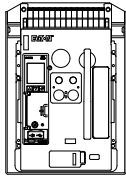


# Drawout secondary upgrade

Instructions apply to:

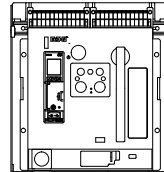


UL489

IEC

: PD-NF

: PD-NF, IZMX16



UL489

IEC

: PD-RF

: PD-RF, IZMX40

## **WARNING**

- (1) ONLY QUALIFIED ELECTRICAL PERSONNEL SHOULD BE PERMITTED TO WORK ON THE EQUIPMENT.
  - (2) ALWAYS DE-ENERGIZE PRIMARY AND SECONDARY CIRCUITS IF A CIRCUIT BREAKER CANNOT BE REMOVED TO A SAFE WORK LOCATION.
  - (3) DRAWOUT CIRCUIT BREAKERS SHOULD BE LEVERED (RACKED) OUT TO THE DISCONNECT POSITION.
  - (4) ALL CIRCUIT BREAKERS SHOULD BE SWITCHED TO THE OFF POSITION AND MECHANISM SPRINGS DISCHARGED.
- FAILURE TO FOLLOW THESE STEPS FOR ALL PROCEDURES DESCRIBED IN THIS INSTRUCTION LEAFLET COULD RESULT IN DEATH, BODILY INJURY, OR PROPERTY DAMAGE.

## **WARNING**

THE INSTRUCTIONS CONTAINED IN THIS IL AND ON PRODUCT LABELS HAVE TO BE FOLLOWED. OBSERVE THE FIVE SAFETY RULES:

- DISCONNECTING
  - ENSURE THAT DEVICES CANNOT BE ACCIDENTALLY RESTARTED
  - VERIFY ISOLATION FROM THE SUPPLY
  - EARTHING AND SHORT-CIRCUITING
  - COVERING OR PROVIDING BARRIERS TO ADJACENT LIVE PARTS
- DISCONNECT THE EQUIPMENT FROM THE SUPPLY. USE ONLY AUTHORIZED SPARE PARTS IN THE REPAIR OF THE EQUIPMENT. THE SPECIFIED MAINTENANCE INTERVALS AS WELL AS THE INSTRUCTIONS FOR REPAIR AND EXCHANGE MUST BE STRICTLY ADHERED TO PREVENT INJURY TO PERSONNEL AND DAMAGE TO THE SWITCHBOARD.

Section 1: General information about the updated drawout secondary terminal blocks

These instructions detail the upgrade process from the circuit breaker with Digitrip drawout secondary terminal blocks to the circuit breaker with PXR drawout secondary terminal blocks. The number of terminal blocks and contact points change slightly from the Digitrip design to the PXR design (see Table 1). The number of terminal blocks mounted depends on a number of considerations, such as whether the circuit breaker is electrically or manually operated and how many features are required.

Tools/materials required

- #2 Phillips head screwdriver
- Slotted 1/8" / 3 mm screwdriver

Kit parts identification

Refer to Figure 1 for visual identification of the parts listed below:

|                                   |           |           |
|-----------------------------------|-----------|-----------|
| (A) Terminal block                | NF – (14) | RF – (24) |
| (B) Terminal bracket              | NF – (1)  | RF – (2)  |
| (C) Alignment bracket             | NF – (1)  | RF – (2)  |
| (D) Jumper wire                   | (1)       |           |
| (E) Cassette secondary over label | NF – (1)  | RF – (1)  |
| (F) Cassette catalog # over label | (1)       |           |

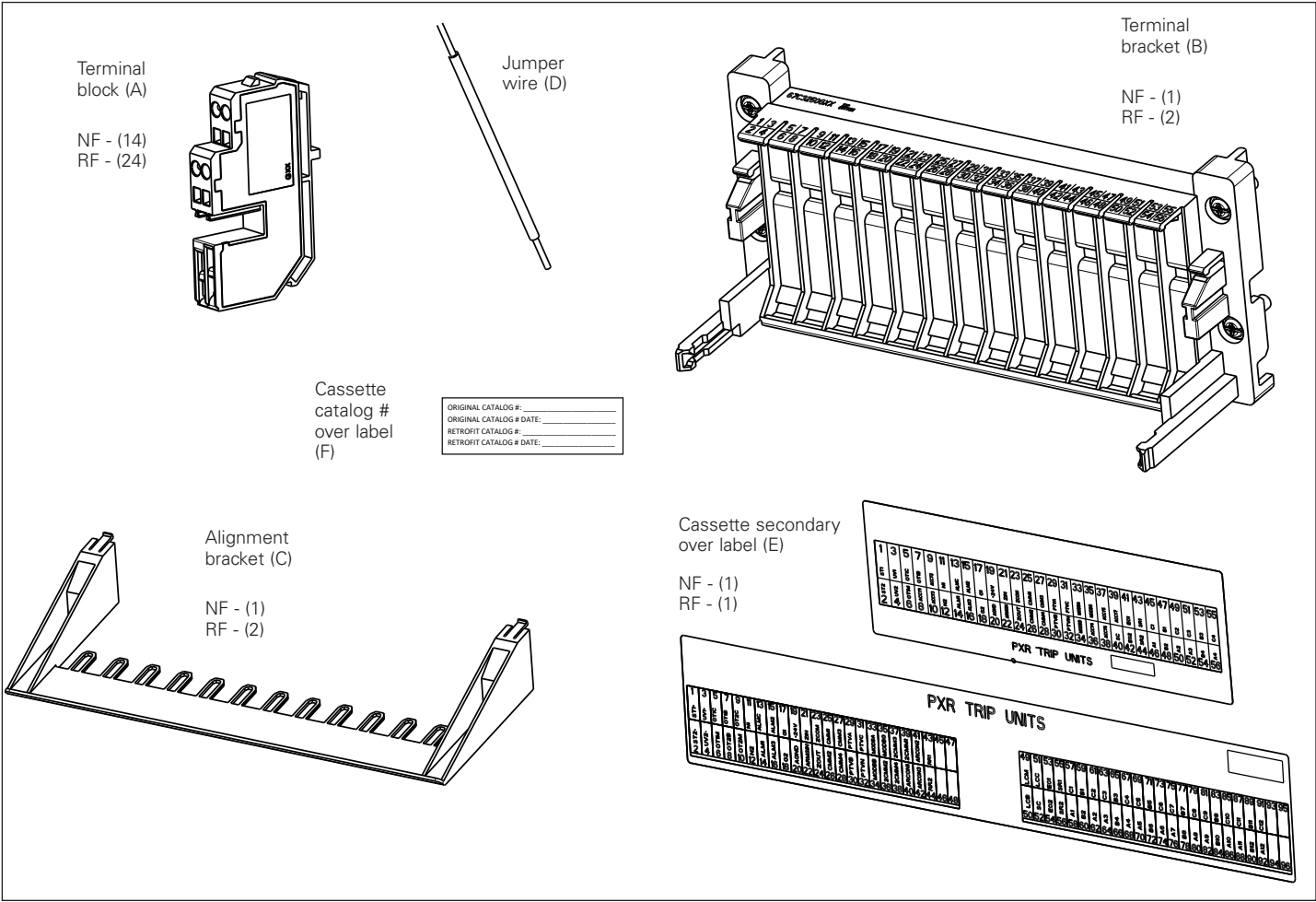


Figure 1. Contents of kit.

**Table 1. Terminal block and contact point changes from the secondary terminal block upgrade.**

|               | NF frame<br>(1 individual cradle) |                | RF frame<br>(2 individual cradles) |                |
|---------------|-----------------------------------|----------------|------------------------------------|----------------|
|               | Terminal blocks                   | Contact points | Terminal blocks                    | Contact points |
| Digitrip      | 27                                | 54             | 46                                 | 92             |
| PXR (upgrade) | 14                                | 56             | 24                                 | 96             |

### IMPORTANT

**SOME SECONDARY CONTROL POINTS HAVE CHANGED BETWEEN DESIGNS. REVIEW THE CROSS REFERENCE INFORMATION PROVIDED IN TABLE 2 TO BECOME FAMILIAR WITH THESE CHANGES.**

**Table 2. PXR/Digitrip cross reference.***NF point cross reference*

| PXR point position | PXR point name | Digitrip point position | General description          | Function                                        | Individual point description                                                                  |
|--------------------|----------------|-------------------------|------------------------------|-------------------------------------------------|-----------------------------------------------------------------------------------------------|
| 1                  | ST1+           | 1                       | Shunt trip                   | Remote tripping                                 | Shunt trip positive                                                                           |
| 2                  | ST2-           | 2                       |                              |                                                 | Shunt trip negative                                                                           |
| 3                  | UV1+           | 3                       | Under voltage release        | Remote tripping                                 | UVR positive/second shunt trip positive                                                       |
| 4                  | UV2-           | 4                       |                              |                                                 | UVR negative/second shunt trip negative                                                       |
| 5                  | OT1C           | 5                       | Bell alarm 1                 | Indicates when breaker opens via the trip unit. | Over-current trip switch 1 common                                                             |
| 6                  | OT1M           | 6                       |                              |                                                 | Over-current trip switch 1 make (will "make" when breaker trips).                             |
| 7                  | OT1B           | 7                       |                              |                                                 | Over-current trip switch 1 break (will "break" when breaker trips).                           |
| 8                  | ACCY1          | 8                       | Bell alarm 2                 | Indicates when breaker opens via the trip unit. | Over-current trip switch 2 break (will "break" when breaker trips).                           |
| 9                  | ACCY2          | 9                       |                              |                                                 | Over-current trip switch 2 common.                                                            |
| 10                 | ACCY3          | 10                      |                              |                                                 | Over-current trip switch 2 make (will "make" when breaker trips).                             |
| 11*                | N1             | 15                      | External neutral sensor      | External neutral trip unit input                | Neutral 1 (external neutral sensor "start lead").                                             |
| 12*                | N2             | 16                      |                              |                                                 | Neutral 2 (external neutral sensor "finish lead").                                            |
| 13                 | ALMC           | 11                      | Alarm relay contacts         |                                                 | Alarm common "relay common"                                                                   |
| 14                 | ALM1           | 12                      |                              | Alarm 1 - Maintenance mode is active.           | Alarm 1 "Normally open contact" - Remote indication of problem or maintenance mode is active. |
| 15                 | ALM2           | 13                      |                              | Alarm 2 - Hi-load alarm or ground alarm.        | Alarm 2 "Normally open contact" - Hi-load alarm (no GF) or ground alarm indication.           |
| 16                 | ALM3           | N/A                     |                              | Alarm 3 - electronic OTS.                       | Alarm 3 "Normally open contact" - electronic OTS.                                             |
| 17                 | G1             | 17                      | External ground fault sensor | External ground fault sensor trip unit input    | Ground 1 (external ground fault source sensor "start lead").                                  |
| 18                 | G2             | 18                      |                              |                                                 | Ground 2 (external ground fault source sensor "finish lead").                                 |
| 19                 | +24V           | 21                      | Trip unit auxiliary power    | External trip unit power                        | +24 VDC                                                                                       |
| 20                 | AGND           | 22                      | Analog ground                | Ground contact for trip unit functions          | Analog ground                                                                                 |
| 21                 | ZIN            | 29                      | Zone selective interlocking  | Selective coordination                          | Zone selective interlocking IN                                                                |
| 22                 | ARMSIN         | 34                      | Maintenance mode             | Low level instantaneous setting                 | Maintenance mode 2 (analog switch to activate maintenance mode).                              |
| 23                 | ZCOM           | 28                      | Zone selective interlocking  | Selective coordination                          | Zone selective interlocking common                                                            |
| 24                 | ZOUT           | 27                      |                              |                                                 | Zone selective interlocking OUT                                                               |
| 25                 | CMM1           | 23                      |                              | Trip unit communications module #1              | First Comm channel - transmit positive                                                        |
| 26                 | CMM2           | 24                      |                              |                                                 | First Comm channel - transmit negative                                                        |

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(cont.).

**Table 2. PXR/Digitrip cross reference.***NF point cross reference*

| PXR point position | PXR point name | Digitrip point position | General description                    | Function                                | Individual point description                                                            |
|--------------------|----------------|-------------------------|----------------------------------------|-----------------------------------------|-----------------------------------------------------------------------------------------|
| 27                 | CMM3           | 25                      |                                        |                                         | First Comm channel - receive positive                                                   |
| 28                 | CMM4           | 26                      |                                        |                                         | First Comm channel - receive negative                                                   |
| 29                 | PTVA           | 30                      | Power transformer                      | Required for voltage metering           | Volt metering input A                                                                   |
| 30                 | PTVB           | 31                      |                                        |                                         | Volt metering input B                                                                   |
| 31                 | PTVC           | 32                      |                                        |                                         | Volt metering input C                                                                   |
| 32                 | PTVN           | 14                      |                                        |                                         | Volt metering input N                                                                   |
| 33                 | MODBA          | N/A                     | ModBus communication                   | ModBus communication onboard trip unit  | PXR onboard ModBus                                                                      |
| 34                 | MODBB          | N/A                     |                                        |                                         | PXR onboard ModBus                                                                      |
| 35                 | MODBG          | N/A                     |                                        |                                         | PXR onboard ModBus                                                                      |
| 36                 | ACCY4          | N/A                     | Future                                 | Future                                  | Future                                                                                  |
| 37                 | ACCY5          | 40                      | Latch check switch                     | Checks position of latch before closing | Latch check switch "common".                                                            |
| 38                 | ACCY6          | 41                      |                                        |                                         | Latch check switch "make" (makes when mechanism is fully latched and ready to close).   |
| 39                 | ACCY7          | 42                      |                                        |                                         | Latch check switch "break" (brakes when mechanism is fully latched and ready to close). |
| 40                 | SC             | 39                      | Electrical operator/<br>motor operator | Remote charging                         | Spring charge (E01 presented here when mechanism is charged).                           |
| 41                 | E01+           | 37                      |                                        |                                         | Electric operator positive (charging motor)                                             |
| 42                 | E02-           | 38                      |                                        |                                         | Electric operator negative (charging motor)                                             |
| 43                 | SR1            | 35                      | Spring release                         | Remote closing                          | Spring release 1 (close coil)                                                           |
| 44                 | SR2            | 36                      |                                        |                                         | Spring release 2 (close coil)                                                           |
| 45                 | C1             | 43                      | Auxiliary switch 1                     | Indicates breaker open/closed status.   | Aux switch 1 "common"                                                                   |
| 46                 | A1             | 44                      |                                        |                                         | Aux switch 1 "make" (makes when pole shaft is open).                                    |
| 47                 | B1             | 45                      |                                        |                                         | Aux switch 1 "break" (breaks when pole shaft is open).                                  |
| 48                 | B2             | 46                      | Auxiliary switch 2                     | Indicates breaker open/closed status.   | Aux switch 2 "common"                                                                   |
| 49                 | C2             | 47                      |                                        |                                         | Aux switch 2 "make" (makes when pole shaft is open).                                    |
| 50                 | A2             | 48                      |                                        |                                         | Aux switch 2 "break" (breaks when pole shaft is open).                                  |
| 51                 | C3             | 49                      | Auxiliary switch 3                     | Indicates breaker open/closed status.   | Aux switch 3 "common"                                                                   |
| 52                 | A3             | 50                      |                                        |                                         | Aux switch 3 "make" (makes when pole shaft is open).                                    |
| 53                 | B3             | 51                      |                                        |                                         | Aux switch 3 "break" (breaks when pole shaft is open).                                  |
| 54                 | B4             | 52                      | Auxiliary switch 4                     | Indicates breaker open/closed status.   | Aux switch 4 "common"                                                                   |
| 55                 | C4             | 53                      |                                        |                                         | Aux switch 4 "make" (makes when pole shaft is open).                                    |
| 56                 | A4             | 54                      |                                        |                                         | Aux switch 4 "break" (breaks when pole shaft is open).                                  |

\* Jumper wire must be installed between positions 11 and 12 if an external neutral current sensor is not installed.

**Note:** Shaded table cells indicate a position change. Digitrip point positions not listed are no longer used on NRX with PXR**Table 2. PXR/digitrip cross reference (cont.).***RF point cross reference*

| PXR point position | PXR point name | Digitrip point position | General description | Function        | Individual point description |
|--------------------|----------------|-------------------------|---------------------|-----------------|------------------------------|
| 1                  | ST1+           | 1                       | Shunt trip          | Remote tripping | Shunt trip positive          |

**Table 2. PXR/digitrip cross reference (cont.).***RF point cross reference*

| PXR point position | PXR point name | Digitrip point position | General description                | Function                                                                                                       | Individual point description                                                                 |
|--------------------|----------------|-------------------------|------------------------------------|----------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| 2                  | ST2-           | 2                       | Under-voltage release              | Remote tripping                                                                                                | Shunt trip negative                                                                          |
| 3                  | UV1+           | 3                       |                                    |                                                                                                                | UVR positive/second shunt trip positive                                                      |
| 4                  | UV2-           | 4                       |                                    |                                                                                                                | UVR negative/second shunt trip negative                                                      |
| 5                  | OT1C           | 5                       | Bell alarm 1                       | Indicates when breaker opens via the trip unit.                                                                | Over-current trip switch 1 common                                                            |
| 6                  | OT1M           | 6                       |                                    |                                                                                                                | Over-current trip switch 1 "make" (makes when breaker trips).                                |
| 7                  | OT1B           | 7                       |                                    |                                                                                                                | Over-current trip switch 1 "break" (breaks when breaker trips).                              |
| 8                  | OT2B           | 8                       | Bell alarm 2                       | Indicates when breaker opens via the trip unit .                                                               | Over-current trip switch 2 "break" (breaks when breaker trips).                              |
| 9                  | OT2C           | 9                       |                                    |                                                                                                                | Over-current trip switch 2 common                                                            |
| 10                 | OT2M           | 10                      |                                    |                                                                                                                | Over-current trip switch 2 "make" (makes when breaker trips).                                |
| 11*                | N1             | 15                      | External neutral sensor            | External neutral trip unit input                                                                               | Neutral 1 (external neutral sensor "start lead").                                            |
| 12*                | N2             | 16                      |                                    |                                                                                                                | Neutral 2 (external neutral sensor "finish lead").                                           |
| 13                 | ALMC           | 11                      | Alarm relay contacts               | Alarm 1 - Maintenance mode is active.<br>Alarm 2 - Hi-load alarm or ground alarm.<br>Alarm 3 - Electronic OTS. | Alarm common "relay common"                                                                  |
| 14                 | ALM1           | 12                      |                                    |                                                                                                                | Alarm 1 "normally open contact" - remote indication of problem or maintenance mode is active |
| 15                 | ALM2           | 13                      |                                    |                                                                                                                | Alarm 2 "normally open contact" - hi-load alarm (no GF) or ground alarm indication           |
| 16                 | ALM3           | N/A                     |                                    |                                                                                                                | Alarm 3 "normally open contact" - electronic OTS                                             |
| 17                 | G1             | 17                      | External ground fault sensor       | External ground fault sensor trip unit input                                                                   | Ground 1 (external ground fault source sensor "start lead")                                  |
| 18                 | G2             | 18                      |                                    |                                                                                                                | Ground 2 (external ground fault source sensor "finish lead")                                 |
| 19                 | +24V           | 21                      | Trip unit auxiliary power          | External trip unit power                                                                                       | +24 VDC                                                                                      |
| 20                 | AGND           | 22                      | Analog ground                      | Ground contact for trip unit functions                                                                         | Analog ground                                                                                |
| 21                 | ZIN            | 29                      | Zone selective interlocking        | Selective coordination                                                                                         | Zone selective interlocking IN                                                               |
| 22                 | ARMSIN         | 34                      | Maintenance mode                   | Low level instantaneous setting                                                                                | Maintenance mode 2 (analog switch to activate maintenance mode)                              |
| 23                 | ZCOM           | 28                      | Zone selective interlocking        | Selective coordination                                                                                         | Zone selective interlocking common                                                           |
| 24                 | ZOUT           | 27                      |                                    |                                                                                                                | Zone selective interlocking OUT                                                              |
| 25                 | CMM1           | 23                      | Trip unit communications module #1 | Trip unit communications                                                                                       | First Comm channel - transmit Positive                                                       |
| 26                 | CMM2           | 24                      |                                    |                                                                                                                | First Comm channel - transmit negative                                                       |
| 27                 | CMM3           | 25                      |                                    |                                                                                                                | First Comm channel - receive positive                                                        |
| 28                 | CMM4           | 26                      |                                    |                                                                                                                | First Comm channel - receive negative                                                        |
| 29                 | PTVA           | 30                      | Power transformer                  | Required for voltage metering                                                                                  | Volt metering input A                                                                        |
| 30                 | PTVB           | 31                      |                                    |                                                                                                                | Volt metering input B                                                                        |
| 31                 | PTVC           | 32                      |                                    |                                                                                                                | Volt metering input C                                                                        |
| 32                 | PTVN           | 14                      |                                    |                                                                                                                | Volt metering input N                                                                        |
| 33                 | MODBA          | N/A                     | ModBus communication               | ModBus communication onboard trip unit                                                                         | PXR onboard ModBus                                                                           |

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**Table 2. PXR/digitrip cross reference (cont.).***RF point cross reference*

| PXR point position | PXR point name | Digitrip point position | General description                | Function                                | Individual point description                                                            |
|--------------------|----------------|-------------------------|------------------------------------|-----------------------------------------|-----------------------------------------------------------------------------------------|
| 34                 | MODBB          | N/A                     |                                    |                                         | PXR onboard ModBus                                                                      |
| 35                 | MODBG          | N/A                     |                                    |                                         | PXR onboard ModBus                                                                      |
| 36                 | 2CMM2          | N/A                     | Trip unit communications module #1 | Trip unit communications                | Second Comm channel - transmit negative                                                 |
| 37                 | 2CMM3          | N/A                     |                                    |                                         | Second Comm channel - receive positive                                                  |
| 38                 | 2CMM4          | N/A                     |                                    |                                         | Second Comm channel - receive negative                                                  |
| 39                 | 2CMM1          | N/A                     |                                    |                                         | Second Comm channel - transmit positive                                                 |
| 40                 | ARCON1         | 40                      | Arc flash detection system         | Eaton arc flash protection system       | ARCON                                                                                   |
| 41                 | ARCON2         | 41                      |                                    |                                         | ARCON                                                                                   |
| 42                 | ARCON3         | 42                      |                                    |                                         | ARCON                                                                                   |
| 43                 | RR1            | 37                      | Remote reset trip indicator        | Remote resetting of indicator           | Remote reset trip indicator 1                                                           |
| 44                 | RR2            | 38                      |                                    |                                         | Remote reset trip indicator2                                                            |
| 45                 | -              | N/A                     | Future                             | Future                                  | Future                                                                                  |
| 46                 | -              | N/A                     | Future                             | Future                                  | Future                                                                                  |
| 47                 | -              | N/A                     | Future                             | Future                                  | Future                                                                                  |
| 48                 | -              | N/A                     | Future                             | Future                                  | Future                                                                                  |
| 49                 | LCC            | 55                      | Latch check switch (external)      | Checks position of latch before closing | Latch check switch "common"                                                             |
| 50                 | LCM            | 56                      |                                    |                                         | Latch check switch "make" (makes when mechanism is fully latched and ready to close).   |
| 51                 | LCB            | 54                      |                                    |                                         | Latch check switch "break" (breaks when mechanism is fully latched and ready to close). |
| 52                 | SC             | 53                      | Electrical operator/motor operator | Remote charging                         | Spring charge (E01 presented here when mechanism is charged).                           |
| 53                 | E01+           | 51                      |                                    |                                         | Electric operator positive (charging motor)                                             |
| 54                 | E02-           | 52                      |                                    |                                         | Electric operator negative (charging motor)                                             |
| 55                 | SR1            | 49                      | Spring release                     | Remote closing                          | Spring release 1 (close coil)                                                           |
| 56                 | SR2            | 50                      |                                    |                                         | Spring release 2 (close coil)                                                           |
| 57                 | C1             | 57                      | Auxiliary switch 1                 | Indicates breaker open/closed status    | Aux switch 1 "common"                                                                   |
| 58                 | A1             | 58                      |                                    |                                         | Aux switch 1 "make" (makes when pole shaft is open).                                    |
| 59                 | B1             | 59                      |                                    |                                         | Aux switch 1 "break" (breaks when pole shaft is open).                                  |
| 60                 | B2             | 60                      | Auxiliary switch 2                 | Indicates breaker open/closed status    | Aux switch 2 "common"                                                                   |
| 61                 | C2             | 61                      |                                    |                                         | Aux switch 2 "make" (makes when pole shaft is open).                                    |
| 62                 | A2             | 62                      |                                    |                                         | Aux switch 2 "break" (breaks when pole shaft is open).                                  |
| 63                 | C3             | 63                      | Auxiliary switch 3                 | Indicates breaker open/closed status    | Aux switch 3 "common"                                                                   |
| 64                 | A3             | 64                      |                                    |                                         | Aux switch 3 "make" (makes when pole shaft is open).                                    |
| 65                 | B3             | 65                      |                                    |                                         | Aux switch 3 "break" (breaks when pole shaft is open).                                  |

**Table 2. PXR/digitrip cross reference (cont.).***RF point cross reference*

| PXR point position | PXR point name | Digitrip point position | General description | Function                             | Individual point description                            |
|--------------------|----------------|-------------------------|---------------------|--------------------------------------|---------------------------------------------------------|
| 66                 | B4             | 66                      | Auxiliary switch 4  | Indicates breaker open/closed status | Aux switch 4 "common"                                   |
| 67                 | C4             | 67                      |                     |                                      | Aux switch 4 "make" (makes when pole shaft is open).    |
| 68                 | A4             | 68                      |                     |                                      | Aux switch 4 "break" (breaks when pole shaft is open).  |
| 69                 | C5             | 69                      | Auxiliary switch 5  | Indicates breaker open/closed status | Aux switch 5 "common"                                   |
| 70                 | A5             | 70                      |                     |                                      | Aux switch 5 "make" (makes when pole shaft is open).    |
| 71                 | B5             | 71                      |                     |                                      | Aux switch 5 "break" (breaks when pole shaft is open).  |
| 72                 | B6             | 72                      | Auxiliary switch 6  | Indicates breaker open/closed status | Aux switch 6 "common"                                   |
| 73                 | C6             | 73                      |                     |                                      | Aux switch 6 "make" (makes when pole shaft is open).    |
| 74                 | A6             | 74                      |                     |                                      | Aux switch 6 "break" (breaks when pole shaft is open).  |
| 75                 | C7             | 75                      | Auxiliary switch 7  | Indicates breaker open/closed status | Aux switch 7 "common"                                   |
| 76                 | A7             | 76                      |                     |                                      | Aux switch 7 "make" (makes when pole shaft is open).    |
| 77                 | B7             | 77                      |                     |                                      | Aux switch 7 "break" (breaks when pole shaft is open).  |
| 78                 | B8             | 78                      | Auxiliary switch 8  | Indicates breaker open/closed status | Aux switch 8 "common"                                   |
| 79                 | C8             | 79                      |                     |                                      | Aux switch 8 "make" (makes when pole shaft is open).    |
| 80                 | A8             | 80                      |                     |                                      | Aux switch 8 "break" (breaks when pole shaft is open).  |
| 81                 | C9             | 81                      | Auxiliary switch 9  | Indicates breaker open/closed status | Aux switch 9 "common"                                   |
| 82                 | A9             | 82                      |                     |                                      | Aux switch 9 "make" (makes when pole shaft is open).    |
| 83                 | B9             | 83                      |                     |                                      | Aux switch 9 "break" (breaks when pole shaft is open).  |
| 84                 | B10            | 84                      | Auxiliary switch 10 | Indicates breaker open/closed status | Aux switch 10 "common"                                  |
| 85                 | C10            | 85                      |                     |                                      | Aux switch 10 "make" (makes when pole shaft is open).   |
| 86                 | A10            | 86                      |                     |                                      | Aux switch 10 "break" (breaks when pole shaft is open). |
| 87                 | C11            | 87                      | Auxiliary switch 11 | Indicates breaker open/closed status | Aux switch 11 "common"                                  |
| 88                 | A11            | 88                      |                     |                                      | Aux switch 11 "make" (makes when pole shaft is open).   |
| 89                 | B11            | 89                      |                     |                                      | Aux switch 11 "break" (breaks when pole shaft is open). |
| 90                 | B12            | 90                      | Auxiliary switch 12 | Indicates breaker open/closed status | Aux switch 12 "common"                                  |
| 91                 | C12            | 91                      |                     |                                      | Aux switch 12 "make" (makes when pole shaft is open).   |
| 92                 | A12            | 92                      |                     |                                      | Aux switch 12 "break" (breaks when pole shaft is open). |
| 93                 | -              | N/A                     | Future              | Future                               | Future                                                  |
| 94                 | -              | N/A                     | Future              | Future                               | Future                                                  |
| 95                 | -              | N/A                     | Future              | Future                               | Future                                                  |
| 96                 | -              | N/A                     | Future              | Future                               | Future                                                  |

\* Jumper wire must be installed between positions 11 and 12 if an external neutral current sensor is not installed.

**Note:** Shaded table cells indicate a position change. Digitrip point positions not listed are no longer used on NRX with PXR.



### IMPORTANT:

**SHADED TABLE CELLS INDICATE A POSITION CHANGE. DIGITRIP POINT POSITIONS NOT LISTED ARE NO LONGER USED ON NRX WITH PXR.**

## Section 2: Removing drawout secondary terminal blocks

### **⚠ IMPORTANT:**

**KEEP IN MIND THAT SECONDARY TERMINAL BLOCKS ASSOCIATED WITH DRAWOUT CIRCUIT BREAKERS ARE DIN RAIL MOUNTED ON THE BREAKER'S DRAWOUT CASSETTE (FIGURE 2). ACCESSORY SECONDARY PLUGS PLUG INTO A SECONDARY PLUG HOUSING MOUNTED ON THE TOP FRONT OF THE CIRCUIT BREAKER. AS SUCH, SECONDARY CONNECTIONS ARE AUTOMATICALLY MADE OR DISCONNECTED DURING THE LEVERING (RACKING) PROCESS AS THE SECONDARY PLUG HOUSING ON THE BREAKER ENGAGES OR DISENGAGES THE SECONDARY TERMINAL BLOCKS MOUNTED ON THE DRAWOUT CASSETTE. FOR THIS REASON, ACCESSORY SECONDARY PLUGS DO NOT HAVE TO BE UNPLUGGED TO ADD OR REMOVE TERMINAL BLOCKS.**

**Note:** A number of graphics in this instruction leaflet use the NF frame cassette for illustrative purposes only. The RF frame cassette is handled in a similar fashion.

**Step 1.** Become familiar with the drawout terminal block (see Figures 2 and 3) and the cassette's DIN rail mounting location.

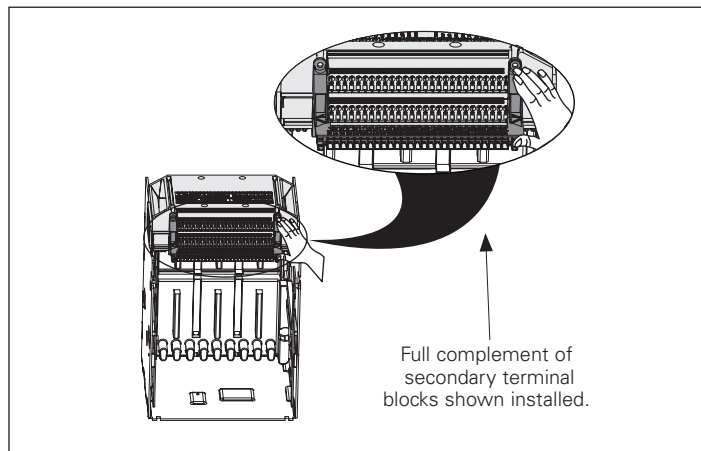


Figure 2. Cassette mounted terminal blocks (NF frame).

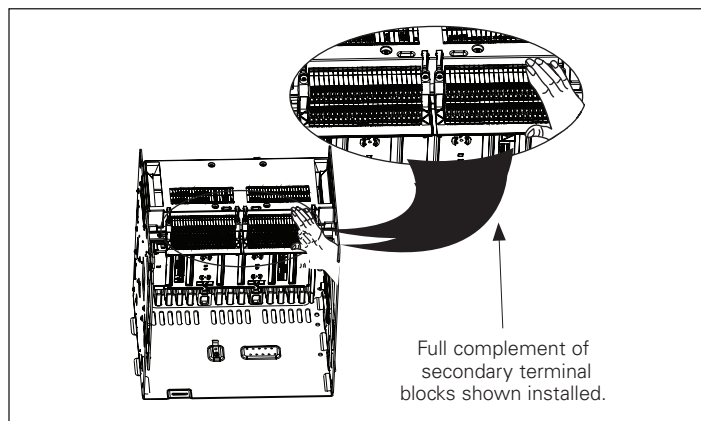


Figure 3. Cassette mounted terminal blocks (RF frame).

In addition, a terminal block alignment bracket is bolted in place to provide for proper alignment and separation of each individual terminal block during the levering (racking) process. Two alignment brackets are used with the RF frame cassette since two cradles are required to accommodate the additional terminal blocks (see Figures 4 and 5).

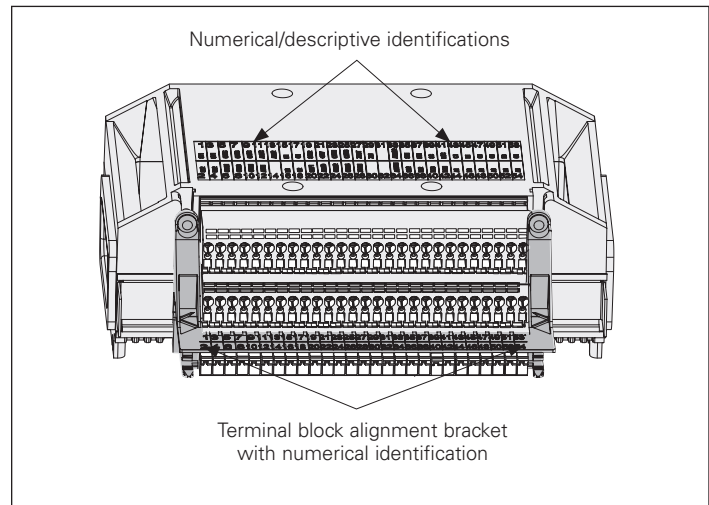


Figure 4. Installed terminal block alignment brackets (NF frame).

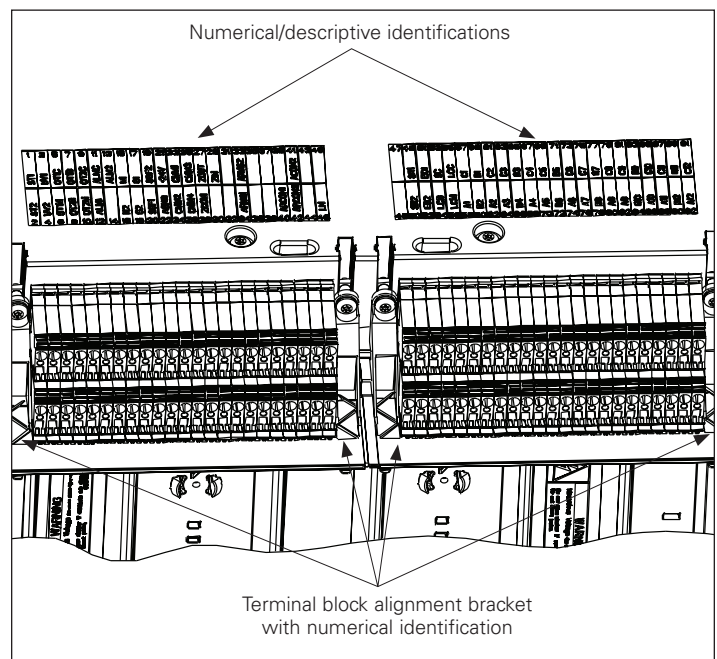
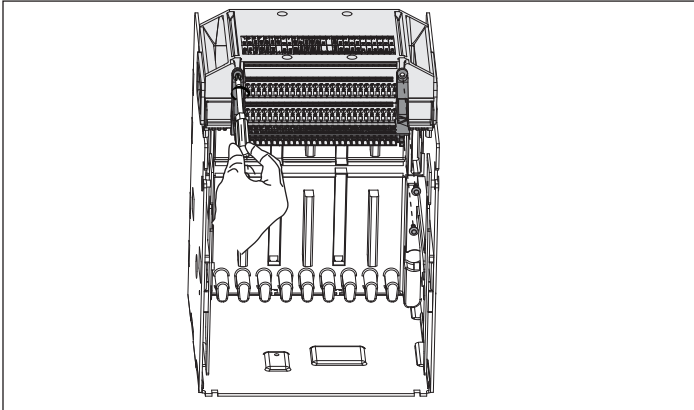


Figure 5. Installed terminal block alignment brackets (RF frame).

### **⚠ IMPORTANT:**

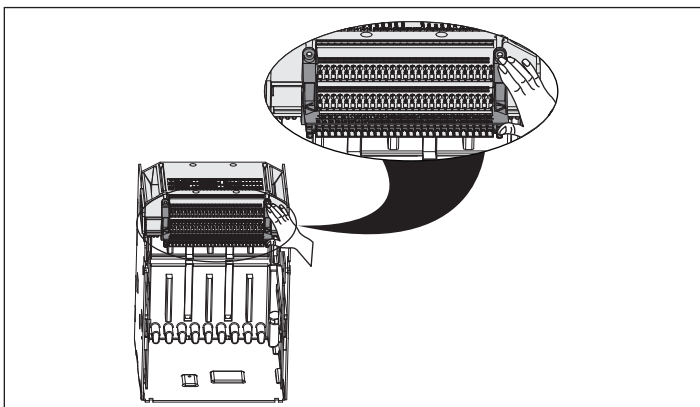
**SOME CONTROL WIRE ROUTING CHANGED BETWEEN DESIGNS. AS YOU REMOVE THE SECONDARY TERMINALS, MARK/LABEL THE WIRES CAREFULLY FOR FUTURE REFERENCE. SEE TABLE 2 IN SECTION 1.**

**Step 2.** Use a #2 Phillips head screwdriver to remove the four mounting screws holding the terminal block alignment bracket in place.



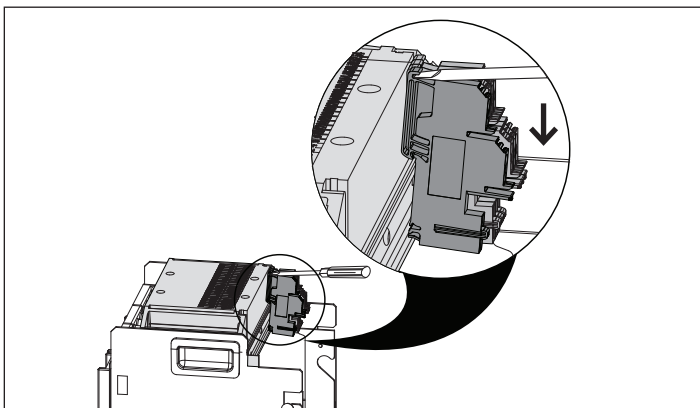
**Figure 6. Removing the alignment bracket mount screws (NF frame).**

**Step 3.** Carefully slide the alignment bracket out from between any mounted terminal blocks and discard it and its original mounting hardware.



**Figure 7. The terminal block alignment bracket (NF frame).**

**Step 4.** Remove any terminal block by inserting a small screwdriver (1/8" / 3 mm) in the recessed area in the top front of the terminal block as shown (see Figure 8), and gently pry down to release and remove the block from the DIN rail.

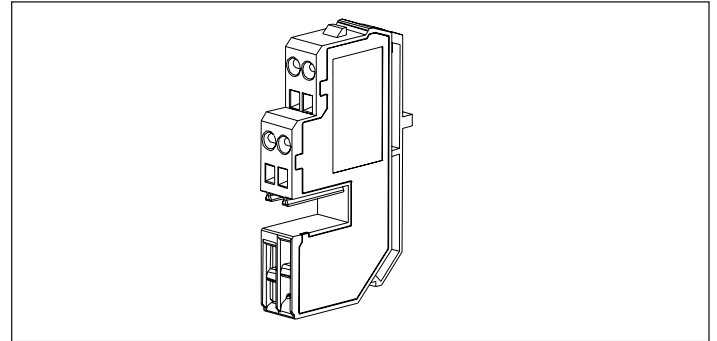


**Figure 8. Removing the terminal blocks (NF frame).**

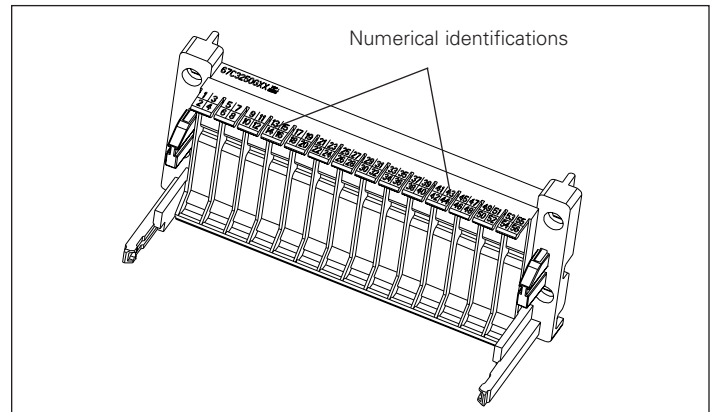
**Step 5.** Repeat Step 4 until all Digitrip secondary terminal blocks are removed.

### Section 3: Installing PXR (upgraded) drawout secondary terminal blocks

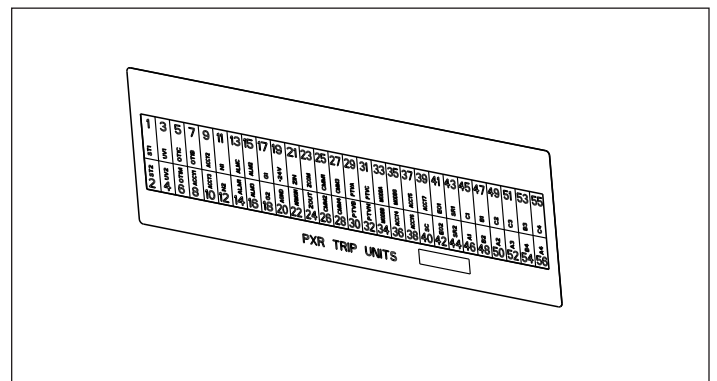
**Step 1.** Become familiar with the drawout terminal block (see Figure 9), the terminal block mounting bracket (see Figure 10), and the cassette secondary over label (Figure 11).



**Figure 9. Drawout terminal block.**



**Figure 10. Drawout terminal block mounting bracket.**

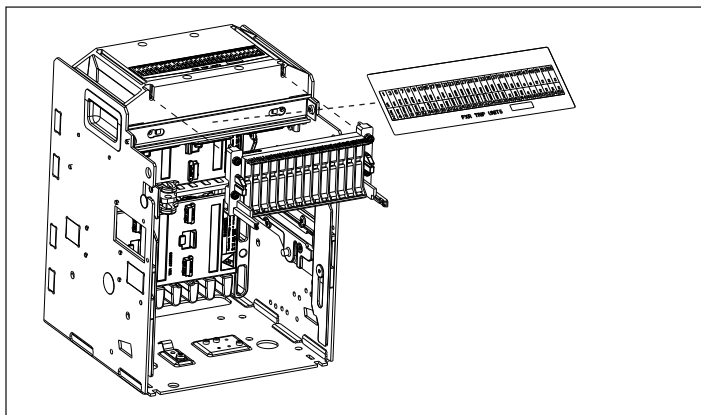


**Figure 11. Cassette secondary over label.**

The drawout terminal block and alignment bracket(s) for circuit breakers with PXR operate similarly to the previous parts in the drawout secondary kit for circuit breakers with Digitrip. Drawout terminal block brackets are supplied as part of the cassette and have etched numerical identifications. All of these identifications match the identifications on the breaker's secondary plug housing to ensure accurate terminal block placement.

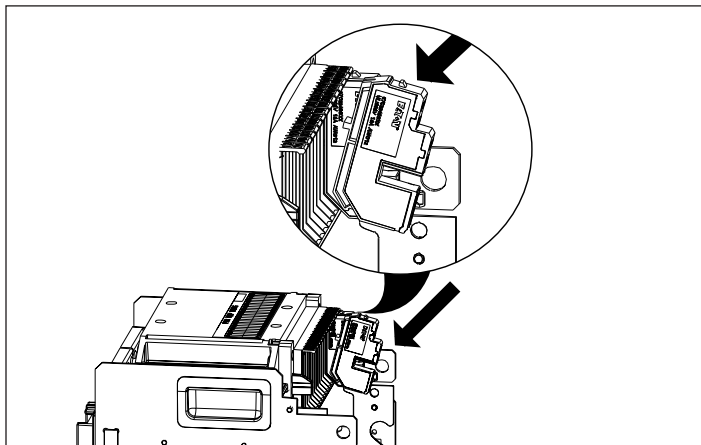
**Step 2.** Install the terminal block mounting bracket(s) **(B)** onto the arc hood using a #2 Phillips head screwdriver. Place the cassette secondary over label **(E)** on top of the Digitrip secondary markings "molded in" to the arc hood. Align the label such that PXR markings line up with the locations on the terminal block mounting bracket.

**Note:** On the RF Frame, 2 over labels will be needed to cover the "molded in" markings on the arc hood.



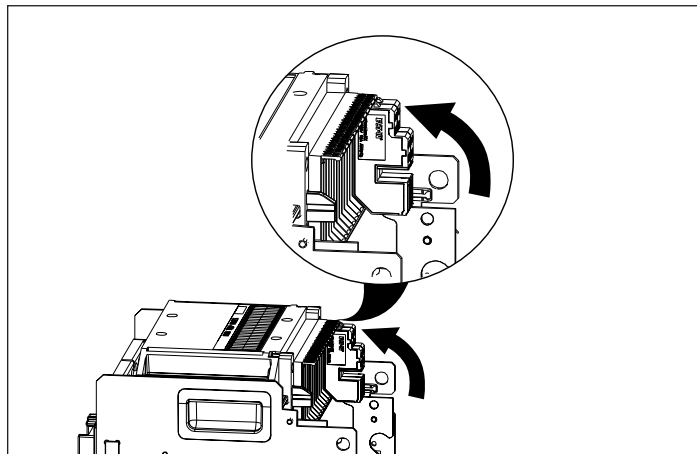
**Figure 12. Terminal block mounting bracket and cassette secondary over label installation.**

**Step 3.** Connect the bottom part of the terminal block **(A)** to the lower part of the mounting bracket. Ensure the terminal block is positioned accurately.



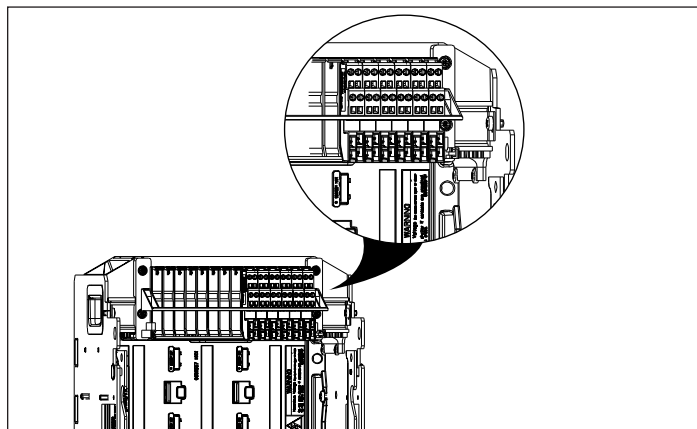
**Figure 13. Connecting a terminal block (NF frame).**

**Step 4.** Snap the top part of the terminal block onto the upper part of the mounting bracket. Ensure the terminal block is still positioned accurately and securely.



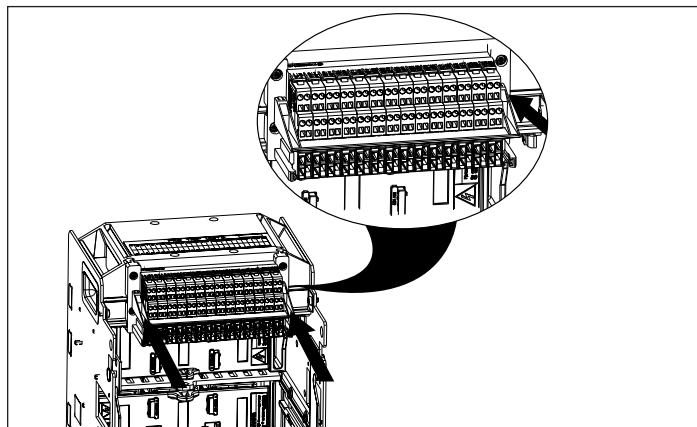
**Figure 14. Snapping a terminal block into place (NF frame).**

**Step 5.** Repeat Steps 3 and 4 until all terminal blocks are mounted, and check to ensure they are positioned in the correct locations. A small number of installed terminal blocks would look as shown in Figure 15.



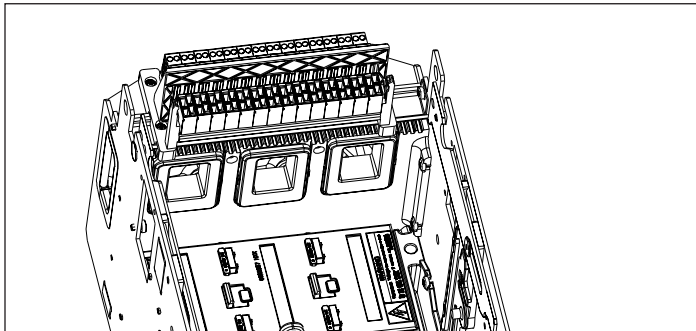
**Figure 15. Breaker with some terminal blocks installed (NF frame).**

**Step 6.** Push the terminal block alignment bracket **(C)** over the posts located on the terminal block mounting bracket. Ensure the alignment bracket is fully seated.



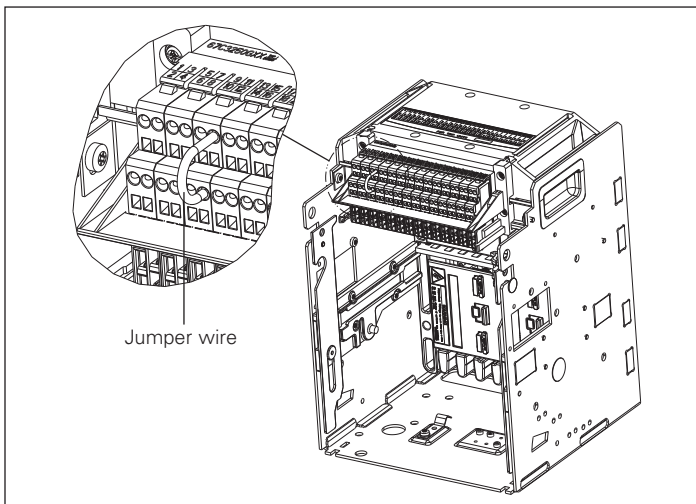
**Figure 16. Installing the terminal block alignment bracket (NF frame).**

**Step 7.** Once the terminal block alignment bracket is in place, inspect it from the bottom to ensure that the teeth on the bracket separate each individual terminal block. Only one installed terminal block should be visible between two teeth when the alignment bracket is properly positioned.



**Figure 17. Inspecting the alignment bracket (NF frame).**

**Step 8.** Install the provided jumper wire (D) between secondary terminal positions 11 (N1) and 12 (N2). If an external neutral current transformer is used with the cassette, then this step may be omitted and the jumper wire discarded.



**Figure 18. Installing the jumper wire (not needed in all cases) (NF frame).**

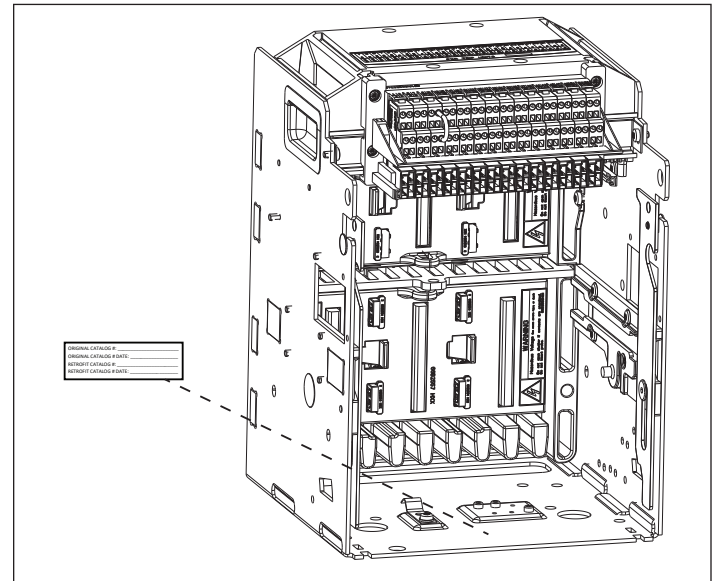
**Step 9.** Since the cassette is now upgraded for use with the PXR trip unit, the cassette catalog # has changed. Please refer to Table 3 for details on the catalog number changes with the secondary terminal upgrade. A label (F) is provided to cover up the old cassette catalog number, replacing it with a new catalog # designation. Fill in the blank fields on the provided label (listed below).

- ORIGINAL CATALOG #;
- ORIGINAL CATALOG # DATE;
- RETROFIT CATALOG #; and
- RETROFIT CATALOG # DATE.

**Table 3. Cassette catalog # cross reference.**

| Digitrip CAT # | PXR CAT # |
|----------------|-----------|
| NC             | NA        |
| NM or NE       | NG        |
| NX             | NY        |
| RE             | RG        |
| IZMX..         | IZMX...-1 |

**Note:** There are two styles of the cassette catalog #'s. For the catalog # beginning with N or R, character "2" is the only character that changes when the cassette is upgraded for PXR. For the catalog # starting with IZMX, the original catalog # remains the same but, a "-1" is added to the end of the entire catalog number.



**Figure 19. Installing the cassette catalog # over label.**

**Step 10.** Secondary terminal installation is complete. Refer to Table 2 to find the updated location of control points and begin rewiring.

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