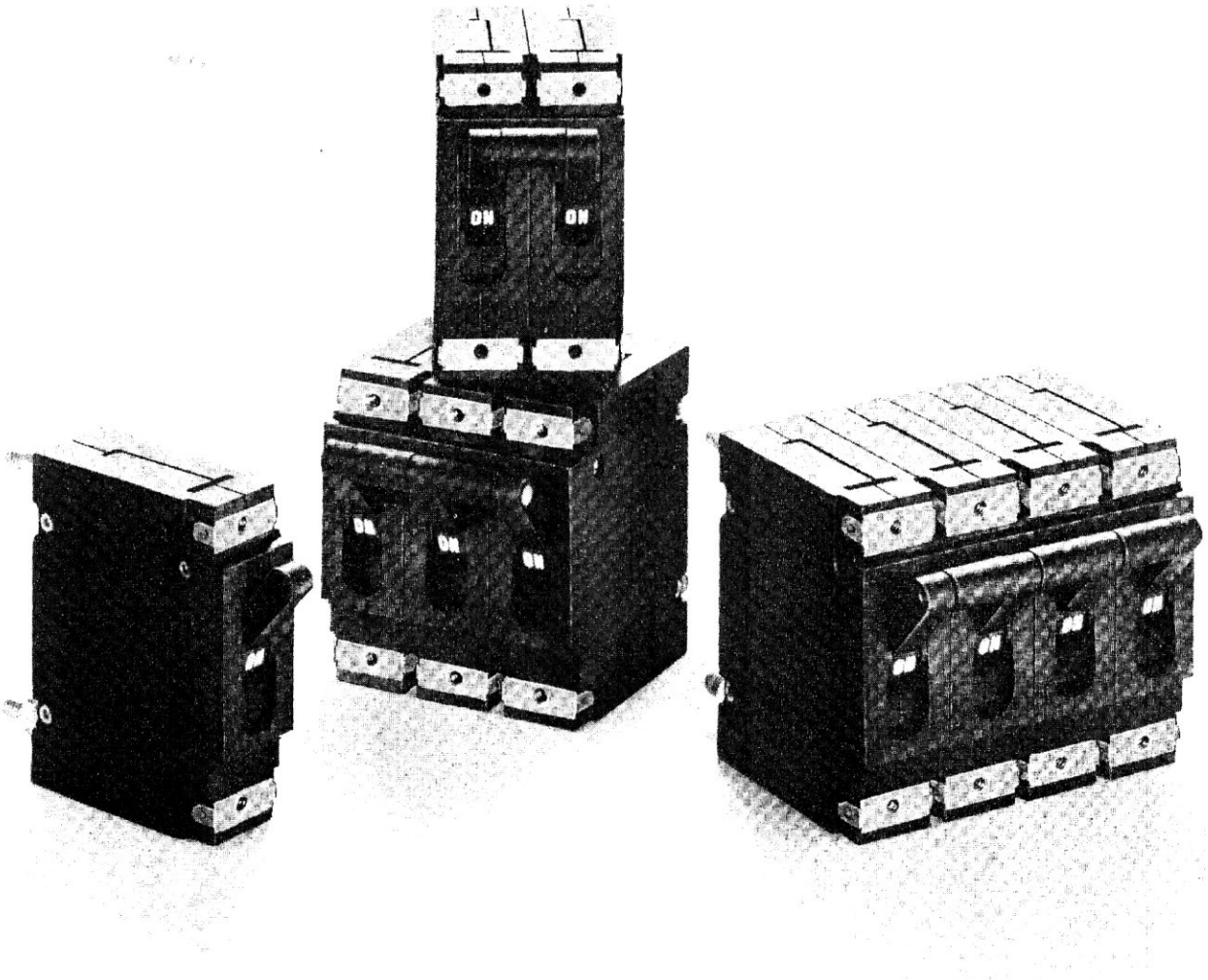
Heinemann®
Circuit Breakers

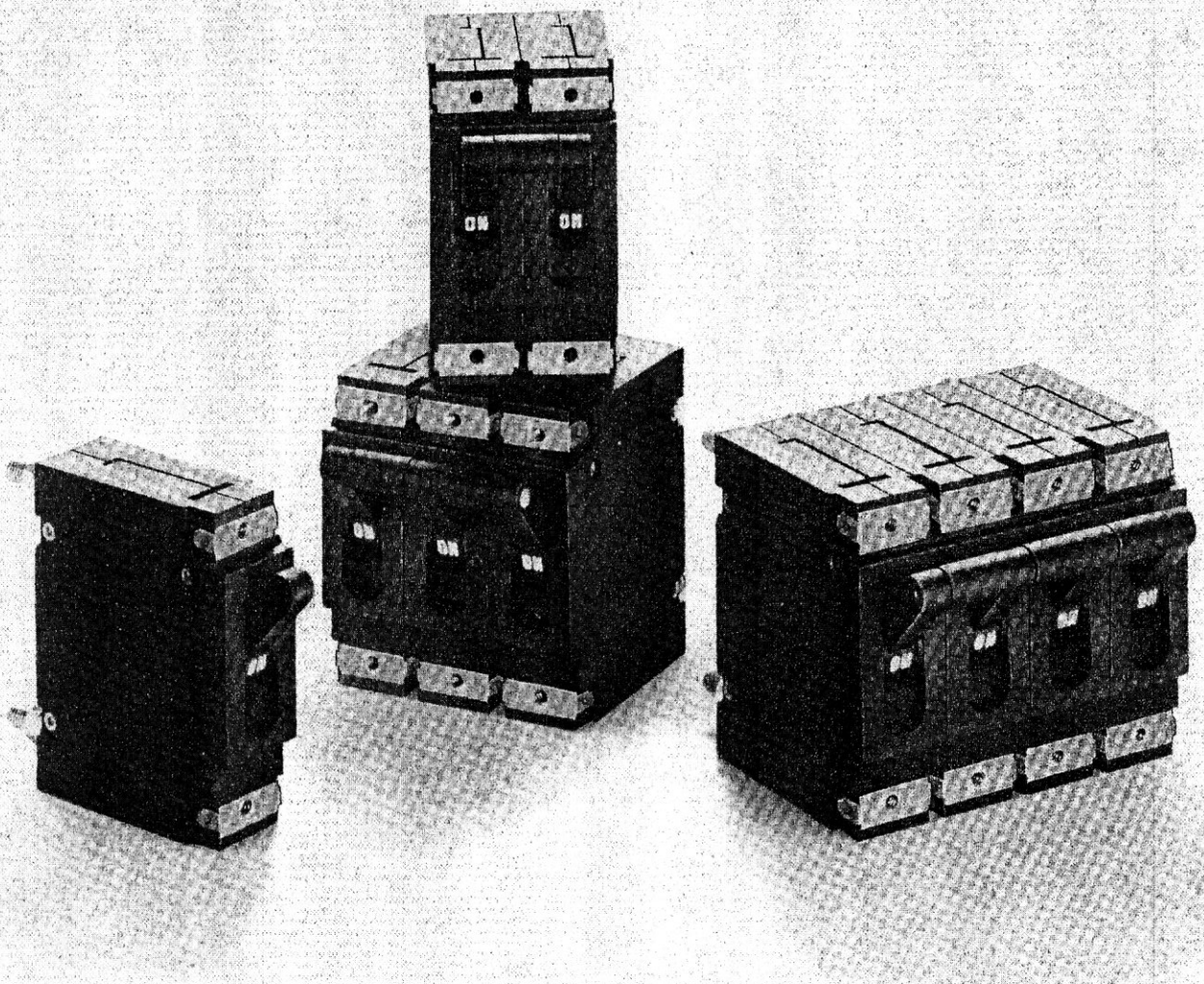
EATON

Series AM

- Available with 1, 2, 3 and 4 poles
- Moisture and fungus resistance as standard features
- Rating: 0.020 to 100A



Bulletin AM



Series AM breakers, available in one-, two-, three- and four-pole models, offer distinct advantages:

- Current range up to 100 A 50/60 Hz, 60 A 400 Hz, 100 A dc
- UL and CSA recognized and listed units available
- Moisture- and fungus-resistance as a standard feature
- Low cost, light weight

UL and CSA recognition

The AM breaker (Models AM1 through AM4) is recognized by Underwriters' Laboratories as a Supplementary Protector per UL Standard UL 1077 (UL File No. E-39309), and certified by the Canadian Standards Association under CSA File No. LR-9646-46. Recognition and certification covers all current ratings from 0.10 to 50 amperes at 250 Vac (50/60 and 400 Hz), at 415 V 50/60 Hz, and 100 amperes at 65 Vdc. Current ratings 0.10 to 30 amperes are UL recognized and CSA certified to 480 V, 50/60 Hz.

Recognition at 415 V and 480 V refers to 3- and 4-pole models used only in a 3-phase wye-connected circuit and backed up with a Heinemann® Series CD3 or CD4 480 V 100 A breaker as group controller, providing an interrupting capacity of 3000 amperes.

When properly installed as original equipment, the combination of Series AM and CD or CF breakers requires no additional protection. Series AM breakers rated at 65 Vdc provide both overcurrent and short-circuit protection where circuit-interrupting capacity does not exceed 5000 amperes.

UL and CSA listed

The AM breaker is Underwriters' Laboratories listed per UL489 as a Special Purpose Branch Circuit Breaker. Consult factory for ratings and availability.

General Specifications

Available ratings

Maximum voltage	Current range (Amp)	Interrupting capacity (Amp)
125 V 50/60 Hz	0.020-60, 70, 100	2000
250 V 50/60 Hz	0.020-100	1000
250 V 400 Hz	0.020-60	1000
65 Vdc	0.020-100	5000

UL-Recognized ratings

Maximum voltage	Current range (Amp)	Interrupting capacity (Amp)
250 V 50/60 Hz	0.1-50	5000*
250 V 50/60 Hz	0.1-100	1000***
277 V 50/60 Hz	0.1-50	5000*
415 V 3ϕ Y 50/60 Hz	0.1-50	3000**
480 V 3 ϕ Y 50/60 Hz	0.1-30	3000**
250 V 400 Hz	0.1-50	1000*
65 Vdc	0.1-100	5000***

* AC units require 4 times rated back-up fusing, 15 A min.
** See details on page 2.
***Units do not require back-up fusing.

UL-listed ratings

Maximum voltage	Current range (Amp)	Interrupting capacity (Amp)
120 V 50/60 Hz	1-50	5000
65 Vdc	1-50	5000

Environmental data

Qualified under MIL-C-55629 as specified below.

Fungus- and moisture-resistance is provided by treating all ferrous parts with a special moisture-resistant finish and by using special springs and inherently fungus-resistant phenolic cases, covers and handles. Tested for moisture-resistance per MIL-STD-202, Method 106; tested for salt-spray resistance per MIL-STD-202, Method 101.

Humidity. Tested in accordance with MIL-STD-202, Method 103, test condition A.

Shock and vibration. Tested for shock in accordance with MIL-STD-202, Method 213, test condition I (100 G's at 6 milliseconds). Tested for vibration in accordance with MIL-STD-202, Method 204: 10 to 500 Hz, 0.06" total excursion on three mutually perpendicular planes. Shock and vibration tests are conducted with breakers carrying full rated current. Shock and vibration specifications apply to time-delay breakers only.

Operating temperature. –40°C to +85°C.

Dielectric strength. Tested in accordance with MIL-STD-202, Method 301: 1500 V at 50/60 or 400 Hz, 1100 Vdc (or twice rating plus 1000 V)

Insulation resistance. 100 megohms minimum at 500 Vdc, per MIL-STD-202, Method 302.

Endurance. 50/60 Hz ac breakers are subjected to an endurance test consisting of 10,000 on/off operations: 6000 at rated current and voltage, 4000 at no load.

Approximate weights: AM1, 3 oz; AM2, 6.5 oz; AM3, 9.5 oz; AM4, 12.5 oz.

Special AM breakers qualified under MIL-C-55629

One- to three-pole Series AM breakers, in current ratings from 0.2 through 50 amperes, specifically built and tested in accordance with the requirements of MIL-C-55629, are available. Consult factory for military part numbers, available approved constructions and other details.

Precise overload protection - with Heinemann hydraulic-magnetic circuit breakers

Heat-induced nuisance tripping eliminated

Heinemann hydraulic-magnetic circuit breakers offer three major advantages over thermal devices:

1. Elimination of nuisance tripping caused by high ambient temperatures in or near the installation. The breaker responds only to current variations, not to temperature change.
2. Assurance that 100% of the rated current will be carried. There is no such assurance with thermal devices, which may fail to carry rated current when subjected to above-normal ambient temperatures. A Heinemann breaker rated at 20 A, for example, will sustain 20 A, even at elevated temperatures. Derating and other forms of temperature compensation are unnecessary.
3. Immediate reset. Since there are no thermal elements, heat build-up is not a factor. Therefore, no "cooling off" period is required after fault interruption.

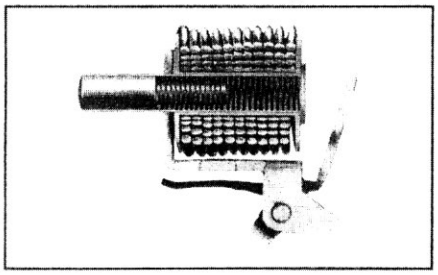
Time delay eliminates breaker tripping due to transient current surges

Elimination of transient current surges as a cause of nuisance tripping is accomplished through the creation of a controlled time delay. In any installation where a power supply or compressor motor is on the line, an inrush of current occurs when the equipment is first turned on. The bigger the equipment, the larger the surge. Although inrush surges are, in fact, transient overloads, they usually pose no threat of damage to the line or the equipment. So, it is not necessary or even desirable to interrupt the power when they occur.

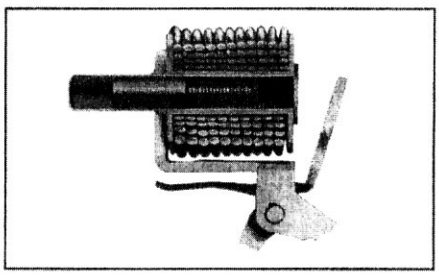
The hydraulically-controlled time-delay mechanism of a Heinemann breaker eliminates nuisance tripping without lessening overload protection. The delay is inversely proportional to the overload; response is quicker on large overloads, where greater potential danger exists, and slower on small overloads. Except in special high-inrush models, heavy overload and short-circuit currents of greater than 10 times the breaker's rating provide instantaneous response. (An instantaneous-trip breaker is available for use on, for example, modern medical and communication equipment, which can not tolerate even brief overloads.)

For added protection, the time-delay is self-adjusting to ambient temperature conditions. At high ambients, where the overload tolerance of most circuits is lowered, the viscosity of the special fluid in the breaker's dashpot is lessened, and the time-delay response is thereby shortened. At low temperatures, the response is correspondingly longer to allow for cold-equipment startups.

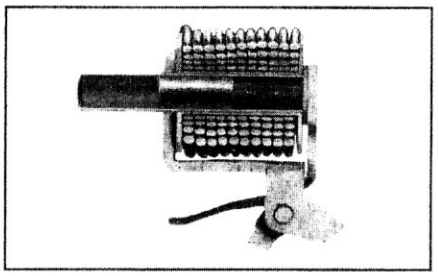
The hydraulic-magnetic principle (how the breaker works)



1. The Heinemann hydraulic-magnetic circuit breaker operates on load-current-produced magnetic-flux variations in a solenoid. The coil is wound around a hermetically-sealed, non-magnetic tube containing a spring-loaded, movable iron core in a special-liquid fill. With the load current either at or below the breaker's nominal rating, the magnetic flux is of insufficient strength to move the core, so it remains at the end of the tube opposite the armature.



2. With excessive current, the magnetic-flux force increases, pulling the iron core toward the armature end of the tube. This core insertion reduces the reluctance of the magnetic circuit and further increases the strength of the magnetic field. The special liquid regulates the core's speed of travel, creating a controlled trip delay that is inversely proportional to the magnitude of the overload. If the overload subsides before the core reaches the pole piece, the core returns to its original position, and the breaker does not trip. (For non-delay applications, the breaker is modified to omit the intentional delay.)



3. When the magnetic flux reaches a predetermined value, the armature is attracted to the pole piece and the breaker trips. (The breaker may trip before the core reaches the pole piece if the critical flux value is achieved first.) On very heavy overloads or short circuits, the flux produced by the coil alone, regardless of core position, is sufficient to pull in the armature. This circuit interruption occurs with no intentional delay – a highly desirable response characteristic.

How to order standard Series AM circuit breakers

Note: Standard catalog number must have 18 digits including dashes. See How To Order non-standard when all poles of a multipole unit are not identical.

AM3–	–A3–	A–	0015	–02	E
Step 1	Step 2a & b	Step 3	Step 4	Step 5	Step 6

Step 1
AM3–

Series prefix (AM) and number of poles include a dash as shown.

Step 2a Table A
–A3–

Code	Frequency	Terminal Location	Maximum Voltage
A	60 Hz	Back	250
B	dc (Note 5)	Back	65
D	60 Hz/DC	Back	250 AC/ 65 DC

Add a dash before the code letter.

Step 2b Table B
–A3–

Inrush Code N/A	Std.	18x	25x	Internal Circuit Construction
0				Switch only (no coil)
	2	9	39	*Series trip with SPDT aux. switch
	3	8	38	Series trip
	5			Shunt trip (current rated)
	6			Relay trip (current rated)

Single digit code – Add a dash after code (ex. 3–)
Double digit code – Move frequency code selected in Step 2a (Table A) to the left, add a dash after construction code (ex. AM1 – A38 –)
Consult factory for non-standard constructions available.
*On multipole units one aux. switch is supplied. It is located in the left pole when viewed from the front of the breaker. See page 6 for non-standard part number when additional switches or pole locations are required.

Step 3 Table C
A–

Suffix code for UL Applications
A—250 VAC, 50/60 Hz; 65 VDC 240 VAC, 400 HZ
--Non UL (--)
DU—120 VAC, 50/60 Hz; 65 VDC UL listed (UL 489)
Single digit codes are followed by a dash as shown.
See page 3 for UL-Recognized ratings.

Step 4 Table D
0015

Standard Current Ratings

Current Code	Ampere	Current Code	Ampere
0R10	0.10	0010	10.00
0R25	0.25	0015	15.00
0R50	0.50	0020	20.00
0R75	0.75	0025	25.00
0001	1.00	0030	30.00
02R5	2.50	0035	35.00
0005	5.00	0040	40.00
07R5	7.50	0050	50.00

For other current ratings consult factory.

Step 5 Table E
–02

Time Delay Curves

Code	Inrush Codes Std.	18x	25x
–0P	N/A		
–01	x		
–02	x		
–03	x		
–10		x	
–20		x	
–30		x	
251			x
252			x
253			x

See time delay curves on pages 8-10 for required delay.

Step 6 Table F
E

Code	Voltage Rating
E	0-250 VAC
N	0-65 VDC

How to order non-standard (non-MIL-spec) Series AM breakers*

*Non-standard part numbers may require factory assigned part number.

AM3– –A2A3A3 –A –40 –02
Step 1 Step 2a & b Step 3 Step 4 Step 5

Step 1
AM3–

Series prefix and number of poles

Step 2a Table A
–A2A3A3

Voltage, frequency and internal circuit for first pole on left as viewed from front of panel, or for all poles if identical, from Tables A and B.

Code	Frequency	Terminal Location	Maximum Voltage
A	60 Hz	Back	250
A	60 Hz	Back	480
A	60 Hz	Back	415
B	dc (Note 5)	Back	65
C	400 Hz	Back	250
D	60 Hz/DC	Back	250 AC/ 65 DC

Step 2b Table B
–A2A3A3

Repeat Step 2 for second and third poles and subsequent poles if different from first.

Circuit Codes Inrush N/A	8x	18x	25x	Internal Circuit Construction (For more information on internal circuits see Bulletin 8101 "Quick Guide to Overcurrent Protection")
0				Switch (no overload coil)
	2	9	39	Series trip with standard enclosed SPDT aux. switch (Note 8)
	3	8	38	Series trip (Note 8)
	5			Shunt/tap (Note 6)
	6			Relay-trip
12				Switch with standard enclosed SPDT aux. switch
	15	25		Du-Con with Shunt/Tap voltage coil (Note 6) (Note8)
	16	26		Du-Con with relay-trip voltage coil (Note8)

Notes:
1. **Specify voltage-rated coils separately.** Example: Catalog Number AM1-A5. Voltage coil, intermittent-duty, trips on 250 V 50/60 Hz Ac. Curve F.
2. **Relay-trip poles.** Always specify load values for coil and contacts separately. Example: Catalog Number AM1-B6. Coil: 5 amp, 65 Vdc, Curve 3, contacts: 10 amp, 250 V 50/60 Hz.
3. **UL/CSA models** are labeledwith the UL/CSA-recognized voltage (page 3). The catalog number of the breaker label will contain a special suffix indicating UL/CSA recognition. See Table C.
4. If voltage is rectifier-produced dc, furnish separately, (a) Full- or half-wave rectification, (b) Number of phases, (c) Filtered or unfiltered. If filtered, give ripple factor or percent filter factor.
5. Positive polarity should always be connected to the terminal marked "Line."
6. Voltage rated shunt/tap coils provide tripping on Line voltage.
7. Du-Con voltage coils require 30 VA minimum power to trip instantaneously.
8. 8-40 amp max current rating.

Step 3 Table C
–A

UL Codes		
A	250 VAC	50/60 Hz
L	277 VAC	50/60 Hz
AD	415 VAC	50/60 Hz
AB	480 VAC	50/60 Hz
A	250 VAC	400 Hz
A	65 VDC	
DU	120 VAC 50/60 Hz; 65 VDC UL listed	

Step 4 Table D
–40

Standard Ampere Ratings			
0.10	2.5	20	50
0.25	5	25	60
0.50	7.5	30	70
0.75	10	35	100
1	15	40	

Other non-listed ratings are available.
Consult factory for availability and lead times.

Step 5 Table E
–02

Time Delay Curves Code	Inrush Codes Std.	18x	25x
–0P	N/A		
–01	x		
–02	x		
–03	x		
–10		x	
–20		x	
–30		x	
251			x
252			x
253			x

See time delay curves on pages 8-10 for required delay.

Tripping specifications

Time-delay-trip ranges
Breakers (in standard wall-mount position) shall hold 100% rated load.

60 Hz and DC
Breakers may trip between 101% and 125% rated load; must trip at 125% rated load and above, as shown on time-delay curve selected. Breakers for 60 Hz/DC (Code D) have a must-trip value of 135% of rated load.

400 Hz
Breakers may trip between 101% and 150%; must trip at 150% and above.

Non-time delay trip ranges
Breakers have no deliberately imposed delay and will trip instantaneously as specified.

Breakers shall hold 100% load.

Breakers for 50/60 Hz or dc service may trip between 101% and 125% rated load; must trip at 125% rated load and above. Breakers for 60 Hz/DC (Code D) have a must-trip value of 135% of rated load

Breakers for 400 Hz service may trip between 101% and 150% rated load; must trip at 150% rated load and above.

Note: All the curves shown describe breaker response with no pre-loading. (Breakers do not carry current prior to application of overload for calibration testing.) Curves are plotted at an ambient temperature of 77°F (25°C), with breakers in the standard wall-mount position. For nonstandard mounting, consult factory.

Time delay curve selection

1. Determine required frequency.

2. Determine required high inrush tolerance (tolerance to starting surges caused by high-reactance loads such as ferro-resonant power supplies which may last up to 8 milliseconds). Select lowest high inrush tolerance compatible with application.

3. Determine required curve characteristics based on application:

Long time delay curve – Motor starting, locked rotor tolerance, general purpose applications.

Medium time delay curve – Transformer protection, capacitor loads, special incandescent lamp loads, general purpose applications (most widely used curve).

Short time delay curve – Electronic equipment.

Instantaneous curve (no deliberate time delay provided) – Unusual circumstances in electronic equipment and other special applications.

4. Select applicable curve from table below:

Frequency			High-Inrush Tolerance*			Curve Characteristics				Curve No.
50/60 Hz	400 Hz	DC	8x	18x	25x	Long	Medium	Short	Inst.	
	•		•			•				1
•	•	•	•				•			2
•	•	•	•					•		3
•		•		•		•				10
•		•		•			•			20
•		•		•				•		30
•		•			•	•				251
•		•			•		•			252
•		•			•			•		253
•	•	•							•	P

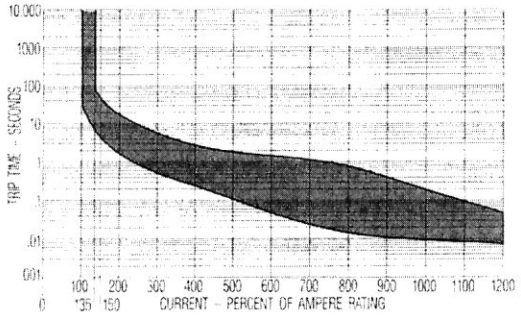
*Multiples of Breaker "Must Hold" Rating

Nominal DCR and Impedance

Current Rating Amps.	DC Delays (Resistance in Ohms) Curves P-2-3 10-20-30	251-252-253	DuCon 2-3-20-30	60 Hz Delays (Impedance in Ohms) Curves P-2-3 10-20-30	251-252-253	DuCon 2-3-20-30	400 Hz Delays (Impedance in Ohms) Curves P-1-2-3
0.05	447	730	730	418	836	809	744
0.10	127	182	174	139	176	186	200
0.5	4.12	7.0	6.4	3.99	7.3	6.4	9.36
1	.86	1.65	1.67	.917	1.580	1.780	1.74
5	.050	.069	.069	.051	.073	.068	.074
10	.014	.0181	.0177	.016	.0172	.0158	.021
15	.0059	.0164	.0146	.0060	.0162	.0155	.0101
20	.0045	.0068	.0067	.0046	.0067	.0068	.0060
30	.0031	.0028	.0028	.0031	.0031	.0029	.0037
50	.0017	.0020	.0019	.0017	.0020	.0019	.0024
70	.0007			.0007			
100	.0006			.0006			

DCR and impedance based on 100% rated current applied and stabilized a minimum of one hour.
Tolerance: 0.02 amps to 2.5 amps, ±20%; 2.6 amps to 20 amps, ±25%; 21 amps to 100 amps, ±50%.

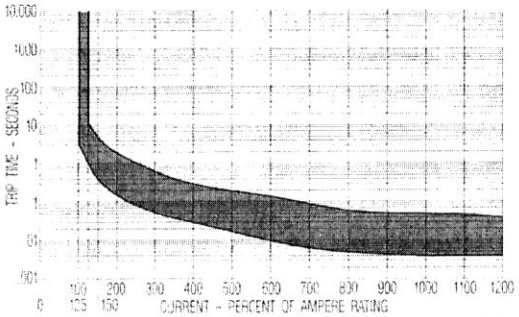
Curve 2, dc 50/60 Hz
Medium Delay



Percent of rated current vs. trip delay at 25° C; breakers not preloaded

% Overload	100%	135%	200%	400%	600%	800%	1000%
Delay Maximum (seconds)	no trip	80	18	2.8	1.5	.8	.2
Delay Minimum (seconds)	no trip	7	1.7	.25	.05	.015	.01

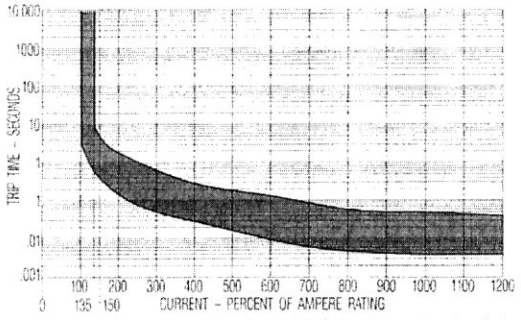
Curve 3, 50/60 Hz
Short Delay



Percent of rated current vs. trip delay at 25° C; breakers not preloaded

% Overload	100%	125%	200%	400%	600%	800%	1000%
Delay Maximum (seconds)	no trip	12	1.9	.3	14	.06	.05
Delay Minimum (seconds)	no trip	1	.15	.03	.01	.005	.004

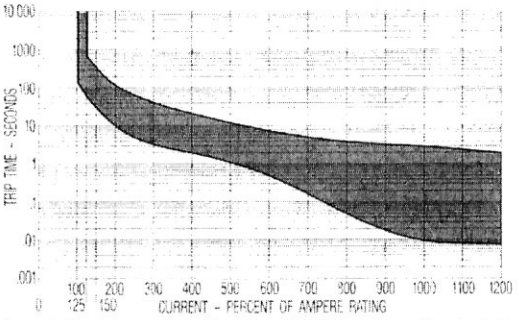
Curve 3, dc 50/60 Hz
Short Delay



Percent of rated current vs. trip delay at 25° C; breakers not preloaded

% Overload	100%	135%	200%	400%	600%	800%	1000%
Delay Maximum (seconds)	no trip	9	1.9	.3	14	.06	.05
Delay Minimum (seconds)	no trip	.6	.15	.03	.01	.005	.004

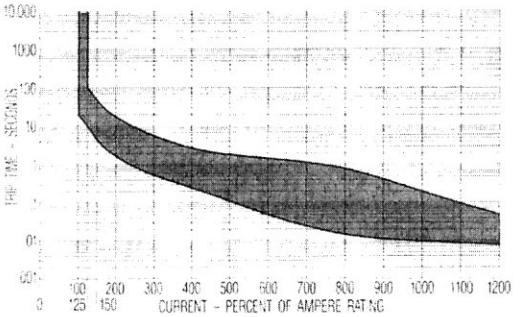
Curve 10, 50/60 Hz
Long Delay



Percent of rated current vs. trip delay at 25° C; breakers not preloaded

% Overload	100%	125%	200%	400%	600%	800%	1000%
Delay Maximum (seconds)	no trip	700	120	22	8	4	3
Delay Minimum (seconds)	no trip	60	10	2	.5	.05	.01

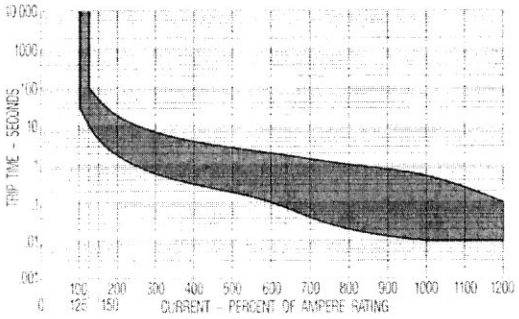
Curve 2, 50/60 Hz
Medium Delay



Percent of rated current vs. trip delay at 25° C; breakers not preloaded

% Overload	100%	125%	200%	400%	600%	800%	1000%
Delay Maximum (seconds)	no trip	110	18	2.8	1.5	.8	.2
Delay Minimum (seconds)	no trip	10	1.7	.25	.05	.015	.01

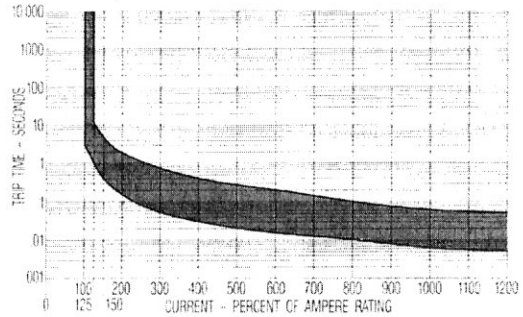
Curve 20, 50/60 Hz
Medium Delay



Percent of rated current vs. trip delay at 25° C; breakers not preloaded

% Overload	100%	125%	200%	400%	600%	800%	1000%
Delay Maximum (seconds)	no trip	110	18	4	2	1	.5
Delay Minimum (seconds)	no trip	10	1.7	.3	.1	.02	.01

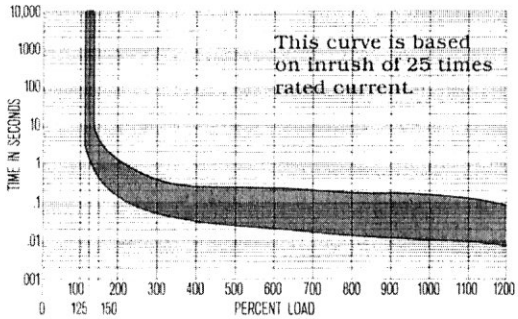
Curve 30, 50/60 Hz
Short Delay



Percent of rated current vs. trip delay at 25° C; breakers not preloaded

% Overload	100%	125%	200%	400%	600%	800%	1000%
Delay Maximum (seconds)	no trip	12	1.9	4	.2	.1	.06
Delay Minimum (seconds)	no trip	1	.15	.03	.015	.01	.006

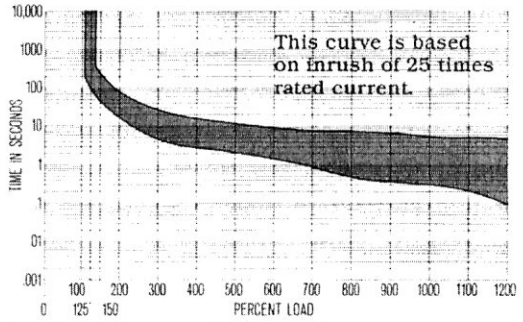
Curve 253, high-inrush 50/60 Hz
Short Delay



Percent of rated current vs. trip delay at 25° C

% Overload	100%	125%	200%	400%	600%	800%	1000%
Delay Maximum (seconds)	no trip	17	1.6	0.40	0.30	0.22	0.15
Delay Minimum (seconds)	no trip	1	0.16	0.05	0.03	0.020	0.012

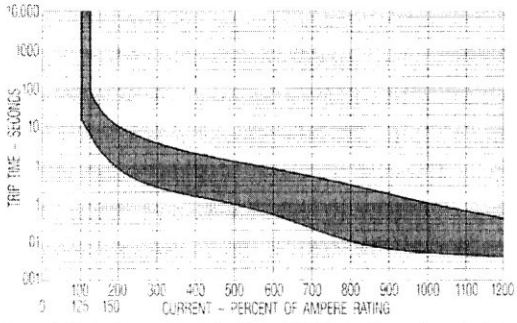
Curve 251, high-inrush 50/60 Hz
Long Delay



Percent of rated current vs. trip delay at 25° C

% Overload	100%	125%	200%	400%	600%	800%	1000%
Delay Maximum (seconds)	no trip	400	70	15	8	6	5
Delay Minimum (seconds)	no trip	75	15	3	1.5	0.5	0.3

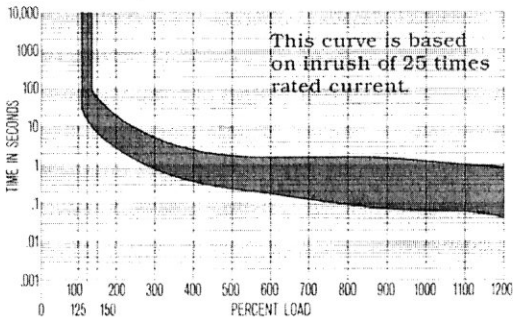
Curve 2, dc
Medium Delay



Percent of rated current vs. trip delay at 25° C; breakers not preloaded

% Overload	100%	125%	200%	400%	600%	800%	1000%
Delay Maximum (seconds)	no trip	80	10	2	.8	.3	.1
Delay Minimum (seconds)	no trip	6	.8	.15	.05	.01	.005

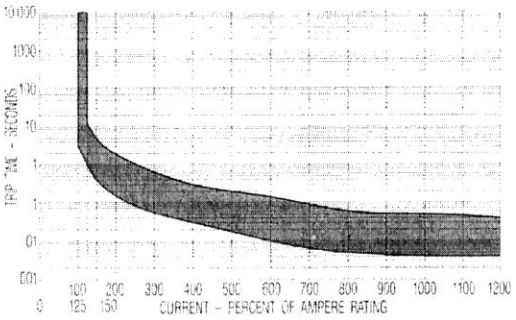
Curve 252, high-inrush 50/60 Hz
Medium Delay



Percent of rated current vs. trip delay at 25° C

% Overload	100%	125%	200%	400%	600%	800%	1000%
Delay Maximum (seconds)	no trip	100	20	2.5	1.6	1.4	1.0
Delay Minimum (seconds)	no trip	10	2.5	0.45	0.22	0.10	0.07

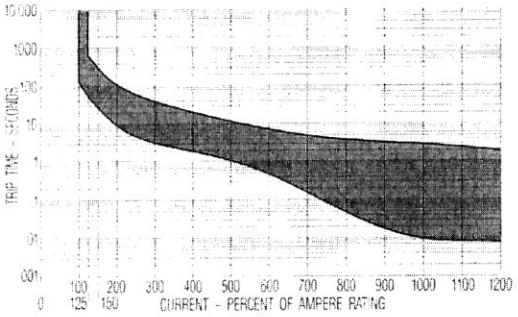
Curve 3, dc
Short Delay



Percent of rated current vs. trip delay at 25° C; breakers not preloaded

% Overload	100%	125%	200%	400%	600%	800%	1000%
Delay Maximum (seconds)	no trip	12	1.9	.3	.14	.06	.05
Delay Minimum (seconds)	no trip	1	.15	.03	.01	.005	.004

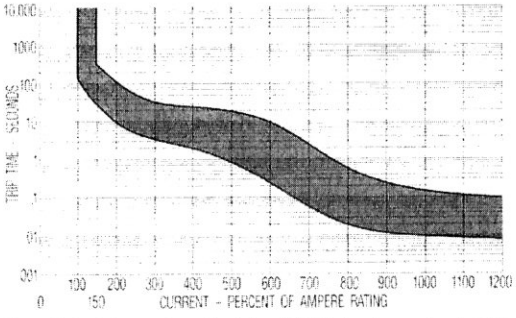
Curve 10, dc
Long Delay



Percent of rated current vs. trip delay at 25° C; breakers not preloaded

% Overload	100%	125%	200%	400%	600%	800%	1000%
Delay Maximum (seconds)	no trip	700	120	22	8	4	3
Delay Minimum (seconds)	no trip	60	10	2	.5	.05	.01

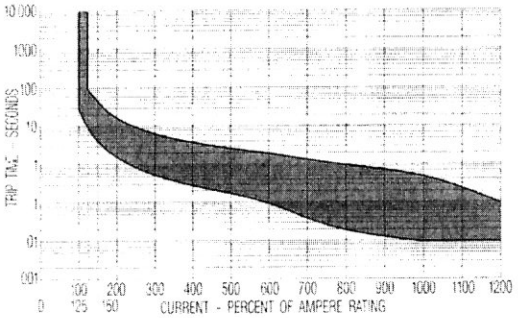
Curve 1, 400 Hz
Long Delay



Percent of rated current vs. trip delay at 25° C; breakers not preloaded

% Overload	100%	150%	200%	400%	600%	800%	1000%
Delay Maximum (seconds)	no trip	350	120	25	10	.6	.15
Delay Minimum (seconds)	no trip	30	10	2	.25	.02	.01

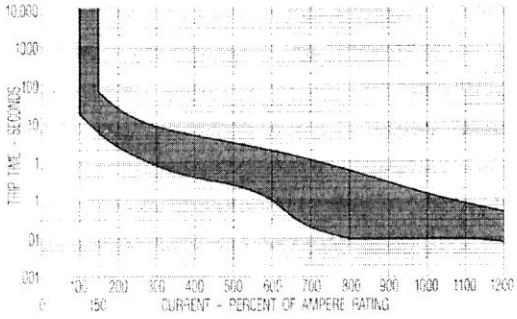
Curve 20, dc
Medium Delay



Percent of rated current vs. trip delay at 25° C; breakers not preloaded

% Overload	100%	125%	200%	400%	600%	800%	1000%
Delay Maximum (seconds)	no trip	110	18	4	2	.1	.5
Delay Minimum (seconds)	no trip	10	1.7	.3	.1	.02	.01

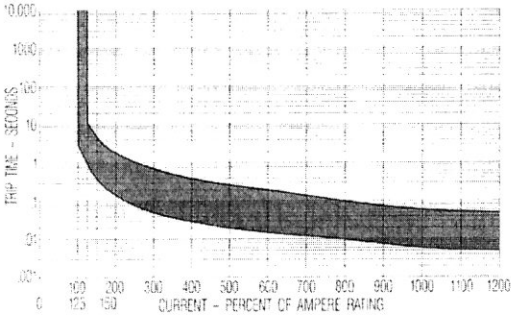
Curve 2, 400 Hz
Medium Delay



Percent of rated current vs. trip delay at 25° C; breakers not preloaded

% Overload	100%	150%	200%	400%	600%	800%	1000%
Delay Maximum (seconds)	no trip	70	26	5	2	.6	.15
Delay Minimum (seconds)	no trip	6	2.5	4	.1	.01	.01

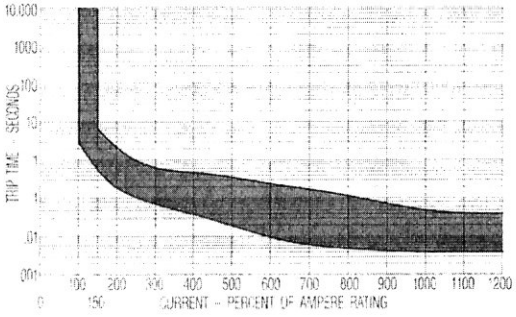
Curve 30, dc
Short Delay



Percent of rated current vs. trip delay at 25° C; breakers not preloaded

% Overload	100%	125%	200%	400%	600%	800%	1000%
Delay Maximum (seconds)	no trip	12	1.9	4	.2	1	.06
Delay Minimum (seconds)	no trip	1	.15	.03	.015	.01	.006

Curve 3, 400 Hz
Short Delay



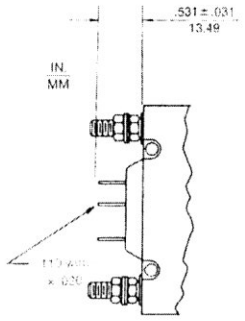
Percent of rated current vs. trip delay at 25° C; breakers not preloaded

% Overload	100%	150%	200%	400%	600%	800%	1000%
Delay Maximum (seconds)	no trip	7	2.3	.5	25	12	.05
Delay Minimum (seconds)	no trip	.6	.2	.04	.01	.005	.004

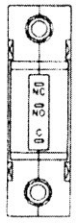
Dimensions

For metric threads, consult factory.

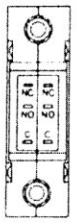
All dimensions are in inches/mm, tolerance ±.032/.81 except where noted. Dimensions are given here only as a preliminary guide to specifying. Final engineering drawings should be made from the latest Heinemann factory drawings, available on request.



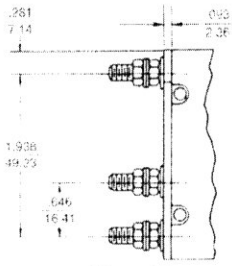
Auxiliary switch



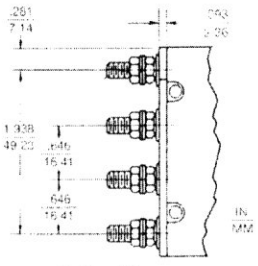
SPDT



DPDT

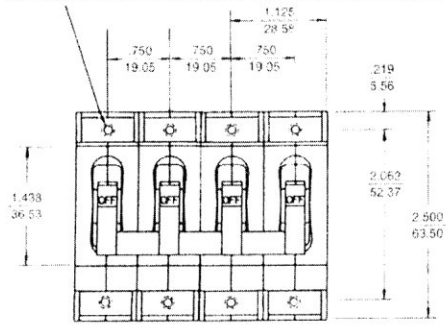


Shunt/Tap

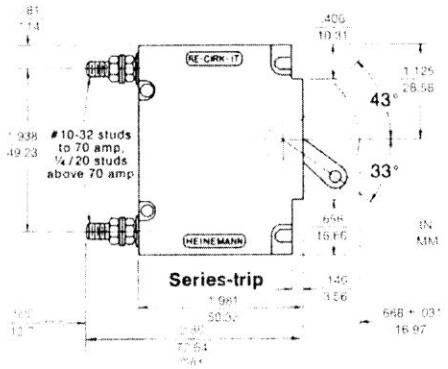


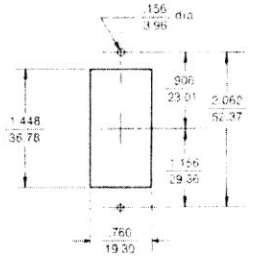
Relay-trip

6-32 mounting clips, 2 per pole, 5/32 deep clearance recess provided in moldings for mounting screw threads.



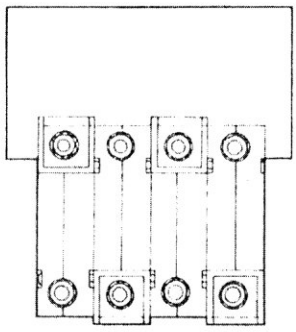
4-pole model 3.000 wide. Each pole .750 wide.



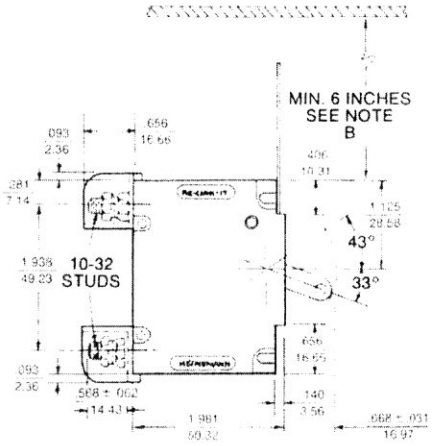


Panel cutout (per pole)

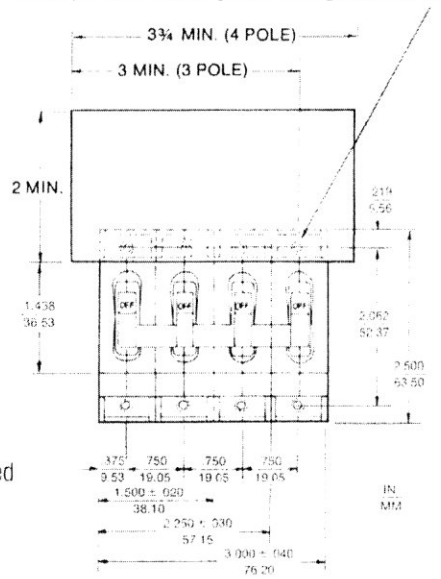
415 V and 480 V Models



4 Pole Overload



6-32 mounting clips, 2 per pole, 5/32 deep clearance recess provided in moldings for mounting screw threads.



INSTALLATION: 415 and 480 V Models

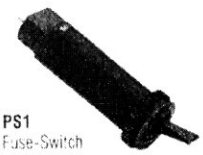
A. A min. 2 inch dimension through air is required between breaker side wall and all uninsulated metal.

B. A min. 6 inch clearance is required between the breaker vent area and the end wall of metal enclosures, uninsulated live parts of opposite polarity or other exposed metal.

C. Insulating fiber 1/32 inch thick is required between the breaker front and front panel underface. This fiber to be furnished by customer.

D. The CD back-up breakers are to be mounted on a vertical surface with adequate insulation. Ref. PCB-1373 for electrical specifications and special installation instructions.

For the widest selection of circuit protection, from 0.01 to 700 amperes, look to Heinemann.

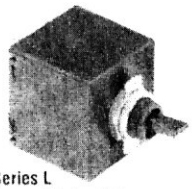


PS1
Fuse-Switch
To 20A Max.

KD1
Re-Cirk-It®
Protector
0.25-15A

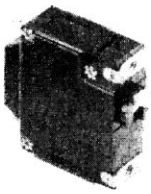
Type TX
Rocker Handle Protector
2-20A

Series HM
Sealed Hydraulic/
Magnetic Breaker
0.050-20A



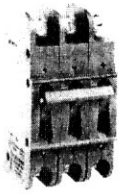
Series L
Compact Hydraulic/
Magnetic Protector
0.1-20A

Series RX Snap-In
Compact Hydraulic/
Magnetic Protector
0.1-20A

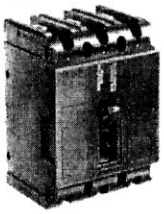


Series J/S Hydraulic/
Magnetic Circuit Breaker
0.02-50A

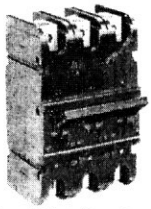
Series AM Hydraulic/
Magnetic Circuit Breaker
0.02-100A



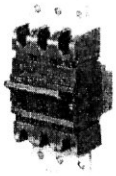
Series C E-Frame
Hydraulic/Magnetic Breaker
0.01-100A



Series GH EH-Frame
Hydraulic/Magnetic Breaker
0.5-100A



Series GJ High Current
Hydraulic/Magnetic Breaker
100-250A



Series GJ1P High Current DC
Hydraulic/Magnetic Breaker
100-700A

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For warranty information, see CMCO Bulletin C-C7.0

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