

**AXICOM**

Telecom-, Signal and RF Relays

# Cradle Relay W v23005

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## Cradle Relay W V23005

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The dimensions in this datasheet are for reference purpose only and are subject to change without notice. Specifications are subject to change without notice.

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## Cradle Relay W V23005

Hand solder and plug-in relay,  
for AC operation,  
non-polarized, non-latching

ROHS compliant (Directive 2002/95/EC) as per  
product date code 0501.

### Features

- Highly reliable
- Great variety of contact arrangements and materials to meet specific applications
- Contacts for signal loads and currents up to 5 A
- AC and DC, latching and non-latching, coils operating voltage 1.5 V ... 125 V
- Sockets for easy and quick mounting of relays (see datasheet Accessories)

### Typical applications

- Operation of the coil with alternating voltage
- Machine controls

### Versions

- Size I or II, depending on height of the contact set
- Various contact arrangements available:  
max. 4. changeover contacts, 2 break contacts
- Single or bifurcated contacts
- Hand solder terminals, for plug-and-socket connection, screw fixing
- Dust-protected



## Cradle Relay W V23005

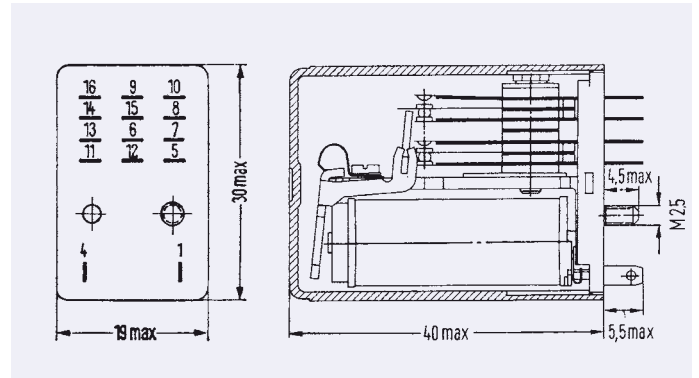
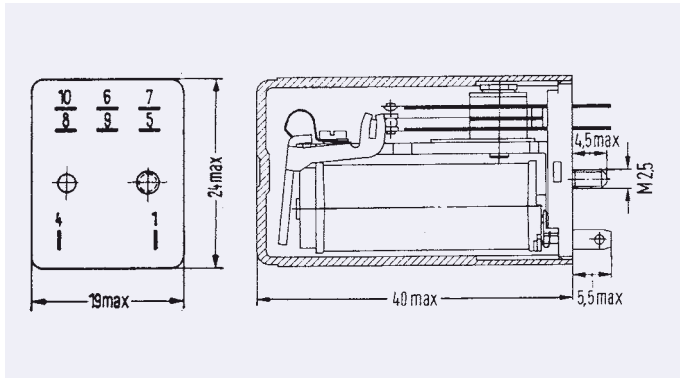
### Dimensions

Dimensions in mm

#### Type V23005-A0xxx Size I

#### Type V23005-B0xxx Size II

With hand solder terminals, silver-plated  
Also for plug-and-socket connection plus screw fixing  
With earth terminal  
Dust-protected



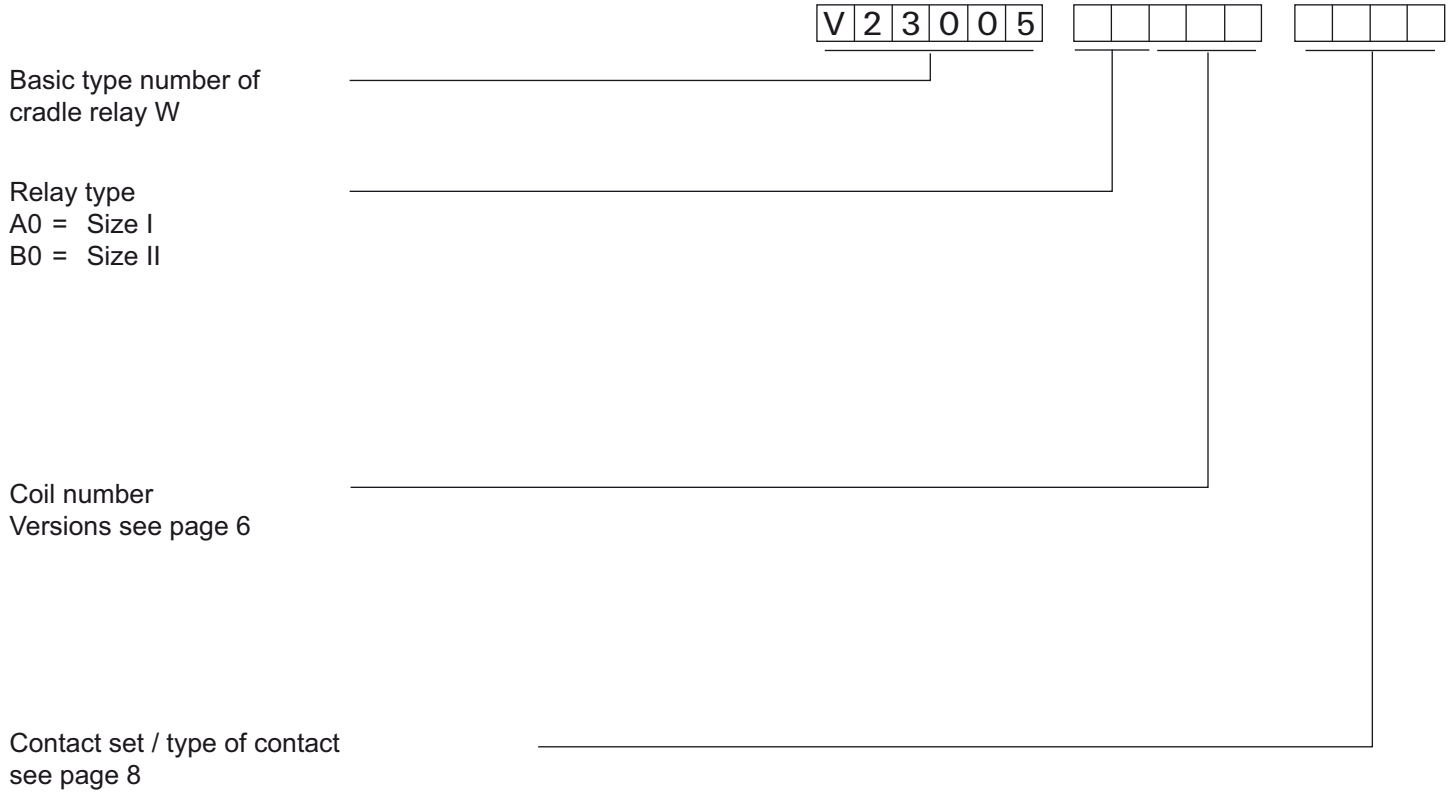
### Coil Data and operating range

Nominal voltage	from 6 Vac to 220 Vac
Typical nominal power consumption, at 20 °C	1.15 W
Class of the operative range acc to EN 61810-1 / IEC 61810-1 and VDE 0435 Part 201	1
Operating voltage (according to the coil type)	max. 80% of the nominal voltage

For sockets and hold-down springs see data sheet Accessories

## Cradle Relay W V23005

### Relay Code



Ordering example:  
V23005-B004-F104  
Cradle relay W, size II, coil 220 Vac, 2 changeover contact set, single contacts, contact material silver, gold-flashed

Note:  
The ordering scheme enables a multitude of variations. However, not all variations are defined as construction specifications (ordering code) and thus in the current delivery program.

Special design can be carried out to customer specifications. Please contact your local representative.

## Cradle Relay W V23005

### Coil Data (values at 20 °C)

### Ordering Information

Nominal Voltage Unom VAc	Terminals		Coil Resistance $\Omega \pm 15\%$	Relay code	Typ part number
	Start	End			

#### V23005-AXXXX standard, size I

24	4	1	170	V23005A10B104	1-1393816-7
12	4	1	40	V23005A17B104	1-1393816-8
48	4	1	620	V23005A19B104	1-1393816-9
18	4	1	108	V23005A21C104	2-1393816-0
220	4	1	14000	V23005A4B104	1393816-1
220	4	1	14000	V23005A4B604	1393816-3
220	4	1	14000	V23005A4C104	1393816-4
110	4	1	3200	V23005A7B104	1393816-8
110	4	1	3200	V23005A7B604	1-1393816-0
110	4	1	3200	V23005A7C104	1-1393816-1
60	4	1	1000	V23005A8B104	1-1393816-4
42	4	1	550	V23005A9B104	1-1393816-5

#### V23005-AXXXX 5A, size I

220	4	1	14000	V23005A4F101	1393816-5
220	4	1	14000	V23005A4F105	1393816-6
220	4	1	14000	V23005A4F106	1393816-7
110	4	1	3200	V23005A7F105	1-1393816-2
110	4	1	3200	V23005A7F106	1-1393816-3
42	4	1	550	V23005A9F106	1-1393816-6

#### V23005-BXXXX standard, size II

24	4	1	170	V23005B10B110	4-1393816-0
24	4	1	170	V23005B10C110	4-1393816-1
24	4	1	170	V23005B10C410	4-1393816-2
12	4	1	40	V23005B17B110	4-1393816-5
220	4	1	14000	V23005B4B110	2-1393816-2
220	4	1	14000	V23005B4B610	2-1393816-4
220	4	1	14000	V23005B4C110	2-1393816-5
220	4	1	14000	V23005B4C410	2-1393816-6
220	4	1	14000	V23005B4C412	2-1393816-7
110	4	1	3200	V23005B7B110	3-1393816-0
110	4	1	3200	V23005B7B610	3-1393816-1
110	4	1	3200	V23005B7C110	3-1393816-2
110	4	1	3200	V23005B7C410	3-1393816-3
60	4	1	1000	V23005B8B110	3-1393816-5
42	4	1	550	V23005B9B110	3-1393816-7
42	4	1	550	V23005B9C110	3-1393816-8

#### V23005-BXXXX 5A, size II

24	4	1	170	V23005B10F104	4-1393816-3
6	4	1	8	V23005B15F104	4-1393816-4
12	4	1	40	V23005B17F104	4-1393816-6
220	4	1	14000	V23005B4F104	2-1393816-8
110	4	1	3200	V23005B7F104	3-1393816-4
60	4	1	1000	V23005B8F104	3-1393816-6
42	4	1	550	V23005B9F104	3-1393816-9

## Cradle Relay W V23005

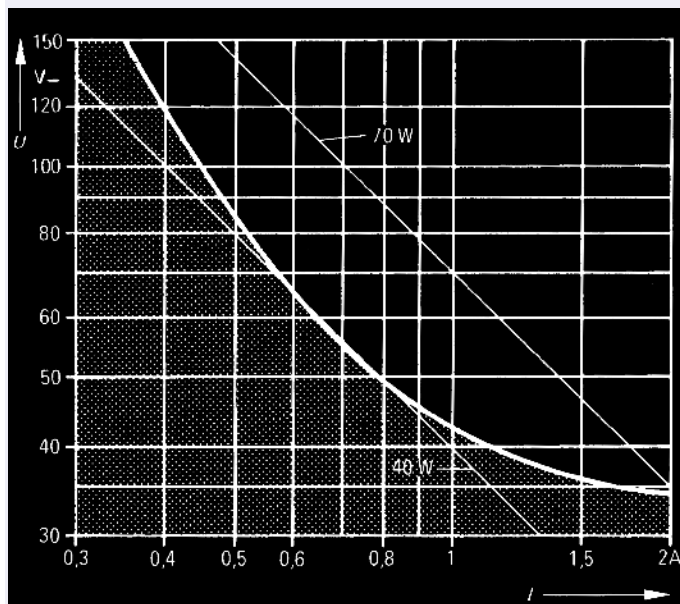
### Contact Data

Ordering code block 3	B104/B110/	B604/B610	C104/C110	C404/C410	F104 ... F107
Number of contacts and Type	max. 4 changeover contacts, 2 break contacts or 2 make contacts				
Contact assembly	single contacts		bifurcated contacts		single contacts
Contact material	silver, gold-flashed	gold F	silver, gold-flashed	gold F	silver, gold-flashed
Max. switching voltage	150 Vdc	36 Vdc	150 Vdc	36 Vdc	250 Vdc
	125 Vac	30 Vac	125 Vac	30 Vac	250 Vac
Max. switching current	2 A	0.2 A	2 A	0.2 A	5 A
Max. switching capacity	35 to 70 W see load limit curve page 7 50 VA	5 W 5 VA	35 to 70 W see load limit curve page 7 50 VA	5 W 5 VA	50 to 140 W see load limit curve page 7 500 VA
Max. continuous current at max. ambient temperature	2 A				5 A

### Max. DC Load Breaking Capacity

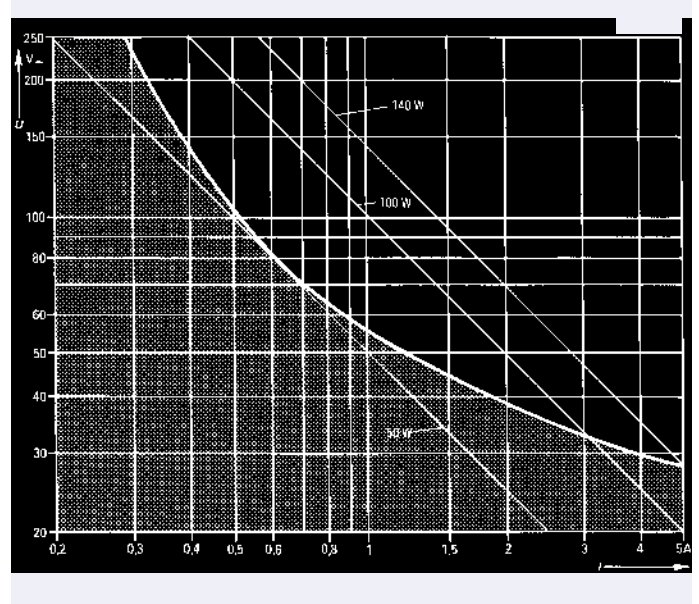
for contact sets B1xx and C1 xx

Safe breaking, no stationary arc  
Contact material silver, gold-flashed



for contact sets F1xx

Safe breaking, no stationary arc  
Contact material silver, gold-flashed

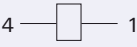
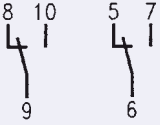
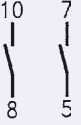
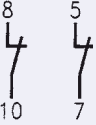



$I$  = switching current  
 $U$  = switching voltage


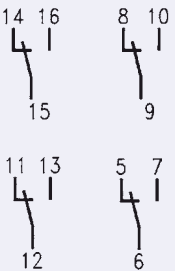
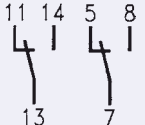
## Cradle Relay W V23005

### Contact sets

#### Size I

Number of contacts and type	2 changeover contacts		2 make contacts	2 break contacts	1 break 1 make contact
Symbols with base connections 					
Contact assembly	single contacts	bifurcated contacts	single contacts		
Contact material silver, gold-flashed Ordering code block 3	B104	C104	F105	F107	F106
Contact material gold F Ordering code block 3	B604	C404			

#### Size II

Number of contacts and type	4 changover contacts		2 changover contacts
Symbols with base connections 			
Contact assembly	single contacts	bifurcated contacts	single contacts
Contact material silver, gold-flashed Ordering code block 3	B110	C110	F104
Contact material gold F Ordering code block 3	B610	C410	



## Cradle Relay W V23005

### Insulation

Ordering code block 3	B1xx	B6xx	C1xx	C4xx	F1xx
Test voltage (1 min) winding / frame	500 Vac <sub>rms</sub> at nominal voltages ≤ 60 V 500 Vac <sub>rms</sub> at nominal voltages > 60 V				
contact / frame contact / coil	500 Vac <sub>rms</sub> 1000 Vac <sub>rms</sub>			1000 Vac <sub>rms</sub> 1000 Vac <sub>rms</sub>	

### General Data

Ordering code block 3	B1xx	B6xx	C1xx	C4xx	F1xx
Maximum switching rate without load	20 operations/s				
Ambient temperature range acc. to EN 61810-1 / IEC 61810-1 and VDE 0435 part 201	-40 °C ... +70 °C				
Thermal resistance	35 K/VA				
Maximum temperature	100 °C				
Continuous thermal load	2.2 VA				
Degree of protection acc. to EN 60529 / IEC 60529 / VDE 0470 part 1	dust-protected IP 40				
Mechanical endurance	approx. 10 <sup>7</sup> operations			approx. 10 <sup>8</sup> operations	
Mounting position	any				
Processing information	Ultrasonic cleaning should be avoided if possible or carried out only after consulting the manufacturer				
Weight V23005-AOxxx Size I V23005-BOxxx Size II	approx. 35 g approx. 40 g				

## Cradle Relay W V23005

### IM Relays

4th generation slim line – low profile polarized 2 c/o telecom signal relay with bifurcated contacts, available as non latching or latching relay with 1 coil. Nominal voltage range from 1.5 ... 24 V, coil power consumption of 50 ... 200 mW, latching relays with 1 coil 100 mW. The IM relay is available as through hole and surface mount type (J-Legs and Gull Wings) and capable to switch loads up to 60 W/62,5 VA. It is currently the only 2 A rated 4G relay on the market. Dielectric strength fulfills the Telcordia requirements according GR 1089 (2,5 kV – 2 / 10  $\mu$ s) and FCC part 68 (1,5 kV – 10 / 160  $\mu$ s). The IM relay is tested according CECC/IECQ and certified in accordance with IEC/EN 60950 and UL 60950. Dimensions approx. 10 x 6 mm board space and 5.65 mm height.

### P2 Relays

3rd generation polarized 2 c/o telecom relay with bifurcated contacts, available as non latching or latching relay with 1 or 2 coils. Nominal voltage range from 3 ... 24 V, coil power consumption 140 mW, latching relays with 1 coil 70 mW. The P2 Relay is available as through hole or surface mount type and capable to switch currents up to 5 A. Dielectric strength fulfills the Telcordia requirements according GR 1089 (2,5 kV – 2 / 10  $\mu$ s) and FCC part 68 (1,5 kV – 10 / 160  $\mu$ s). The P2 relay is tested according CECC/IECQ and certified in accordance with IEC/EN 60950 and UL 60950. Dimensions approx. 15 x 7,5 mm board space and 10 mm height.

### FX2 Relays

3rd generation polarized 2 c/o telecom relay with bifurcated contacts, available as non latching or latching relay with 1 coil. Nominal voltage range from 3 ... 48 V, coil power consumption of 80 ... 260 mW for the high sensitive version, 140... 300 mW for the standard version, latching relays with 1 coil 100 mW. The FX2 relay is available as through hole type and capable to switch loads up to 60 W/62,5 VA. Dielectric strength fulfills the Telcordia requirements according GR 1089 (2,5 kV – 2 / 10  $\mu$ s) and FCC part 68 (1,5 kV – 10 / 160  $\mu$ s). The FX2 relay is tested according CECC/IECQ and certified in accordance with IEC/EN 60950 and UL 60950. Dimensions approx. 15 x 7,5 mm board space and 10,7 mm height.

### FT2 / FU2 Relays

3rd generation non polarized, non latching 2 c/o telecom relay with bifurcated contacts. Nominal voltage range from 3 ... 48 V, coil power consumption 200 ... 300 mW. Most sensitive 48 V relay. Available as through hole and surface mount type. Dielectric strength fulfills the Telcordia requirements according GR 1089 (2,5 kV – 2 / 10  $\mu$ s) and FCC part 68 (1,5 kV – 10 / 160  $\mu$ s). The FT2/FU2 relay is tested according CECC/IECQ and certified in accordance with IEC/EN 60950 and UL 60950. Dimensions approx. 15 x 7,5 mm board space and 10 mm height.

### FP2 Relays

3rd generation polarized 2 c/o telecom relay with bifurcated contacts, available as non latching or latching relay with 1 or 2 coils. Nominal voltage range from 3 ... 48 V, coil power consumption of 80 ... 260 mW for the high sensitive version, 140... 300 mW for the standard version, latching relays with 1 coil 100 mW. The FP2 Relay is available as through hole type and capable to switch loads up to 60 W/62,5 VA. Dielectric strength fulfills FCC part 68 (1,5 kV – 10 / 160  $\mu$ s). The FP2 is tested according CECC/IECQ approved. Dimensions approx. 14 x 9 mm board space and 5 mm height.

### MT2

2nd generation non polarized, non latching 2 c/o telecom and signal relay with bifurcated contacts. Nominal voltage range from 3 ... 48 V, coil power consumption 150/200/300/400 and 550 mW. Dielectric strength fulfills the requirements according FCC part 68 (1,5 kV – 10 / 160  $\mu$ s). Dimensions approx. 20 x 10 mm board space and 11 mm height.

### D2n Relays

2nd generation non polarized 2 c/o relay for telecom and various other applications. Nominal voltage range from 3 ... 48 V, coil power consumption from 150 ... 500 mW. The D2n relay is capable to switch currents up to 3 A. Dielectric strength fulfills the requirements according FCC part 68 (1,5 kV – 10 / 160  $\mu$ s). Dimensions approx. 20 x10 mm board space and 11 mm height.

### P1 Relays

Extremely sensitive, polarized 1 c/o relay with bifurcated contacts for a wide range of applications, available as non latching or latching relay with 1 or 2 coils. Nominal voltage range from 3 ... 24 V, coil power consumption 65 mW, latching relays with 1 coil 30 mW. The P1 relay is available as through hole or surface mount type and capable to switch currents up to 1 A. Dielectric strength fulfills the requirements according FCC part 68 (1,5 kV – 10 / 160  $\mu$ s). Dimensions approx. 13 x 7,6 mm board space and 7 mm height for THT or 8 mm height for SMT version.

### W11 Relays

Low cost, non polarized 1 c/o relay for various applications. Nominal voltage range from 3 ... 24 V, coil power consumption 450 mW, sensitive versions 200 mW. The W11 relay is capable to switch currents up to 3 A. Dielectric strength 1000 Vrms. Dimensions approx. 15,6 x 10,6 mm board space and 11,5 mm height.

### Reed Relays

High sensitive, non polarized relay for telecom and various other applications, available with 1 n/o, 2 n/o or 1c/o contacts. Nominal voltage range from 5 ... 24 V, coil power consumption 50...280 mW for 1 n/o and 125 ... 280 mW for 2 n/o or 1 c/o versions. Reedrelays are available in DIP or SIL housing and capable to switch currents up to 0,5 A. Integrated diode and/or electrostatic shield optional. Dielectric strength 1500 Vdc. Dimensions approx. 19,3 x 7 mm board space and 5 ... 7,5 mm height for DIP or 19,8 x 5 mm board space and 7,8 mm height for SIL version.

### Cradle Relays

Extremely reliable and mature relay family of 1st generation for various signal switching applications. Available as non polarized, polarized / latching and relay with AC coil. The benefit is the possibility of combining various contact sets from 1 up to 6 poles, single and bifurcated contacts, different contact materials with a coil voltage range from 1,5 Vdc to 220 Vac. Cradle relays are available as dust protected and hermetically sealed versions, with plug in or solder terminals and are capable to switch currents up to 5 A. Forcibly guided (linked) contact sets optional. Dielectric strength 500 Vrms. Dimensions from approx. 19 x 24 to 19x35 mm board space and 30 mm height.

### Other Relays

We offer a variety of different relay families for maintenance and replacement purposes. These relays are up to 60 years old now, such as Card Relay SN (V23030 series), Small General Purpose Relay (V23006 series), Small Polarized Relay (V23063 ... V23067 and V23163 ... V23167 series). Accessories like sockets, hold down springs, etc. optional.

### High Frequency Relays

HF3 / HF3S / HF6 series RF relays offering excellent RF characteristics in a small package. All HF series relays are suitable for SMD soldering processes. Available as non latching or latching versions with 1 or 2 coils and a nominal coil voltage range from 3 ... 24 V, a coil power consumption of 140 mW or 70 mW (single coil latching types).

**HF3:** Low cost RF relay suitable up to 3 GHz. Impedance 50 and 75 Ohm. 50 W hot switching and 50 W RF power carry capability. Dimensions 14.6 x 7.3 x 10.3 mm.

**HF3S:** High performance, high power RF relay suitable up to 3 GHz, 50 W hot switching and 150 W RF power carry capability. Dimensions 15 x 7.6 x 10.6 mm.

**HF6:** High performance, high power RF relay suitable up to 6 GHz, 50 W hot switching and 50 W RF power carry capability. Dimensions 15 x 7.6 x 10.6 mm.



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 **Tyco Electronics**

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