## 

## N -Series

Hydraulic-Magnetic Circuit Breaker

## PRODUCT WEBPAGE

request sample, configure part, watch video


## Low Profile <br> Datacom/Telecom Applications

The N -Series is a full-featured hydraulic-magnetic circuit breaker packaged in an innovative low profile design to meet the smaller size requirements of datacom/telecom power distribution units and rack systems. Its features include easy access line and load terminals with UL 489 compliant sliding terminal barriers, an optional current transformer capable of sensing current down to a level of $1 \%$, and a patented flush rocker actuator with push-toreset guard to protect against inadvertent actuation. The N -Series is available as a one or two pole configuration with ratings from 1 to 30 amps , up to 277VAC for one pole or 120/240VAC for two poles with a max IC of 22,000 amps.

1-2<br>1-30<br>120/240<br>Poles<br>Amps<br>vac

## Typical Applications

## Design Features

CURRENT TRANSFORMER
Remote current sensing via Molex ${ }^{\circledR}$ connector

UPPER ARC RUNNER
Optional, for 277 VAC rated breakers

GRIDS (5x)
Arc deionizing splitter plates that increase arc voltage for quick interrupt


TERMINAL
Allows for easy hook-up of wires on both sides of the breaker

LOWER ARC RUNNER
Motivates arc off of the stationary contact

SLIDING TERMINAL BARRIERS


## Tech Specs

## Electrical



## Mechanical

| Current Ratings | 10,000 "On-Off" operations @ 6 per <br> minute; with rated current \& voltage |
| :--- | :--- |
| Trip Free | Trips on overload even when <br> actuator is forcibly held in the "On" <br> position |
| Trip Indication | The operating actuator moves <br> positively to the "Off" position <br> when an overload causes the <br> breaker to trip |

## Environmental

| Environmental | MIL-PRF-55629 and MIL-STD-202G |
| :---: | :---: |
| Operating Temp. | $-40^{\circ} \mathrm{C}$ to $+85^{\circ} \mathrm{C}$ |
| Vibration | Withstands $0.06^{\prime \prime}$ excursion from $10-55 \mathrm{~Hz}$ and $10 \mathrm{Gs} 55-500 \mathrm{~Hz}$ at rated current per MIL-PRF-55629 and MIL-STD-202G, Method 204D, Test Condition A. Instantaneous and ultra-short curves tested at $90 \%$ of rated current |
| Shock | MWithstands 50 Gs, 6 ms saw tooth while carrying rated current per MIL-PRF-55629 and MIL-STD-202G, Method 213B, test condition "I". Instantaneous and ultra short curves tested at $90 \%$ of rated current |
| Thermal Shock | MIL-PRF-55629 and MIL-STD-202G, Method 107G, Condition A (5-cycles at $-55^{\circ} \mathrm{C}$ to $+25^{\circ} \mathrm{C}$ to $+85^{\circ} \mathrm{C}$ to $+25^{\circ} \mathrm{C}$ |
| Moisture Resistance | MIL-PRF-55629 and MIL-STD-202G, Method 106G, i.e., Ten 24-hour cycles at $+25^{\circ} \mathrm{C}$ to $+65^{\circ} \mathrm{C}, 80-98 \% \mathrm{RH}$ |
| Salt Spray | Method 101 , Condition A (90-95\% RH @ 5\% NaCl Solution, 96hrs) |

## Physical

| Number of Poles | 1-2 poles |
| :--- | :--- |
| Termination | Wire ready and touch proof wire <br> clamp (See Figure 1). Accepts up <br> to (2) \#l0 AWG wires per terminal. <br> Designed for use with solid, <br> stranded and flexible stranded <br> wires, with or without ferrule or pin <br> terminals. Also accepts straight fork <br> and flanged fork terminals. |
| Termination Torque | 15-20 in-llbs (Line \& Load terminals) |
| Termination Barrier | Integral sliding barrier to comply <br> with spacing requirements <br> (See figure 1) |
| Mounting | Threaded Insert: \#6-32 UNC-2B, or <br> M3X0.5-6H B ISO |
| Insert Termination | 7-9 in-Ibs <br> Torque |
| Actuator | Rocker, with or without guard <br> (See figures l, 2, and 4) |
| Internal Circuit Config. | Series Trip |
| Materials | Housing - Glass Filled Polyester <br> Rocker - Nylon <br> Line/Load Terminals - Copper Alloy; <br> Bright Acid Tin Plated |
| ~107 grams (~3.76 ounces) per pole |  |
| Weights | Housing - Black Rocker - Several <br> (See ordering scheme for colors) |
| Standard Color |  |

3. 

*Manufacturer reserves the right to change product specification without prior notice.

## Tech Specs

## Electrical Tables

Table A: Voltage and Current Ratings

| Electrical Ratings |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Voltage | Current (Amps) | Number of Poles | Interrupt Capacity (Amps) |  |  |  |  |  |
|  |  |  | UL 489 |  | EN60947-2 |  |  |  |
|  |  |  | 1-20 A | $21-30 \mathrm{~A}$ | 1-20 A |  | 21-30 A |  |
|  |  |  |  |  | Icu | Ics | Icu | Ics |
| 120/240 VAC | 1-30 | 2 | 22000 | 5000 | 10000 | 5000 | 10000 | 5000 |
| 240 VAC | 1-20 | 1 | 10000 | N/A | 10000 | 5000 | 5000 | 5000 |
| 277 VAC | 1-20 | 1 | 10000 | N/A | N/A |  | N/A |  |

Electrical: Impedance / Resistance



| CURRENT <br> (AMPS) | TOLERANCE <br> $(\%)$ |
| :---: | :---: |
| $0.10-5.0$ | $+/-15$ |
| $5.1-30.0$ | $+/-25$ |

## Agency Approvals

UL489, cUL, TUV EN60947-2

## Ordering Scheme



## 1. SERIES

N N -Series Circuit Breaker

## 2. ACTUATOR

1 Single Color Low Profile Rocker, Vertical Legend
2 Single Color Low Profile Rocker, Horizontal Legend
3 Single Color Push To Reset Low Profile Rocker, Vertical Legend
4 Single Color Push To Reset Low Profile Rocker, Horizontal Legend

## 3. POLES

One 2 Two

## 4. CIRCUIT

B Series Trip (Current)

## 5. CURRENT METERING

0 Without Current Transformer
$1^{1}$ Integrated Current Transformer, $+/-2 \%$, 1 per unit
2 Integrated Current Transformer, $+/-2 \%$, 1 per pole
3 2,6 Integrated Current Transformer, $+/-1 \%, 1$ per unit
$4^{6}$ Integrated Current Transformer, $+/-1 \%, 1$ per pole

## 6. FREQUENCY \& TIME DELAY

| 21 | $50 / 60 \mathrm{~Hz}$ Ultra Short | $\mathbf{4 2}$ | $50 / 60 \mathrm{~Hz}$ Short, High-inrush |
| :--- | :--- | :--- | :--- |
| $\mathbf{2 2}$ | $50 / 60 \mathrm{~Hz}$ Short | $\mathbf{4 4}$ | $50 / 60 \mathrm{~Hz}$ Medium, High-inrush |
| $\mathbf{2 4}$ | $50 / 60 \mathrm{~Hz}$ Medium | $\mathbf{4 6}$ | $50 / 60 \mathrm{~Hz}$ Long, High-inrush |
| $\mathbf{2 6}$ | $50 / 60 \mathrm{~Hz}$ Long |  |  |

## 7. CURRENT RATING (AMPERES)

| CODE | AMPERES |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $\mathbf{4 1 0}$ | 1.00 | $\mathbf{4 4 0}$ | 4.00 | $\mathbf{4 9 0}$ | 9.00 | 615 | 15.00 |
| 512 | 1.25 | 445 | 4.50 | $\mathbf{4 9 5}$ | 9.50 | 616 | 16.00 |
| $\mathbf{4 1 5}$ | 1.50 | 450 | 5.00 | 610 | 10.00 | 617 | 17.00 |
| 517 | 1.75 | 455 | 5.50 | 710 | 10.50 | 618 | 18.00 |
| $\mathbf{4 2 0}$ | 2.00 | 460 | 6.00 | 611 | 11.00 | 620 | 20.00 |
| $\mathbf{5 2 2}$ | 2.25 | 465 | 6.50 | 711 | 11.50 | 622 | 22.00 |
| $\mathbf{4 2 5}$ | 2.50 | 470 | 7.00 | 612 | 12.00 | 624 | 24.00 |
| $\mathbf{5 2 7}$ | 2.75 | 475 | 7.50 | 712 | 12.50 | 625 | 25.00 |
| $\mathbf{4 3 0}$ | 3.00 | 480 | 8.00 | 613 | 13.00 | 630 | 30.00 |
| $\mathbf{4 3 5}$ | 3.50 | $\mathbf{4 8 5}$ | 8.50 | 614 | 14.00 |  |  |

## 8. TERMINAL

1 Screw Terminal
9. ACTUATOR COLOR \& LEGEND

| Actuator Color | I-O | ON-OFF | Dual | Legend Color |
| :--- | :--- | :--- | :--- | :--- |
| White | A | B | $\mathbf{1}$ | Black |
| Black | C | D | $\mathbf{2}$ | White |
| Red | F | $\mathbf{G}$ | $\mathbf{3}$ | White |
| Green | H | J | $\mathbf{4}$ | White |
| Blue | K | L | $\mathbf{5}$ | White |
| Yellow | M | N | $\mathbf{6}$ | Black |
| Gray | $\mathbf{P}$ | Q | $\mathbf{7}$ | Black |
| Orange | $\mathbf{R}$ | $\mathbf{S}$ | $\mathbf{8}$ | Black |

## 10. MOUNTING

$1 \quad 6-32 \times .195$ inches Threaded Inserts
2 ISO M3 $\times 5 \mathrm{~mm}$ Threaded Inserts

## 11. APPLICATION RATING

```
C 120/240 VAC (2 Pole only)
D 2 240 VAC
F3 277 VAC
```


## 12. AGENCY APPROVAL

A Without Approvals
G UL 489 Listed
U 4 TUV Certified, IEC 60947-2
35 UL 489 Listed, TUV Certified
Notes:
1 On multi pole units one current transformer is supplied on the actuator pole
2 Available up to 20 amps
3 Voltage rating $F$ only available as a 1 pole device at 20 amps maximum
4 TUV approval requires dual (I-O, ON-OFF) markings
5 Approval Code " 3 " requires Dual (I-O, ON-OFF) markings on rocker.
$6+/-1 \%$ tolerance only available when used with $+/-0.1 \%$ tolerance external burden resistor.

Configure Complete Part Number > Browse Standard Parts >

## Dimensional Specs

inches [millimeters]
Figure 1. N -Series 1-Pole Construction


Notes:
1 Tolerance $\pm .020$ [.51] unless otherwise specified.
6.

## Dimensional Specs

inches [millimeters]
Figure 2. $\mathbf{N}$-Series 2-Pole Construction


N -Series 3-Pole Construction


Figure 3. Panel Cutout Details


## Notes:

Tolerance $\pm .020$ [.5ı] unless otherwise specified.

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