Sensata Technologies

POWER CONTROLS SOLUTIONS FOR RAILWAY APPLICATIONS

ABOUT SENSATA

Sensata is a global industrial technology company with 100+ years of experience in mission-critical design and innovation of sensor-rich solutions that create insights for our customers.

Delivering on our purpose by providing innovative and customized solutions for our customers' mission critical applications

BY THE NUMBERS

2024 Revenues: $3.9B

- **Americas 45%**
- **Europe 26%**
- **Asia 29%**

- **Advanced engineering skills**
- **Mission-critical complex applications**
- **Global scale and operational efficiency**
- **Decades of experience in scaling advanced components and systems**
- **Business and industry-specific knowledge**
- **Deep understanding of product design cycles and launch execution**

OUR BRANDS

AIRPAX · BEI SENSORS · BEI KIMCO · crydom · cynergy3 · DeltaTech CONTROLS · GAVAC · KLIXON · NEWALL · Sendyne

SIGNIFICANT SCALE AND FLEXIBILITY TO SUPPORT GLOBAL CUSTOMERS

~19k
employees across 14 countries

2M+
square feet of facilities capacity

1.1B+
units shipped annually

47k+
unique products

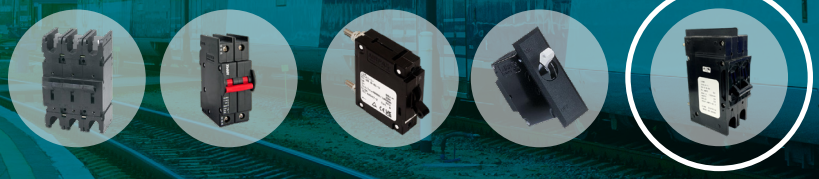
550+
manufacturing lines

5%
reduction in our market-based emissions intensity in ‘23 from ‘22

Signaling Equipment

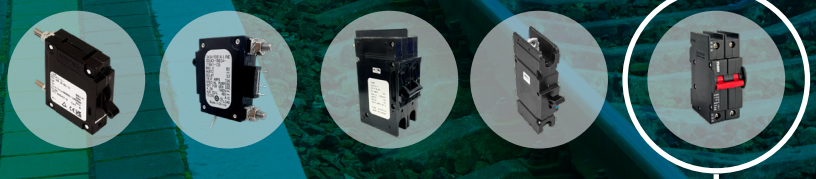
209 JAE IAL/LEL IAG, IUG, IEL, LEJ ICLR

Car HVAC Systems



JAE ICLR IAL/LEL IAG, IUG, IEL, LEJ 209

IAL/LEL IUL 209 218 ICLR



Rolling Stock/Traction

Ticket Vending Machines

SNAPAK


IPA


SNAPAK

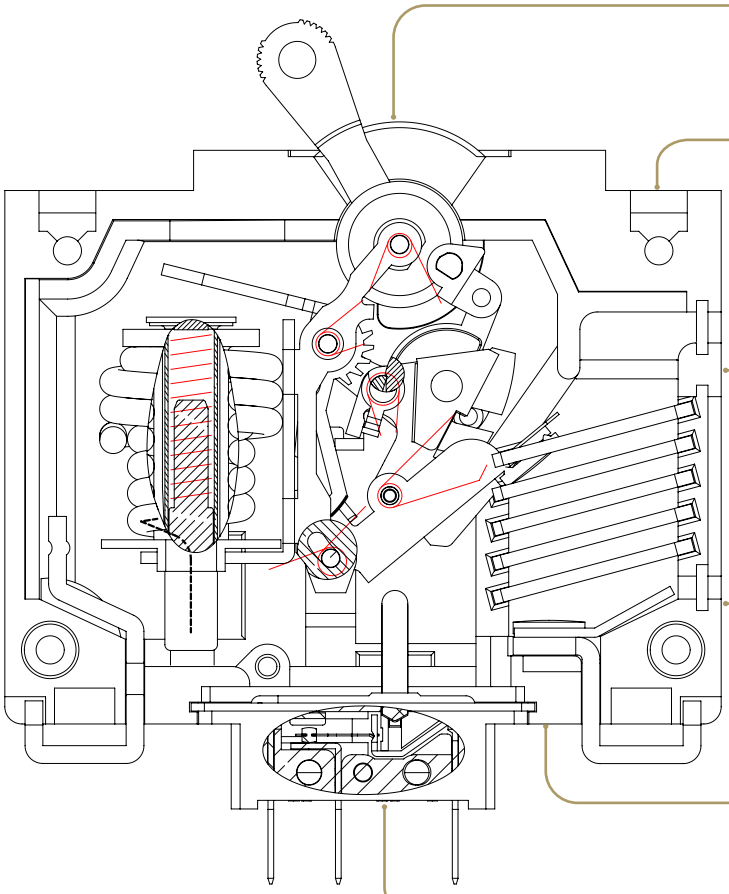

IAL/LEL

209 JAE IAL/LEL IAG, IUG, IEL, LEJ ICLR





Auxiliary Converters and Battery Chargers



Resistant to Ambient Temperature Changes – Consistent in rating and performance from –40° C to +85°C

Excellent Anti-Vibration and Anti-Shock Performance – MIL203 Rated and EN60077

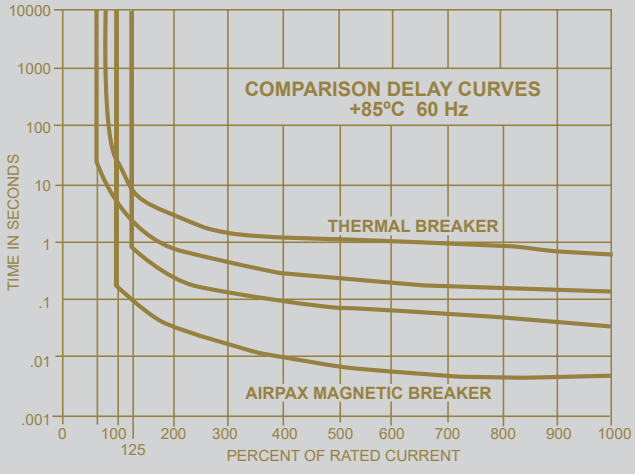
Built for Demanding Performance Railway Standards – UL489/UL1077 along with EN45545-2 and other standards

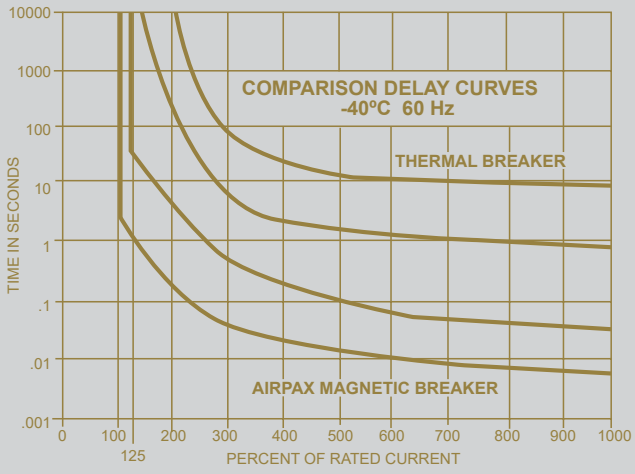
Compact Size with Multiple Optional Functions

Custom Terminals and Housings for Rail Applications

Multiple Delay Curve Options for Design Flexibility

Magnetic versus thermal breaker characteristics at high and low temperatures.





Click the Series Below for More Information

Product	Description	Poles	Current & Voltage Rating	Interrupting Capacity	**Approvals** (Consult Sensata for Relevant Approval Conditions)
IEL Series 	• IEL versions meet IEC spacing requirements for installation in equipment that must comply with IEC 601 and 950 and VDE 0730, 0804 and 0805 • Multi-pole options with multi or single handle • Auxiliary switch options • Snap-in mounting option • Mid-trip handle option • Various actuator options • Dual frequency delay options	1-4	• 100A max at 65 VDC • 70A max at 80 VDC • 50A max at 250VDC • 50A max at 300VDC • 70A max at 240 VAC, 50/60 Hz • 50A max at 277 VAC, 50/60 Hz • 50A max at 277/480 VAC, 50/60 Hz • 50A max at 250 VAC, 400 Hz	• 5000A, 240 VAC, 50/60 Hz • 1500A, 250 VAC, 400 Hz • 7500A, 80 VDC • 2000A, 240 VAC, 50/60 Hz (VDE) • 2000A, 415 VAC, 50/60 Hz (VDE) • 4000A, 80 VDC (VDE) • 1200A, 277/480 VAC, 50/60 Hz • 5000A, 250VDC • 1000A, 300VDC	• UL recognized • CSA certified • VDE approved (IEL) • CE compliant (IEL) • CCC approved • UL 1500 certified • QPL to MIL-PRF- 55629
LEL Series 	• LEL versions meet IEC spacing requirements for installation in equipment that must comply with IEC 601 and 950 and VDE 0730, 0804 and 0805 • Multi-pole options with multi or single handle • Auxiliary switch options • Snap-in mounting option • Mid-trip handle option • Various actuator options • Dual frequency delay options	1-3	• 100A max at 80 VDC • 50A max at 125 VAC, 50/60 Hz • 80A max at 120/240 VAC, 50/60 Hz • 100A max at 80 VDC (VDE) • 50A max at 250 VAC (VDE)	• 50000A, 80 VDC • 5000A, 125 VAC • 5000A, 120/240 VAC 50/60 Hz • 2000A, 80 VDC • 2000A, 250 VAC, 50/60 Hz (VDE) • 10000A, 120/240VAC, 50/60 Hz	• UL 489 listed • CSA certified • VDE approved • CE compliant • CCC approved
209 Series 	• Front or back connected terminal styles • E-frame style model complies with UL 489 • 249 Power Selector Breaker system is listed as a branch circuit breaker per UL 489 • Complies with international requirements • 279 complies with UL 489A	1-6	• 100A max at 160 VDC • 125A max at 125 VDC • 77A max at 600 VAC • 100A max at 347/600 VAC • 100A max at 120, 240, 277, 480 VAC • 100A max , 125 VDC, 240/415 VAC (VDE)	• 5000A • 10000A • 4000A (VDE)	• UL 489 listed • UL 489A listed (279) • UL recognized • CSA certified • VDE approved • UL1500 certified • CCC approved • CE compliant
JAE Series 	• F-frame style complies with UL 489 • Various terminal options for design flexibility • Reduced voltage drop through the circuit breaker compared to other protective devices • Auxiliary switch options • Mid-trip handle options	1-6	UL489 • 100A to 250A at 160 VDC • 100A to 250A at 65 VDC • 100A to 250A at 125/250 VDC • 100A to 250A at 240 VAC UL489A • 275A to 800A at 160 VDC • 275A to 1200A at 65 VDC	• 10000A, 160 VDC • 10000A, 125/250 VDC • 65000A, 65 VDC • 10000A, 240 VAC • 18000A, 240 VAC • 100000A, 65VDC • (UL489A up to 800A)	• UL 489 listed • UL 489A listed • UL recognized • CSA certified • VDE approved • CCC approved • CE compliant
IAG Series 	• IEG versions meet IEC spacing requirements for installation in equipment that must comply with IEC 601 and 950, and VDE 0730, 0804 and 0805 • Multi-pole options with multi or single handle • Auxiliary switch options • Mid-trip handle option • Snap-in mounting option • Dual frequency delay options	1-4	• 50A max at 80 VDC • 50A max at 240 VAC • 30A max at 277 VAC, 50/60 Hz • 30A max at 250 VAC, 400 Hz • 30A max at 125 VAC, 50/60 Hz • 30A max at 120/240 VAC, 50/60 Hz	• 5000A, 240 VAC, 50/60 Hz • 1500A, 250 VAC, 400 Hz • 7500A, 80 VDC (IEG) • 5000A, 80 VDC (CEG) • 2000A, 250 VAC, 50/60 Hz (VDE) • 4000A, 80 VDC (VDE) • 5000A, 125 VAC, 50/60 Hz (LEG) • 5000A, 120/240 VAC, • 50/60 Hz (LEG)	• UL 489 listed (LEG) • UL 489A listed (CEG) • UL recognized • CSA certified • VDE available • CE compliant • CCC approved • UL 1500 certified • QPL to MIL-PRF-55629
SNAPAK® 	• Compact magnetic-hydraulic circuit protector • Aesthetically pleasing for front panel mounting • Toggle, rocker, push-pull and push-to-reset actuation options	1-2	• 7.5A max at 50 VDC / 250 VAC • 30A max at 32 VDC / 120 VAC • 25A max at 120/240 VAC (two poles) • 20A max at 250 VAC (50/60 Hz, at 500AIC) • 20A max at 65 VDC [two poles, at 500AIC]	1000A	• UL recognized • CSA certified • TUV approved • CE compliant • CCC approved
IPA Series 	• Compact magnetic-hydraulic circuit protection • Quick-connect, screw, PC board mount terminals • Auxiliary switch options • Multi-pole options with multi or single handle	1-3	• 30A max at 65 VDC / 240 VAC • 20A max at 80 VDC (300 AIC) • 25A max at 250 VAC, 50/60 Hz • 15A max at 250 VAC, 400 Hz • 25A max at 65 VDC / 250 VAC, (TUV) • 15A max at 250 VAC, 400 Hz (TUV)	1000A	• UL 489A listed (CPA) • UL recognized • CUR recognized • TUV certified • CE compliant • CCC approved (pending)
ICRL Series 	• Designed specifically for 35mm DIN rail • Quick and easy mounting or removal	1-3	• 63A at 110VDC • 50A at 220VDC • 63A at 240VAC • 25A at 415VAC	10,000A, 80VDC 10,000A, 110VDC 6,000A, 220VDC 6,000A, 240VAC	• CCC (GB 14048.2) approved • TUV (IEC 60947-2) certified • UL 1077 recognized • CSA certified

ABOUT US

Sensata Technologies is one of the world's leading suppliers of sensing, electrical protection, control and power management solutions with operations and business centers in twelve countries. Sensata's products improve safety, efficiency and comfort for millions of people every day in automotive, appliance, aircraft, industrial, military, heavy vehicle, heating, air-conditioning and ventilation, data, telecommunications, recreational vehicles and marine applications. For more information, please visit the Sensata website.

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