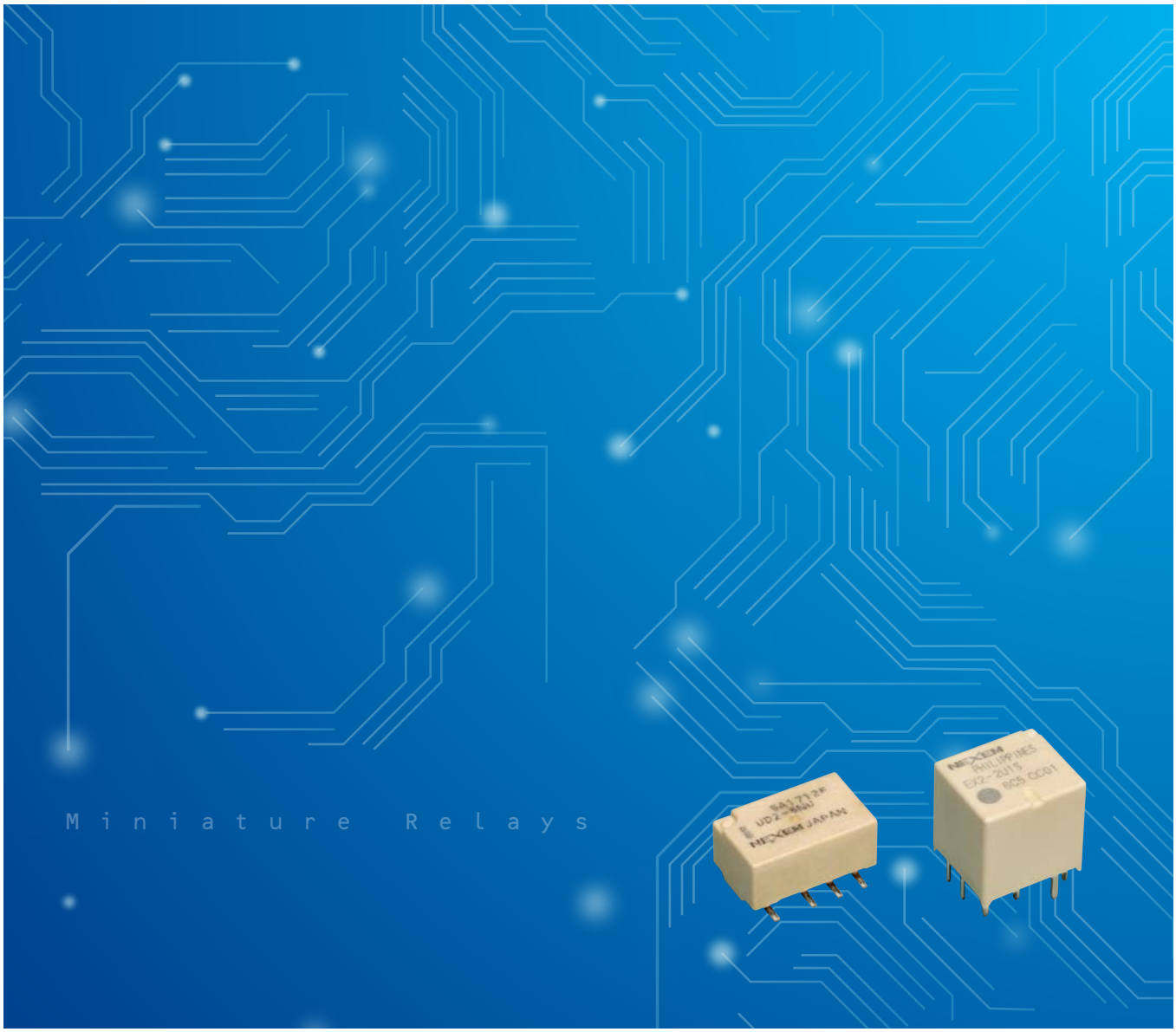
NEXEM Electro Mechanical Devices for Next

Miniature Relays

Vol.02



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The NEXEM's Miniature Relays have evolved in response to various demands.

Communication equipment, measurement instrument, FA equipment, electric home appliances and automotive electronics, and all the rest. In line with the increasing range of functions and downsizing of the various equipments, miniature relays have to respond to the demands of not only high performance and reliability, but also downsizing, low profile and environment resistance.
NEXEM is EM Devices' company brand. NEXEM uses the state-of-the-art technologies based on the integration of mechatronics and electronics, and has timely released excellent products. These are Miniature Signal Relays and Power Relays. They are ultra miniature and lightweight, and are suitable for high density packaging.

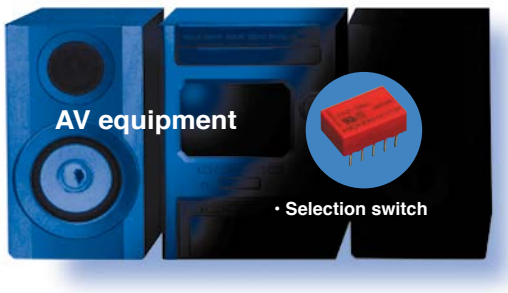
For various Communication system, For various Automotive electronics system.

Miniature signal relays are used mainly in the field of telecommunications equipments such as the telephone switchboards. However, they are widely used also for the home appliance field such as home telephone, BS tuner and audio-video equipment, for the OA field such as printer and facsimile, and for FA field such as measurement equipment. Miniature power relays are used for various applications in automotive electronics field.

Miniature Signal Relays

Applications

- Telephone switchboards
- Communication equipment
- FA equipment
- Security and alarm equipment
- Automotive diagnosis equipment
- AV equipment



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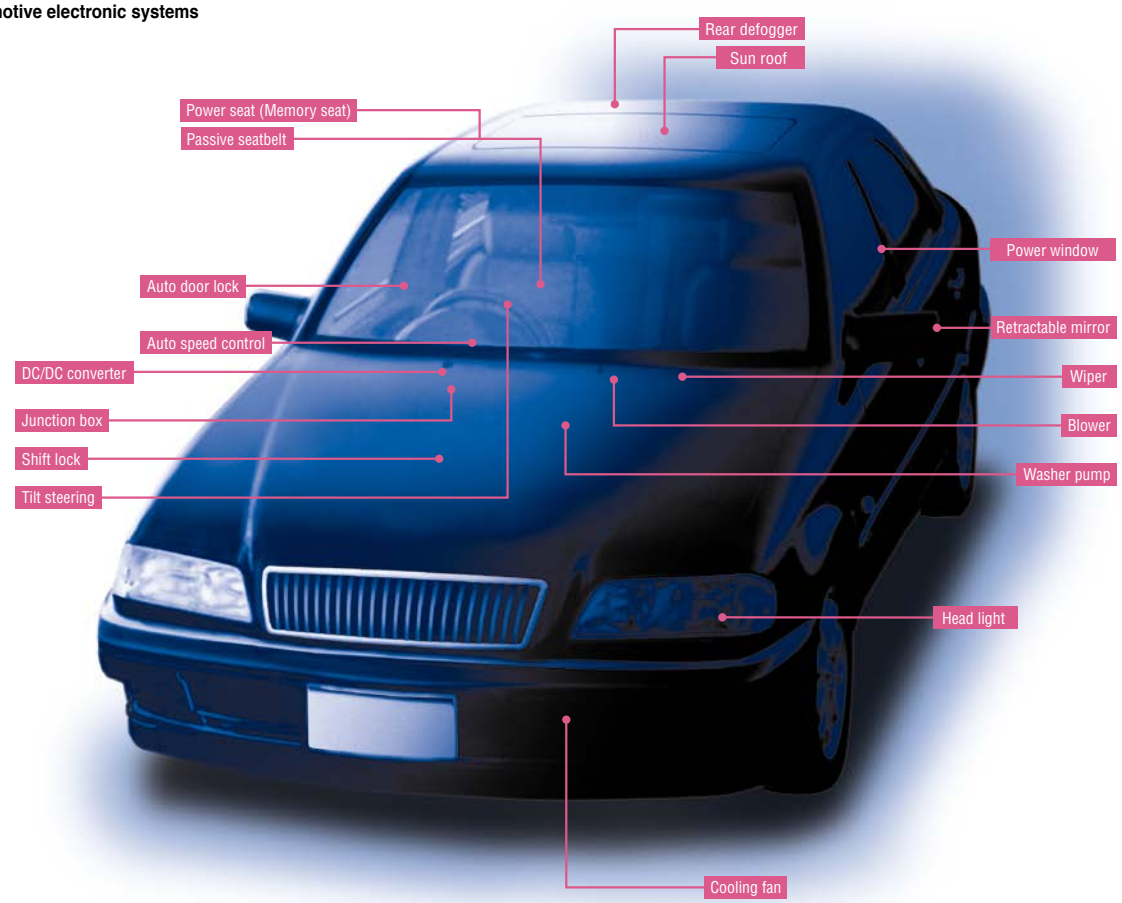
Excellent performance and reliability recognized by customers all over the world.

The most important item of relays is “reliability”. NEXEM’s Miniature Signal Relays are widely used for various communication equipments and measurement instruments which require high reliability of contact performance.
Meanwhile, NEXEM also has successful records in the field of Miniature Power Relays, which have been recognized by many customers of automotive electronics with severe requirements for product quality.
These products are shipped to many customers all over the world from NEXEM’s plants which have received the certifications of international standards of quality management ISO9001, ISO/TS16949 and environmental management ISO 14000.
“Better Products, Better Service” — Reliability supporting the products which create comfortable life. That is NEXEM’s Miniature Relay.

Miniature Power Relays

Applications

• Automotive electronic systems



Miniature Relays Lineup

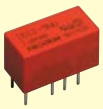
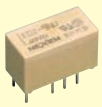
Miniature Signal Relays

NEXEM provides the best-seller products already used for various applications, and variety of products such as a flat type for low profile mounting, a slim type for high density mounting, low power consumption type and excellent environment resistance type.

<Feature>

- Compact, lightweight, ultra-low profile with high density
- The low power consumption
- Extremely durable plastic sealing
- Small but high withstanding voltage
- Lineup of SMTs (surface mount type) also available
- Latching type available
- RoHS compliance

Type of Relay		UA2/UB2	UC2/UD2	EA2	EB2
Mounting height (mm)		8.3/8.8~9.3max.	5.6/5.45~6.0max.	5.4max.	7.5max.
					
Mounting area (mm × mm)		6.0(7.7)×10.9	6.8(8.7)×10.9	9.2×14.2	11.7×14.3
Features		• Small mounting size of slim package • Bellcore (2500 V) and FCC (1500 V) surge capability • Low power consumption type available	• Low profile type • Bellcore (2500 V surge coil to contacts) and FCC (1500 V) surge capability • Low power consumption type available	• Breakdown voltage 1000VAC FCC Part 68 compliant	• Surface mount type • Breakdown voltage 1000VAC, FCC Part 68 compliant
Contact form		2c			
Maximum Contact	Power	30W/37.5VA		30W/62.5VA	
	Voltage	220VDC/250VAC			
	Current (A)	1			
Coil	Operating power (mW)	100~230		100~200	
	Nominal voltage (V)	3, 4.5, 5, 9, 12, (24)		3, 4.5, 5, 12, 24	
Sales status		Active			

Type of Relay		EC2	EE2	ED2	EF2
Mounting height (mm)		9.4max.	10.0~10.35max.	9.4max.	10.0~10.35max.
					
Mounting area (mm × mm)		7.5×15.0	9.7(7.5)×15.0	7.5×15.0	9.7(7.5)×15.0
Features		• 2500V surge coil to contacts	• Reduced mounting space type available • Surface mount type • 2500V surge coil to contacts	• Ultra low power consumption • 2500V surge coil to contacts	• Ultra low power consumption • Reduced mounting space type available • Surface mount type • 2500V surge coil to contacts
Contact form		2c			
Maximum Contact	Power	60W/125VA		30W/62.5VA	
	Voltage	220VDC/250VAC			
	Current (A)	2		1	
Coil	Operating power (mW)	100~230		50~70	
	Nominal voltage (V)	3, 4.5, 5, 9, 12, 24		1.5, 3, 4.5, 5, 9, 12, 24	
Sales status		Active			

Miniature Power Relays

NEXEM provides various capacity types and can accept almost load level of automotive application.

<Feature>

- Small while large capacity
- Flux tight housing suitable for automatic soldering dip
- Semi-customizable for use in all types of circuitry, including car electronic systems
- Washable plastic case (sealed type)
- Lineup of miniature twin relays also available
- Reflow soldering type available
- RoHS compliance

Type of Relay		EU2	EX2	EX1	ET2	ET1
Mounting height (mm)		8.5max. 	14.2max. 	14.2max. 	11.0max. 	11.0max. 
Mounting area (mm × mm)		14.5(12.2)×21.0max.	12.6×14.1max.	8.0×12.6max.	13.3×22.5max.	13.3×14.5max.
Features		• Twin relay (Separate connection) • Ultra low profile • Light weight • SMD	• Twin relay (Separate connection) • Small mounting area • Light weight	• Single relay • Small mounting area • Light weight	• Twin relay (Hbridge connection) • Low profile	• Single relay • Low profile
Contact form		1c×2		1c	1c×2	1c
Maximum Contact	Running specification	Power window motor (Locked) 14VDC-25A, 1x10^5 operations			Power window motor (Locked) 14VDC-20A, 1x10^5 operations	
		Power window motor (Free) 14VDC-25/5A, 1x10^5 operations			Power window motor (Free) 14VDC-20/3A, 1x10^5 operations	
Coil	Operating power (mW)	960	900		640	
	Nominal voltage (V)	12				
Sales status		Active				

Type of Relay		EP2	EP1	EP1K	EM1	EL1
Mounting height (mm)		16.5max. 	16.5max. 	17.5max. 	16.8max. 	17.8max. 
Mounting area (mm × mm)		16.7×24.3max.	16.7×15.1max.	16.7×15.1max.	12.9×14.9max.	12.9×14.9max.
Features		• Twin relay (Separate or Hbridge connection) • Small	• Single relay • Small	• Single relay • Small • High carrying current • High heat resistance	• Single relay • Large capacity • Small mounting area • Suitable for lamps, CR load • High heat resistance	• Single relay • Large capacity • Small mounting area • Suitable for Inductive load • High heat resistance
Contact form		1c×2	1c		1u	1c
Maximum Contact	Running specification	Power window motor (Locked) 14VDC-25A, 1x10^5 operations			Resistance 14VDC-40A, 1x10^5 operations	
		Power window motor (Free) 14VDC-25/5A, 1x10^5 operations			Lamp 14VDC-120A/ 14A, 1x10^5 operations	Inductance (0.5mH) 14VDC-30A, 1x10^5 operations
Coil	Operating power (mW)	640				
	Nominal voltage (V)	12				
Sales status		Non-promotion*			Active	

* Now,these products are corresponding only to specific customers.

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The production bases responsible for the superb quality of NEXEM's Miniature Relays.

EM Devices has two production bases — EM Devices Shiroishi Operations and EMD Technologies Philippines Inc. — that ensure a constant and stable supply of high-quality and highly reliable miniature relays using the most advanced equipment available. Both plants have received ISO9001, ISO/TS16949 and ISO14001 certification.

EM Devices Shiroishi Operations (HQ)

This is a R&D and production site responsible for developing and designing new products. There is abundant expertise and experience in manufacturing technology.
The production line employs state-of-the-art robots and image processing technology to ensure that NEXEM miniature relays achieve maximum efficiency and quality.

EMD Technologies Philippines Inc.

Established in 1997, this mass production factory boasts the most advanced equipment. The intricate construction of miniature relays requires the highest level of precision for processing and assembly. In order to ensure high quality and stable supply, optimal production systems are built timely. And the miniature relays which satisfy customers are shipped all over the world.

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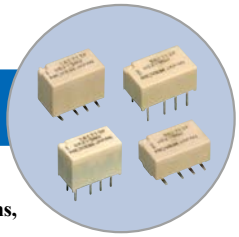
NEXEM Miniature Relays keep on evolving.

In order to respond to various needs from customers, NEXEM is creating new products through continuous efforts for downsizing, weight saving, high performance, change of mounting method, and so forth.

Ultra small signal relays

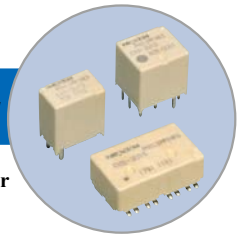
U Series



The world's smallest class signal relay for use in telecommunications, FA control, and measuring equipment. UA&UB relays are the ultra-compact type with a mounting area of 60mm². UC&UD relays are the ultra-compact type with low profile of 5.45mm.

Miniature power relays for Automotive electronic systems

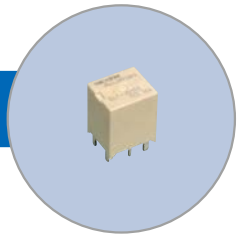
EX1, EX2&EU2 relay



These relays are suitable for motor reversible control such as power window and door lock, etc. EX1&EX2 relays are the world's smallest class of mounting area. EU2 relay is the surface mount twin relay with the world's lowest profile (8.5mm).

Miniature power relays for Automotive electronic systems

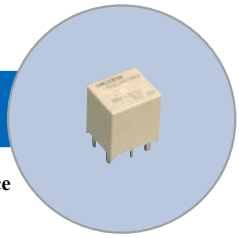
EL1 relay



EL1 relay is high heat resistance relay for junction boxes. It is suitable for motors , solenoidal coils and etc. Switching current of 40A and carrying current of 50A are achieved.

Miniature power relays for Automotive electronic systems

EM1 relay



EM1 relay is a high heat resistance relay for junction boxes. It is suitable for large inrush current loads such as lamps and condensers, or heaters and fans. Inrush current of 100A and carrying current of 50A are achieved.

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