only two are used)
Jump to Microswitch wiring section



Coin Slide: Multiple coins inserted at once, coins placed vertically in slide mechanism which can then be fully pushed in. Not all coin slides are compatible, see section for more information.
Jump to Coin Slide wiring section

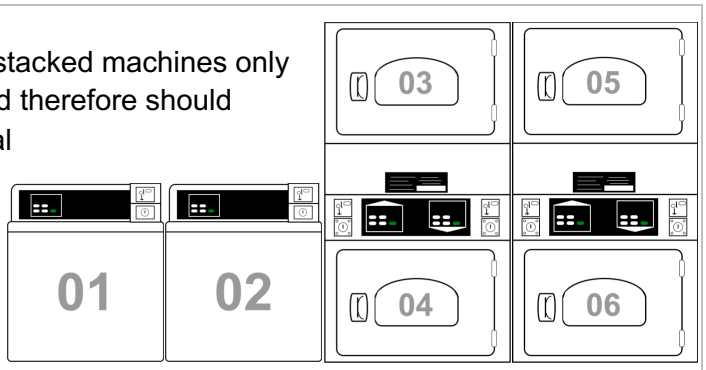


Third-Party: This category includes retro-fit, aftermarket and multiple-denomination coin mechanisms.
Such as Imonex, Setomatic, Keltner Research, etc.
Jump to Third-Party wiring section

Step 5 Affixing machine decals

- **Number Decal** – a unique number decal must be affixed to every laundry machine equipped with PayRange. Number decal not used for vending applications.
  - The decal should be placed on the machine in an area that is easily visible (near the coin slot is recommended) and that makes it obvious which machine the number is for.
  - Number machines left-to-right and top-to-bottom to make it easier for customers to locate machines. For stacked machines that require two devices, top machine should be lower number.

Note: Dexter and Maytag stacked machines only require a single device, and therefore should have a single number decal



- **First Purchase Free Decal** – this decal should be used only if the 'New User Program' is enabled on the operator account.
    - The New User Program allows brand new PayRange users to make a single transaction without adding funds and is a great way to incentivize mobile pay adoption.

To enable/disable feature, and set the maximum amount for transaction: login to Manage Console → select "Rewards" → select "New User Program

Step 6: Power On machine and register BluKey with PayRange App in front of machine after installation and testing after installation.

It is critical to test each BluKey device to verify proper installation, registration, and setup. Testing coin acceptor is also recommended, if applicable.

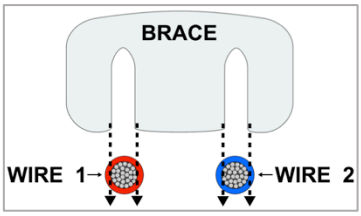
Recommended test procedure:

Repeat steps for all machines.

1. If machine accepts coins, insert a quarter, and verify price on display decrements by 25¢
2. Insert a card into the reader – verify normal card operation and machine can start.
3. Rapid advance machine to clear cycle.
4. Select the machine in the PayRange App and swipe to pay – verify machine displays PayRange balance (or value of free purchase code) and can start.

Using 3M™ Scotchlok™ IDC Tap Connectors

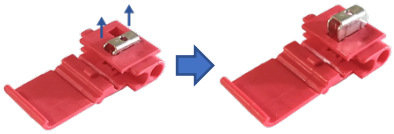
Tap splice connectors make it possible to splice anywhere along a wire without having to first cut the wire. A tap splice connector has a metal brace with two slots in it; one for each wire that goes into the connector. When the brace is crimped down it is designed to cut through the insulation only. This allows the metal brace to contact the strands of conductive wire, which connects the two wires in the connector.



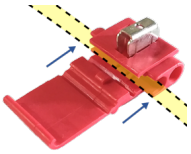
How Tap Splice Brace Connects Two Wires

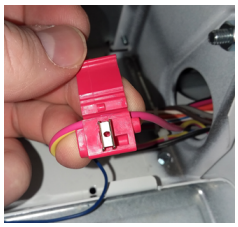
Using Included Red Tap Splice Connectors

1. Make sure brace is pulled out of splice far enough so wires can be fully inserted

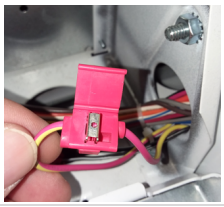


2. Insert the machine wire into the pass-through side of the connector

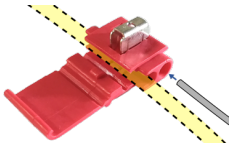


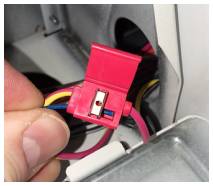


3. Close the first part of the tab

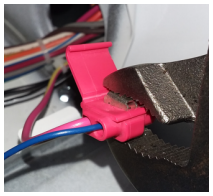


4. Insert a wire from BK Smart harness into the other slot of the splice connector. Push wire all the way in until it hits the stop

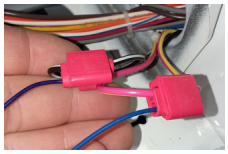




5. Crimp the metal brace all the way down until it is flush with the plastic part of the connector (crimp from the center to ensure brace crimps down straight and even)



6. Close the cover fully and check that the wire cannot be pulled out with a slight tug



Common Optical Sensors

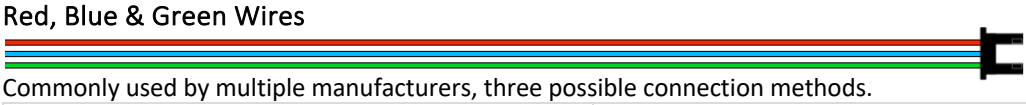
Optical sensors are the most common type of laundry coin acceptor. Locate the illustration that matches the machine's coin acceptor and connect as shown.

Optical sensors may have three, four or five wire leads. Click link to jump to relevant section.

Three Wire Sensor Four Wire Sensor Five Wire Sensor

Three Wire Optical Sensors

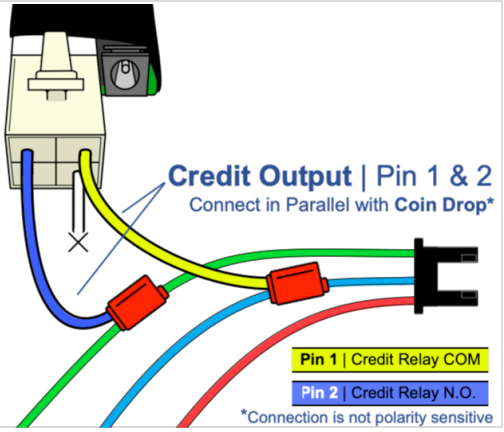
Red, Blue & Green Wires



Commonly used by multiple manufacturers, three possible connection methods.

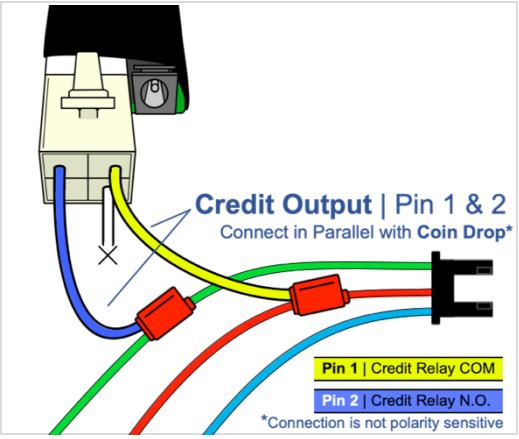
Method 1 (most common)
Manufacturers: Speed Queen, Huebsch, Ipso, Unimac, Dexter, ADC, Maytag (ADC-built)

1. Connect yellow wire (pin 1) to coin blue or coin green (connection is not polarity sensitive)
2. Connect blue wire (pin 2) to remaining coin green or blue
3. Tie unused white wire (pin 3) to prevent contact with any part of the machine



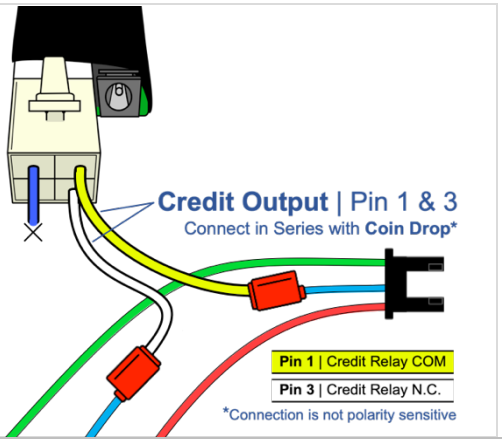
Method 2
Used in Primus models (not manufactured for Maytag)

1. Connect yellow wire (pin 1) to coin red or coin green (connection is not polarity sensitive)
2. Connect blue wire (pin 2) to remaining coin green or red
3. Tie unused white wire (pin 3) to prevent contact with any part of the machine

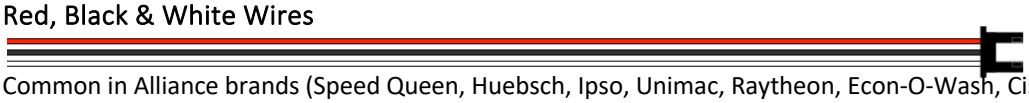


Method 3
Used in Maytag models manufactured by Primus

1. Start by cutting the coin blue wire
2. Connect yellow wire (pin 1) to one end of coin blue wire (connection is not polarity sensitive)
3. Connect white wire (pin 3) to remaining end of coin blue wire
4. Tie unused blue wire (pin 2) to prevent contact with any part of the machine

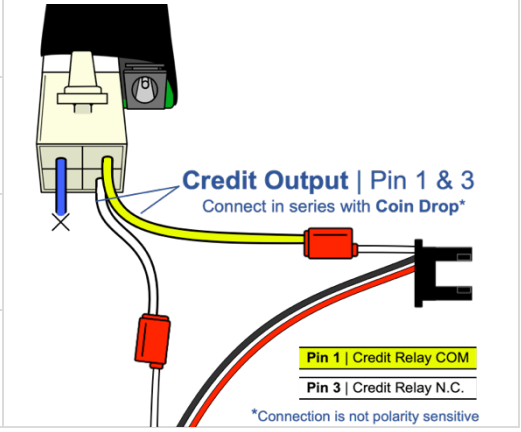


Red, Black & White Wires

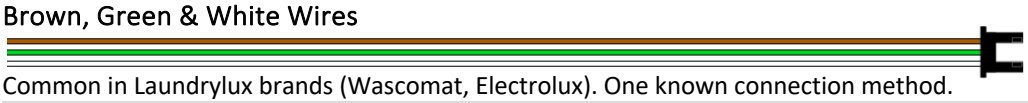


Common in Alliance brands (Speed Queen, Huebsch, Ipso, Unimac, Raytheon, Econ-O-Wash, Cissel), also used by other manufacturers. One known connection method.

1. Start by cutting the coin white wire
2. Connect yellow wire (pin 1) to one end of coin white wire (connection is not polarity sensitive)
3. Connect white wire (pin 3) to remaining end of coin white wire
4. Tie unused blue wire (pin 2) to prevent contact with any part of the machine

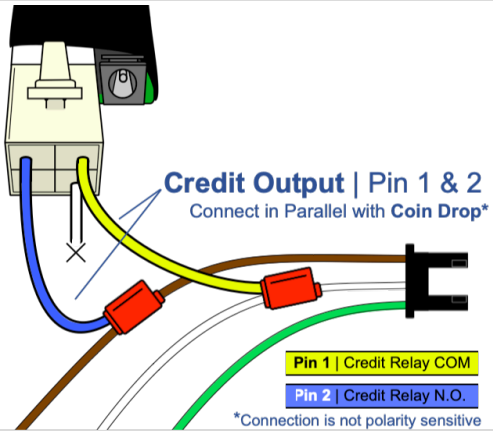


Brown, Green & White Wires

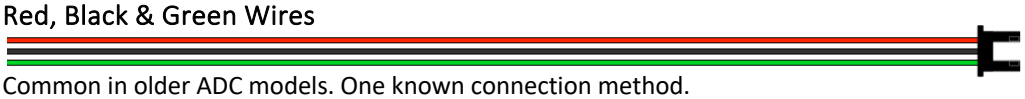


Common in Laundrylux brands (Wascomat, Electrolux). One known connection method.

1. Connect yellow wire (pin 1) to coin white or coin brown (connection is not polarity sensitive)
2. Connect blue wire (pin 2) to remaining coin brown or white
3. Tie unused white wire (pin 3) to prevent contact with any part of the machine

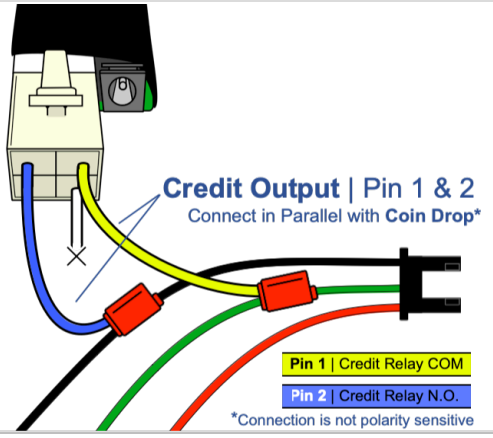


Red, Black & Green Wires



Common in older ADC models. One known connection method.

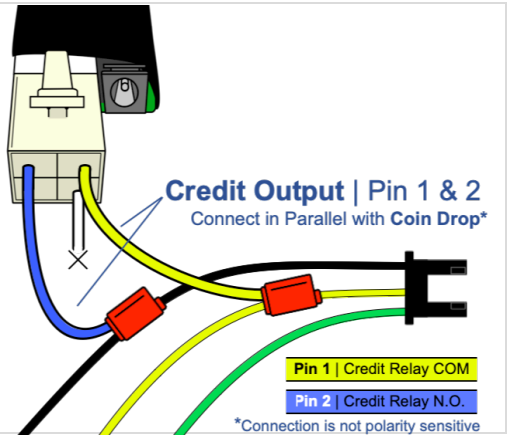
1. Connect yellow wire (pin 1) to coin green or coin black (connection is not polarity sensitive)
2. Connect blue wire (pin 2) to remaining coin black or green
3. Tie unused white wire (pin 3) to prevent contact with any part of the machine



Green, Yellow & Black Wires

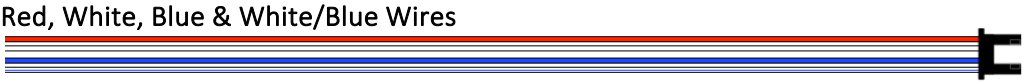
Common in Continental models. One known connection method.

1. Connect yellow wire (pin 1) to coin yellow or coin black (connection is not polarity sensitive)
2. Connect blue wire (pin 2) to remaining coin black or yellow
3. Tie unused white wire (pin 3) to prevent contact with any part of the machine



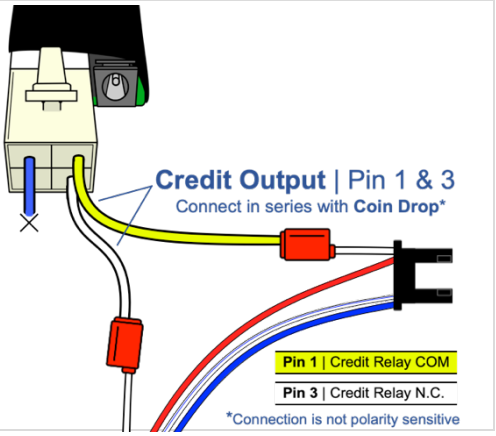
Four Wire Optical Sensors

Red, White, Blue & White/Blue Wires



Common in Maytag and Whirlpool models. One known connection method.

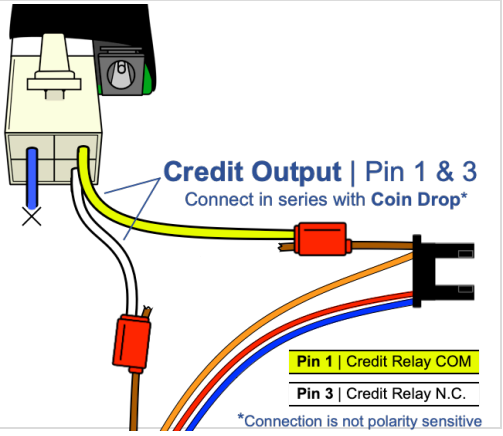
1. Start by cutting the coin white wire (solid white, not white/blue)
2. Connect yellow wire (pin 1) to one end of coin white wire (connection is not polarity sensitive)
3. Connect white wire (pin 3) to remaining end of coin white wire
4. Tie unused blue wire (pin 2) to prevent contact with any part of the machine



Blue, Red, Orange & Brown Wires

Common in Laundrylux brands (Wascomat, Electrolux) and Setomatic aftermarket acceptors. One known connection method.

1. Start by cutting the coin brown wire
2. Connect yellow wire (pin 1) to one end of coin brown wire (connection is not polarity sensitive)
3. Connect white wire (pin 3) to remaining end of coin brown wire
4. Tie unused blue wire (pin 2) to prevent contact with any part of the machine

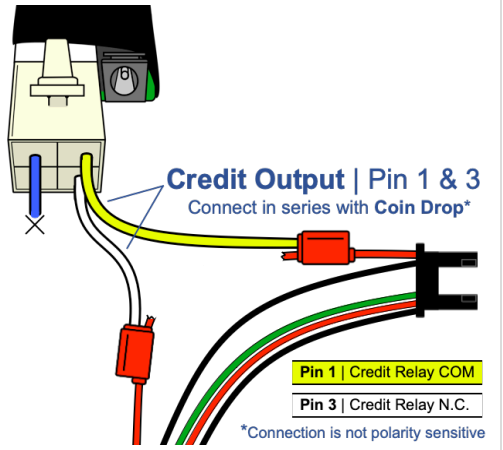


Five Wire Optical Sensors

Green, Two Red & Two Black Wires

Used in older Alliance and ADC equipment. One known connection method.

1. One side of the sensor has two wires (Red & Black), the other side has three (Red, Black & Green). Start by cutting the red wire on the side with two wires.
2. Connect yellow wire (pin 1) to one end of cut red wire (connection is not polarity sensitive)
3. Connect white wire (pin 3) to remaining end of cut red wire
4. Tie unused blue wire (pin 2) to prevent contact with any part of the machine



Microswitch Coin Acceptors

Common in Dexter equipment, also used by other manufacturers. A microswitch typically has three terminal contacts but only two are used. Each terminal identifier should be printed or etched on one side of the switch.

Figure 1 shows the most common pinout, but some switches have NC and NO reversed. Dexter uses the pinout shown; if the machine is not Dexter, check markings on switch to verify terminal orientation prior to install.

NO: Normally Open
NC: Normally Closed
COM: Common (always used)

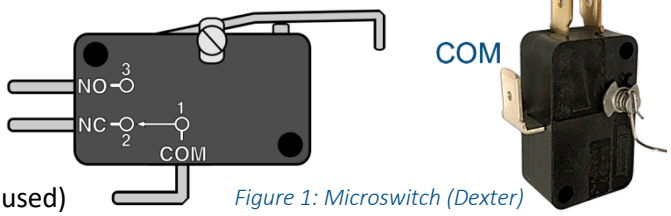


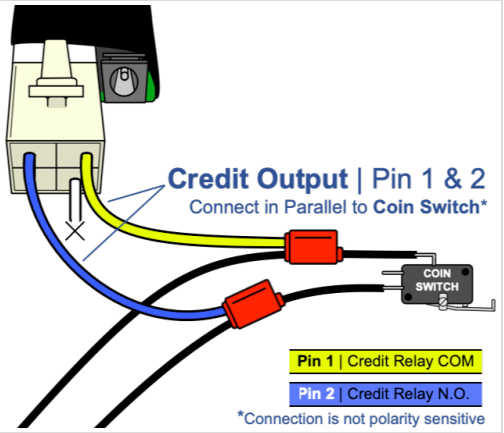
Figure 1: Microswitch (Dexter)

Normally Open (NO) Connection

Almost all microswitch acceptors are wired NO and use this connection method.

DEXTER machines are usually wired in NO orientation. Sometimes they're NC but work either way. If switch is wired NC, remove the wire from NC terminal and connect to NO, then insert a coin or press the switch manually to verify the machine still receives credit. If it does, use the NO connection method; if it does not, move the wire back to the NC terminal and use the NC connection method.

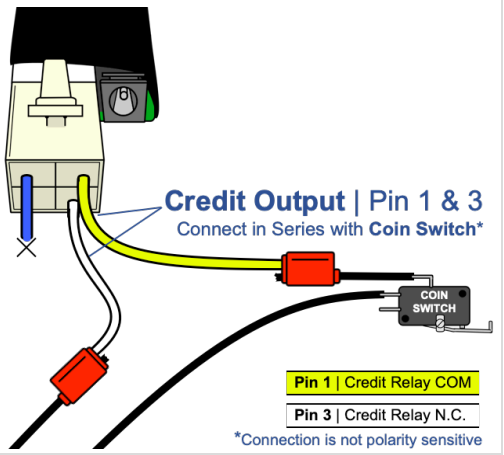
1. Connect yellow wire (pin 1) to a wire connected to either COM or NO terminal (connection is not polarity sensitive)
2. Connect blue wire (pin 2) to a wire at opposite terminal (NO or COM)
3. Tie unused white wire (pin 3) to prevent contact with any part of the machine



Normally Closed (NC) Connection

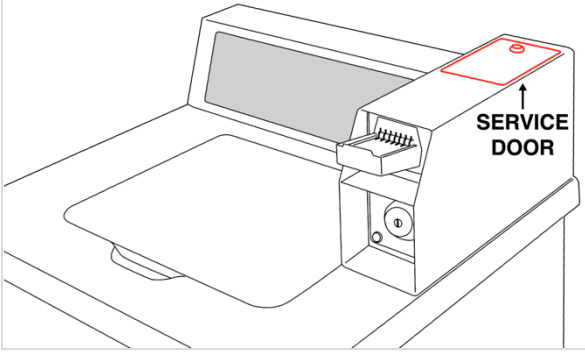
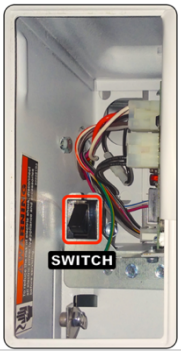
Not common.

1. Start by cutting either coin switch wire
2. Connect yellow wire (pin 1) to one end of cut wire (connection is not polarity sensitive)
3. Connect white wire (pin 3) to remaining end of cut wire
4. Tie unused blue wire (pin 2) to prevent contact with any part of the machine



Coin Slides

Compatible coin slides activate an electronic timer. Mechanical timer coin slides are not compatible with the RelayModule harness. Timer type can be verified by looking under the service door.

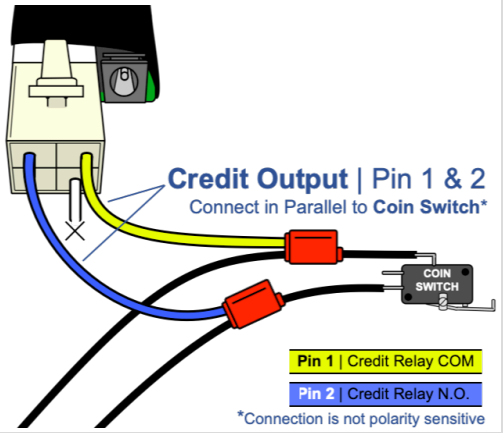
Service Door Location	Electronic Timer (Compatible)	Mechanical Timers (Not compatible)
		

Electronic timers usually have a switch behind the slide, but some use an optical sensor. Fish wiring through conduit so PayRange hardware can be placed behind the control panel and not under the service door where it may obstruct coin slide movement.

Coin Slide Switch Connection

Wires will be connected to two terminals on the switch.

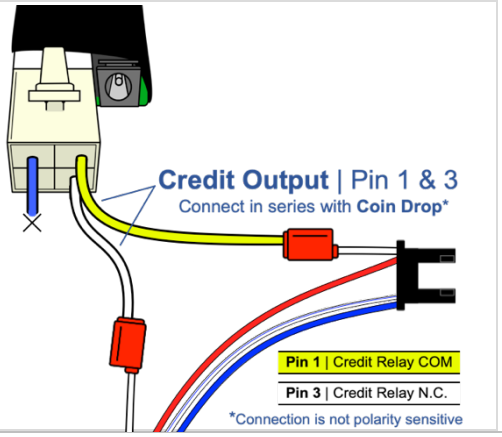
1. Connect yellow wire (pin 1) to a wire connected to either switch terminal (connection is not polarity sensitive)
2. Connect blue wire (pin 2) to a wire connected to remaining switch terminal
3. Tie unused white wire (pin 3) to prevent contact with any part of the machine



Coin Slide Optical Sensor Connection

Common in Maytag and Whirlpool coin slide models.

1. Start by cutting the coin white wire (solid white, not white/blue)
2. Connect yellow wire (pin 1) to one end of coin white wire (connection is not polarity sensitive)
3. Connect white wire (pin 3) to remaining end of coin white wire
4. Tie unused blue wire (pin 2) to prevent contact with any part of the machine



Third-Party Coin Acceptors

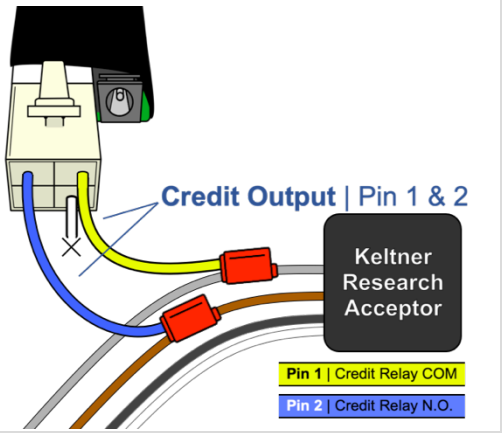
This section includes information for Keltner Research, Setomatic, Imonex, Münzprüfer, Slugbuster and GinSan units, and may be limited to specific models. For assistance with a third-party coin acceptor not addressed in this guide, please email LDecodes@payrange.com.

Keltner Research (KR)

Coin pulses are accumulated by the KR unit which then sends a single start pulse after vend price is satisfied. The BluKey device must be programmed with only a single price option that sends one pulse, and Pulse On set to 1000 milliseconds (ms).

There are several KR models, but all have a brown and gray wire. Some wire to an external black box which then connects to the machine – make connections between black box and machine controller.

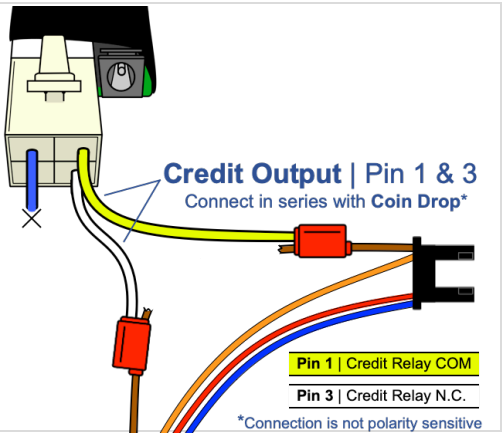
1. Connect yellow wire (pin 1) to the KR gray wire
2. Connect blue wire (pin 2) to the KR brown wire
3. Tie unused white wire (pin 3) to prevent contact with any part of the machine



Setomatic

Setomatic coin acceptors use a common optical sensor.

1. Start by cutting the coin brown wire
2. Connect yellow wire (pin 1) to one end of coin brown wire (connection is not polarity sensitive)
3. Connect white wire (pin 3) to remaining end of coin brown wire
4. Tie unused blue wire (pin 2) to prevent contact with any part of the machine



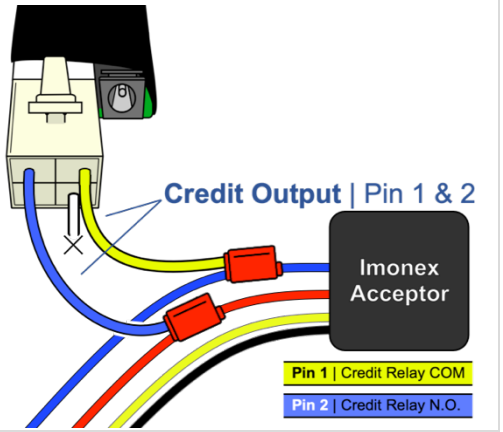
Imonex

Imonex coin acceptors are common in Dexter and Laundrylux (Wascomat/Electrolux) equipment and have varying wire colors. Illustrations below show common wire colors and connection methods.

Imonex with Black, Yellow, Red & Blue Wires

Common in Dexter equipment, may be found in machines from other manufacturers.

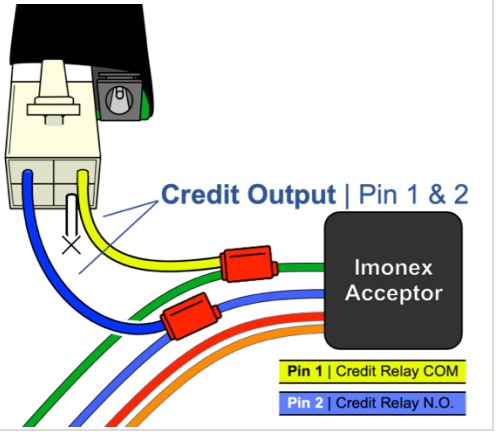
1. Connect yellow wire (pin 1) to Imonex blue or red (connection is not polarity sensitive)
2. Connect blue wire (pin 2) to remaining Imonex red or blue
3. Tie unused white wire (pin 3) to prevent contact with any part of the machine



Imonex with Black, Yellow, Red & Blue Wires

Common in Dexter equipment, may be found in machines from other manufacturers.

1. Connect yellow wire (pin 1) to Imonex green or blue (connection is not polarity sensitive)
2. Connect blue wire (pin 2) to remaining Imonex blue or green
3. Tie unused white wire (pin 3) to prevent contact with any part of the machine

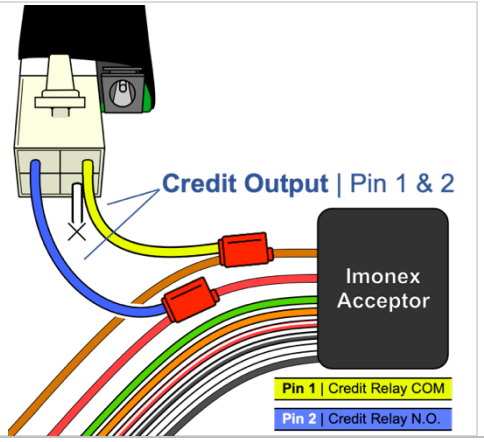


Imonex with Eight Wires

Brown	Red	Green	Orange
Red/White	Black/White	White	Black

Common in Laundrylux equipment (Electrolux/Wascomat)

1. Connect yellow wire (pin 1) to Imonex brown or red (connection is not polarity sensitive)
2. Connect blue wire (pin 2) to remaining Imonex red or brown
3. Tie unused white wire (pin 3) to prevent contact with any part of the machine



Fagor with Münzprüfer Coin Mech

1. Connect yellow wire (pin 1) to coin yellow or coin brown (connection is not polarity sensitive)
2. Connect blue wire (pin 2) to remaining coin brown or yellow
3. Tie unused white wire (pin 3) to prevent contact with any part of the machine