Marking solutions for electronics production

MARKING system

PHOENIX CONTACT
INSPIRING INNOVATIONS

The complete marking range for electronics production

Phoenix Contact can provide marking solutions for numerous applications, from unique identification of components, through traceability in the production process, to protection against tampering and counterfeiting.

Printed circuit board

Protect the traceability of your products with resistant marking. Phoenix Contact labels will help you to cut costs but not quality. High-definition barcodes ensure that information remains permanently available.

Housing marking

Professional device labeling is a walking advertisement for your products. Labeling materials from Phoenix Contact can be relied upon for clear and durable marking from front panel to rating plate.

Marking systems benefiting from the expertise of electronics specialists

Phoenix Contact is one of the world's leading manufacturers of electronic components and systems for industrial automation technology. Our production activities have helped us build up a wealth of expertise in all aspects of marking, which we are now happy to share with our customers. Here at Phoenix Contact, you can expect products that have already proven their worth in thousands of practical applications.

We can provide you with materials and devices that have been customized to meet the specific challenges encountered when marking

- PCBs
- Housings
- PCB terminal blocks and plug-in connectors
- Cables and lines

The complete marking portfolio for electronics production.

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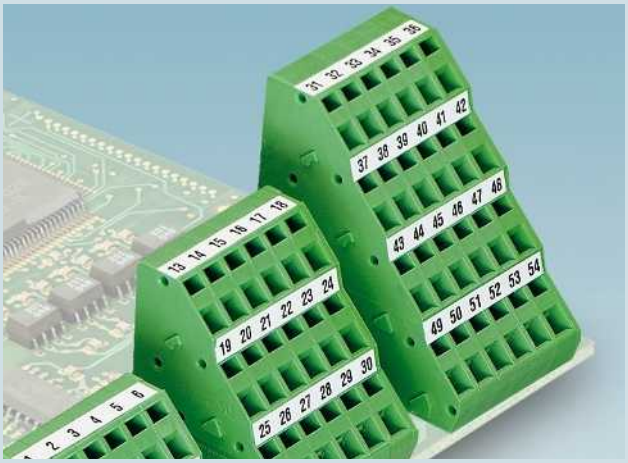
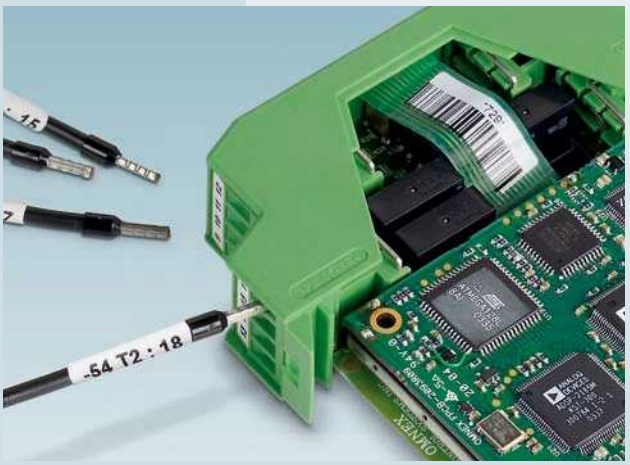


PCB terminal block and plug-in connector marking

With clear and rugged terminal marking, your products can be wired reliably and conveniently. Choose materials from the market leader in PCB connection technology when marking your device connections.

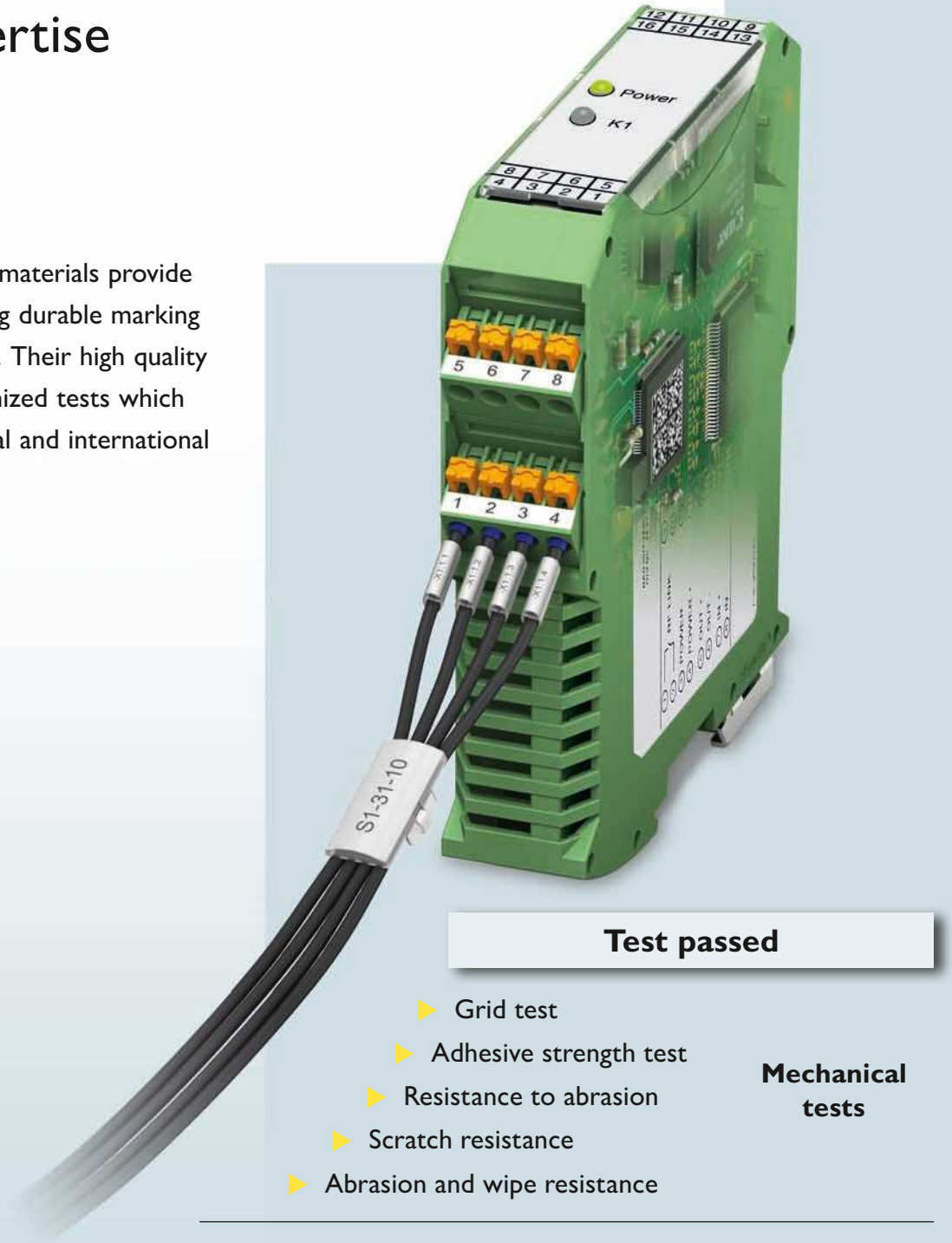


Cable and conductor marking

Thanks to our optimized printing technologies and resistant materials, even markings exposed to significant stress remain permanently legible.

Marking expertise

Phoenix Contact marking materials provide an assurance of long-lasting durable marking for components and parts. Their high quality is demonstrated by recognized tests which are documented in national and international standards.



Test passed

Mechanical tests

- Grid test
- Adhesive strength test
- Resistance to abrasion
- Scratch resistance
- Abrasion and wipe resistance

Environment tests

- UV light resistance
- Solvent resistance
- Resistance to oil and chemicals

Material tests

- Halogen-free protection against flames
- Inflammability classification
- Material properties

Material properties

Polyvinyl chloride (PVC)
PVC has a long service life. It is characterized by its high mechanical strength and chemical resistance. Neither oxygen nor ozone affects PVC. The material is resistant to corrosive salt solutions and most acids. The polyvinyl chloride used by Phoenix Contact is silicone-free and is suitable for use in temperatures between -30°C and +80°C.

Polyester
Polyester is a chemical-resistant material. It is ideally suited to printing, shaping, and punching. Polyester is resistant to UV radiation and absorbs little moisture. The polyester used by Phoenix Contact is silicone and halogen-free. Depending on its composition, it is suitable for use in temperatures between -40°C and +150°C.

Polyolefin
Polyolefines are semi-crystalline thermoplastics, which can be easily processed as extrusion profiles (shrink sleeves). They are characterized by good chemical resistance. Silicone-free, temperature range: -55°C to +125°C.

Polycarbonate (PC)
Polycarbonate has high mechanical strength and chemical resistance. Rigidity, dimensional stability, and good heat distortion resistance are further distinguishing features of this material. Polycarbonate is used to manufacture particularly smooth and stable marking materials. The polycarbonate used by Phoenix Contact is silicone and halogen-free. It absorbs little moisture and is suitable for use at temperatures between -40 °C and +125 °C.

Polyurethane (PU)
Thermoplastic polyurethane is a highly-flexible and also extremely tear-proof material. PU is chemically very resistant. The material used by Phoenix Contact is free from halogen and attains the inflammability class UL 94 V0. Temperature range: -25 °C to +80 °C.

Polyimide (PI)
Polyimide is a high-performance plastic and is distinguished by its high resistance to weather conditions and chemicals. The material is free from silicon and halogen. In addition, it also has a very high resistance to temperature. Temperature range of polyimide foil: permanent exposure from -40 °C to +170°C, brief exposure up to +398 °C.

Polyamide (PA)
Even at high operating temperatures, polyamide has excellent electrical, mechanical, chemical and thermal properties. Brief peak temperatures of up to 200°C are permitted as a result of heat aging stabilization. PA belongs to inflammability class V2 to V0 as per UL 94. The polyamide used by Phoenix Contact is silicone and halogen-free and is suitable for use in temperatures between -60°C and +125°C.

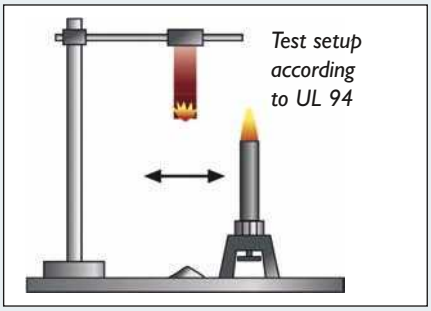
Inflammability classification

UL 94

UL 94 describes inflammability tests that have gained particular importance in the field of electrotechnology. Behavior in fire is the main focus. Items are classified according to either UL 94 HB (Horizontal Burn) or UL 94 V (Vertical Burn). The test setup is such that the 94 V0/1/2 classifications are stricter than the 94 HB classification.

UL 94 V0/1/2
After conditioning, the test bar is vertically clamped and flame-treated several times for 10 seconds each. Between the flame treatments, the time until the test bar is extinguished is measured. Afterwards, the afterburning times and the drip behavior are evaluated. The test procedure laid down by this standard is not suitable for foils and/or very thin test objects that shrink under the heat of the flame.

The plastic used for Phoenix Contact products fulfills the higher-grade criteria.


Test setup according to UL 94

Classification

	UL 94 V0	UL 94 V1	UL 94 V2	UL 94 HB
Burning time after each flame treatment	≤ 10 s	≤ 30 s	≤ 30 s	–
Total burning time after 10 flame treatments	≤ 50 s	≤ 250 s	≤ 250 s	–
Glowing time after the 2nd flame treatment	≤ 30 s	≤ 60 s	≤ 60 s	–
Complete burn-off	No	No	No	Yes
Inflammation of the absorbent cotton under the sample	No	No	Yes	–

Halogen-free protection against flames

DIN EN ISO 1043-4

Halogens are the chemical elements astatine, fluorine, chlorine, bromine, and iodine. One characteristic of the halogen compounds of bromine and chlorine relates to the reduction in the degree of inflammability when used in plastics. In the event of fire, poisonous corrosive gases are formed, which can also lead to secondary damage as a result of the extinguishing water. For this reason, wherever possible, Phoenix Contact does not use any flame protection agents which contain halogen or other additives. Polyamide, polycarbonate, polyester, polyurethane and polyolefines feature halogen-free flame protection systems.

Resistance to oil and chemicals

DIN EN ISO 175

Physical and/or chemical processes/reactions can occur as a result of external media, such as liquids or gases. This can result in a change to the plastic's properties, the plastic becoming damaged or even destroyed. Imprints and labels can also be affected by these changes.

In order to prevent this from happening, Phoenix Contact uses only plastics and printing/labeling materials which have been tested in accordance with DIN EN ISO 175.

Chemical	Weight %
Alkalis	
Sodium hydroxide solution	3
Potassium hydroxide solution	3
Ammonium hydroxide (ammonia water)	25
Alcohols	
Ethanol	100
1-propanol	100
2-propanol	100
Diethylene glycol	100
Aldehyde/ketones	
Ethyl acetate	100
Oils, greases, aliphatic and aromatic hydrocarbons	
IRM 902	100
IRM 903	100
ASTM No. 1	100
Xylol	100
Test benzene (180/220)	100
Hycut SU 68	100
Hycut SET 46	100
Shell Tellus 92	100
Aqueous salt solutions	
Sodium chloride	5
Potassium chloride	5
Ammonium chloride (ammonia solution)	100

Resistance to solvents

EN 60464-2:2001

Imprints and labels must be resistant to solvent vapors. Therefore, in accordance with the aforementioned standard, exposure to solvents is continued over 10 days in the following atmospheres:

- Acetone
- n-hexane
- Ethanol

The labels and imprints must still be legible after the 10-day exposure.

Phoenix Contact marking materials are solvent-resistant and fulfill the stringent requirements.

UV light resistance

DIN EN ISO 4892-2 and DIN EN ISO 60068-2-5

In addition to infrared radiation, the solar radiation affecting the surface of the earth has radiation ranges from the UV-A and UV-B spectrum. Depending on the plastic used, the UV-B part of the wavelength of 320 nm induces a more or less strong molecular decomposition that is responsible for a considerable restriction of the plastic's mechanical property profile. Even the properties of imprints and labels can sustain damage to a greater or lesser extent due to this UV radiation. This results in fading and can even lead to complete illegibility.

If plastics and their imprints and labels are often subjected to day/night cycles outdoors, condensation may appear on the surface in the form of water droplets, which can act in a similar way to magnifying glasses when the sunshine returns, thus intensifying the radiation effect. The UV-B part of the solar spectrum in particular leads to an impairment of the plastic's mechanical property profile.

Marking materials from Phoenix Contact can be stored in dry as well as humid atmospheres under UV radiation and are tested in accordance with the aforementioned standards. The properties of the plastic and the legibility of the imprints and labels are checked after the test.

Abrasion and wipe resistance

DIN EN 61010-1

Labels and imprints must be resistant to the standard cleaning agents used in the industry. Therefore, at Phoenix Contact, labels and imprints are rubbed using a soft cloth with water, isopropanol, petroleum ether, and n-hexane. The labels and imprints must still be legible after the test.

Phoenix Contact marking materials meet stringent requirements with regard to abrasion and wipe resistance and can thus be used in all applications.

Scratch resistance

DIN EN ISO 1518

Labels and imprints must also be resistant to external, point and/or linear mechanical loads. For this reason, Phoenix Contact tests all labels and imprints for scratch resistance in accordance with the aforementioned standard. The test is carried out by applying a scratching tool with a hemispherical tip (Ø 1 mm) to the test objects. Depending on the printing procedure, a force of between 2 N and 6 N is applied. This is followed by a visual and microscopic inspection of the test objects.

Phoenix Contact marking materials meet these stringent mechanical requirements.

Resistance to abrasion

KIMW 003, Part 1 In-house standard of the Lüdenscheid Plastics Institute

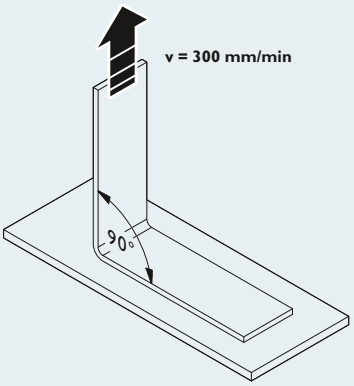
Labels and imprints must be resistant to externally applied surface loads. Therefore, at Phoenix Contact, labels and imprints are subjected to various numbers of strokes (1000, 10,000, 30,000) using a felt disk (hardness H1 according to DIN 61200) with a specific pressure force (1 N, 2 N and/or 4 N). Classification into the various load classes presented in the standard depends on the pressure force that leads to damage to the printing with reference to the number of strokes.

The imprints and labels at Phoenix Contact comply with the highest load class K9 (30,000 strokes with 4 N pressure force).

Adhesive strength test

based on FINAT test method No. 2

The purpose of this test is to compare the adhesive strength of labels on various basic materials. To this end, a strip of labels (25 mm x 175 mm) is applied to the respective basic material with a specified force. After a defined storage period, the strip is removed from the basic material at an angle of 90° and with a speed of 300 mm/min. The adhesive strength is specified in N/25 mm. The test thus enables the selection of the most suitable label for the application.



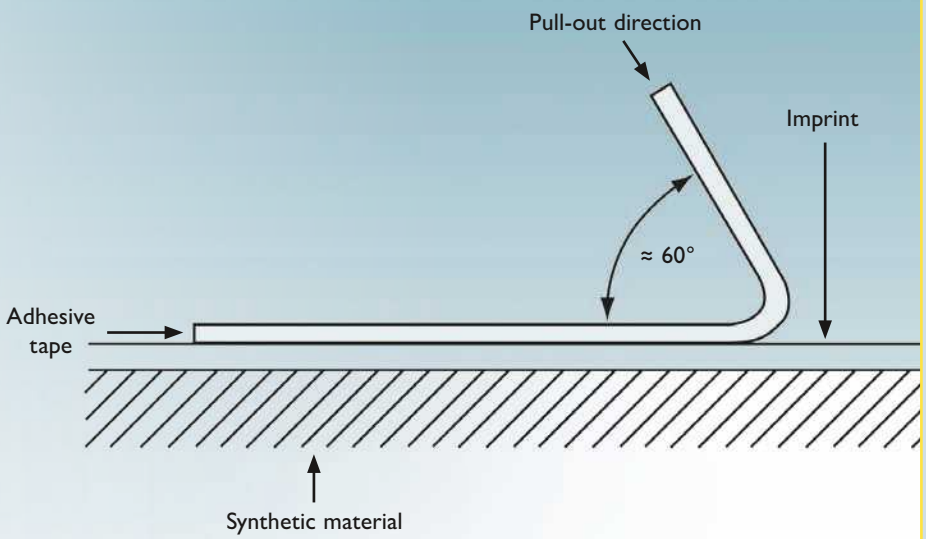
Grid test

DIN EN ISO 2409

A "Sellotape test" is conducted in accordance with this standard.
A transparent self-adhesive tape (e.g., Sellotape) with an adhesive force of 10±1 N is applied to the labeling or printing to be tested and is then removed from the surface with an angle of 60° to the pull-out direction with a speed of approx. 1 cm/s.

There should be no marks from the printing on the adhesive tape after the test.

Phoenix Contact marking materials are tough and resistant to peeling.



Printed circuit board

Use Phoenix Contact labels for secure and reliable marking of your PCBs.

We can provide ESD-safe materials for labeling and marking components that are particularly sensitive.

Our range features residue-free removable labels for temporary marking during production.

Our high-temperature-resistant material is easily able to withstand the prevailing temperatures in reflow and wave soldering procedures.

Protection against static discharge

ESD-safe labels can be used to mark components and PCBs that are at risk from electrostatic discharge.

Removable labeling

A special adhesive ensures both the durability of the marking throughout the production process and residue-free removal (should this be necessary).

Reliable marking

Labels that are resistant to high temperatures ensure reliable marking of components and PCBs during the production process and beyond.

Product overview for marking PCBs

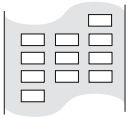
EML-ESD labels for sensitive components

EML-ESD labels can be used to mark PCBs without the risk of the component being damaged by electrostatic discharge.

Material data EML-ESD

Material: Polyester
Free from silicone and halogen
Temperature: -40 °C to +150 °C

Multi-web version



Single-web version

	Lettering field size [mm]	Markers per roll	Type	Order No. WH
Standard roll, multi-web version – printing with THERMOMARK ROLL and THERMOMARK ROLL X1				
	8x8	4000	EML-ESD (8x8)R	0830564
	15x6	4000	EML-ESD (15x6)R	0830565
	15x15	4000	EML-ESD (15x15)R	0830566
	20x7	4000	EML-ESD (20x7)R	0830567
	24x4	4000	EML-ESD (24x4)R	0830568
	25x8	4000	EML-ESD (25x8)R	0830569
	25.4x12.7	2500	EML-ESD (25,4x12,7)R	0830570
	32x10	2500	EML-ESD (32x10)R	0830571
	35x6.5	2500	EML-ESD (35x6,5)R	0830572
	40x15	2500	EML-ESD (40x15)R	0830573
	45x5	2500	EML-ESD (45x5)R	0830574
	50x10	1000	EML-ESD (50x10)R	0830575
Large roll, single-web version – printing with THERMOMARK ROLL X1 or with THERMOMARK ROLL with external media hub				
	8x8	10000	EML-ESD (8x8)RL-T	0830576
	15x6	10000	EML-ESD (15x6)RL-T	0830577
	15x15	8000	EML-ESD (15x15)RL-T	0830578
	20x7	10000	EML-ESD (20x7)RL-T	0830579
	24x4	10000	EML-ESD (24x4)RL-T	0830580
	25x8	10000	EML-ESD (25x8)RL-T	0830581
	25.4x12.7	10000	EML-ESD (25,4x12,7)RL-T	0830582
	32x10	10000	EML-ESD (32x10)RL-T	0830583
	35x6.5	10000	EML-ESD (35x6,5)RL-T	0830584
	40x15	8000	EML-ESD (40x15)RL-T	0830585
	45x5	10000	EML-ESD (45x5)RL-T	0830586
	50x10	10000	EML-ESD (50x10)RL-T	0830587

Product overview for marking PCBs

EML-HT labels for high-temperature applications

EML-HT labels are particularly suitable for marking PCBs. As they are resistant to extremely high temperatures (up to 398 °C), they will come through reflow and wave soldering procedures unscathed.

Material data EML-HT

Material: Polyimide
Free from silicone and halogen
Temperature:
-40 °C to +170 °C (permanent
Up to +398 °C (short-term)

	Lettering field size [mm]	Markers per roll	Type	Order No. WH
Standard roll, multi-web version – printing with THERMOMARK ROLL and THERMOMARK ROLL X1				
	8x8	4000	EML-HT (8x8) R	0800340
	15x6	4000	EML-HT (15x6)R	0830644
	15x15	4000	EML-HT (15x15) R	0800341
	20x7	4000	EML-HT (20x7)R	0830645
	24x4	4000	EML-HT (24x4)R	0830646
	25x8	4000	EML-HT (25x8)R	0830647
	25.4x12.7	2500	EML-HT (25,4x12,7)R	0830648
	32x10	2500	EML-HT (32x10)R	0830649
	35x6.5	2500	EML-HT (35x6,5)R	0830650
	40x15	1000	EML-HT (40x15) R	0800339
	45x5	2500	EML-HT (45x5) R	0800337
	50x10	1000	EML-HT (50x10) R	0800338
Large roll, single-web version – printing with THERMOMARK ROLL X1 or with THERMOMARK ROLL with external media hub				
	8x8	10000	EML-HT (8x8)RL-T	0830651
	15x6	10000	EML-HT (15x6)RL-T	0830652
	15x15	8000	EML-HT (15x15)RL-T	0830653
	20x7	10000	EML-HT (20x7)RL-T	0830654
	24x4	10000	EML-HT (24x4)RL-T	0830655
	25x8	10000	EML-HT (25x8)RL-T	0830656
	25.4x12.7	10000	EML-HT (25,4x12,7)RL-T	0830657
	32x10	10000	EML-HT (32x10)RL-T	0830658
	35x6.5	10000	EML-HT (35x6,5)RL-T	0830659
	40x15	8000	EML-HT (40x15)RL-T	0830660
	45x5	10000	EML-HT (45x5)RL-T	0830661
	50x10	10000	EML-HT (50x10)RL-T	0830662

Product overview for marking PCBs

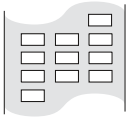
EML-RM removable labels

EML-RM labels can be removed without leaving behind any residue. As such they are particularly suitable for temporary marking.

Material data EML-RM

Material: Polyester
Free from silicone and halogen
Temperature: -40 °C to +120 °C

Multi-web version



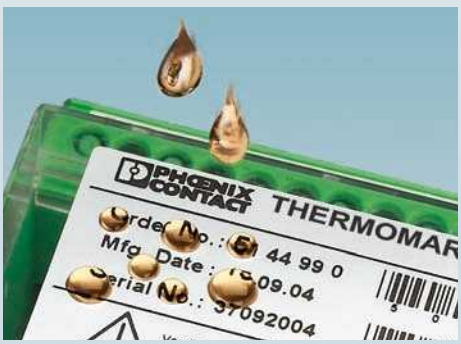
Single-web version

	Lettering field size [mm]	Markers per roll	Type	Order No. WH
Standard roll, multi-web version – printing with THERMOMARK ROLL and THERMOMARK ROLL X1				
	8x8	4000	EML-RM (8x8)R	0830528
	15x6	4000	EML-RM (15x6)R	0830529
	15x15	4000	EML-RM (15x15)R	0830530
	20x7	4000	EML-RM (20x7)R	0830531
	24x4	4000	EML-RM (24x4)R	0830532
	25x8	4000	EML-RM (25x8)R	0830533
	25.4x12.7	2500	EML-RM (25,4x12,7)R	0830534
	32x10	2500	EML-RM (32x10)R	0830535
	35x6.5	2500	EML-RM (35x6,5)R	0830536
	40x15	2500	EML-RM (40x15)R	0830537
	45x5	2500	EML-RM (45x5)R	0830538
	50x10	1000	EML-RM (50x10)R	0830539
Large roll, single-web version – printing with THERMOMARK ROLL X1 or with THERMOMARK ROLL with external media hub				
	8x8	10000	EML-RM (8x8)RL-T	0830540
	15x6	10000	EML-RM (15x6)RL-T	0830541
	15x15	8000	EML-RM (15x15)RL-T	0830542
	20x7	10000	EML-RM (20x7)RL-T	0830543
	24x4	10000	EML-RM (24x4)RL-T	0830544
	25x8	10000	EML-RM (25x8)RL-T	0830545
	25.4x12.7	10000	EML-RM (25,4x12,7)RL-T	0830546
	32x10	10000	EML-RM (32x10)RL-T	0830547
	35x6.5	10000	EML-RM (35x6,5)RL-T	0830548
	40x15	8000	EML-RM (40x15)RL-T	0830549
	45x5	10000	EML-RM (45x5)RL-T	0830550
	50x10	10000	EML-RM (50x10)RL-T	0830551

Housing marking

Clear housing labels can make your products more successful. Impress your customers with perfectly designed front panels, protect yourself against piracy with anti-forgery rating plates, and ensure traceability with serial numbers that are affixed permanently.

Resistant labels from Phoenix Contact are ideal for use on plastic housings and lend your device a professional design.



High resistance

High-quality materials provide an assurance of high resistance to oils and solvents.

Permanently legible

Housing labels that are wipe-proof and scratch-proof ensure that your product will remain clearly identifiable for its entire service life.

Protection against tampering

As these rating plates clearly show attempts at tampering, they cannot be reused.

Product overview for housing marking

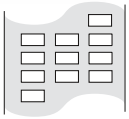
EML rugged polyester labels

EML labels can be used for universal marking. They are particularly resistant to solvents and oils.

Material data EML

Material: Polyester
Free from silicone and halogen
Temperature: -40 °C to +150 °C

Multi-web version



Lettering field size [mm]	Markers per roll	Type	Order No. WH	Order No. YE	Order No. SR
Standard roll, multi-web version – printing with THERMOMARK ROLL and THERMOMARK ROLL X1					
10x4	10000	EML (10x4) R	0815583		
10x7	10000	EML (10x7) R …	0816663	0816676	
15x6	2500	EML (15x6) R YE		0819288	
15x9	2500	EML (15x9) R …	0815677	0816045	0816032
16.5x5	2500	EML (16,5x5) R …	0816702	0816728	
16x7	2500	EML (16x7) R …	0818001	0816731	
17.5x8	2500	EML (17,5x8) R …	0816744	0816757	
19x6	2500	EML (19x6) R	0816760	0800107	
20x7	2500	EML (20x7) R YE		0816773	
20x8	2500	EML (20x8) R …	0816786	0816799	
21.5x21.5	2500	EML (21,5x21,5) R SR			0816812
24x4	2500	EML (24x4) R	0800061		
25.4x12.7	2500	EML (25,4x12,7) R …	0816825	0816838	
26.5x7.5	1000	EML (26,5x7,5) R			0816841
26.5x12	2500	EML (26,5x12) R			0816854
26.5x17.5	2500	EML (26,5x17,5) R …		0816896	0816883
26.5x18.5	2500	EML (26,5x18,5) R			0816906
26.5x26.5	2500	EML (26,5x26,5) R …			0816919
30x20	2500	EML (30x20) R …	0816922	0816935	
32x25	1500	EML (32x25) R YE		0800020	
38x17	2500	EML (38x17) R	0816951		
40x8	1000	EML (40x8) R	0816980		
40x15	2500	EML (40x15) R SR			0815729
40x25	1000	EML (40x25) R …	0818027	0816977	
51x25	1000	EML (51x25) R …	0817028	0817031	0817002
70x32	1000	EML (70x32) R …	0817060	0817073	0817057
70x50	400	EML (70x50) R …	0817099		0817086
90x5	2500	EML (90x5) R	0817109		
100x40	300	EML (100x40) R	0800286		
100x73	300	EML (100x73) R …	0817125	0817138	0817112
100x90	250	EML (100x90) R …	0817154		0817141
Large roll – printing with THERMOMARK ROLL X1 or with THERMOMARK ROLL with external media hub					
16.5x5	10000	EML (16,5x5) RL	0816113	0816126	
17.5x8	10000	EML (17,5x8) RL		0816139	
18x6	10000	EML (18x6) RL YE		0828460	
25.4x12.7	10000	EML (25,4x12,7) RL	0816087		
38.1x19	10000	EML (38,1x19) RL	0816171		
50.8x25.4	3000	EML (50,8x25,4) RL	0816184		
69.8x31.8	10000	EML (69,8x31,8) RL	0816197		
76.2x6.5	10000	EML (76,2x6,5) RL YE		0816207	
101.6x25.4	10000	EML (101,6x25,4) RL SR			0815790

Product overview for housing marking

US-EML rugged polyester labels

EML material is also available in card format for printing with the THERMOMARK CARD.

Material data US-EML

Material: Polyester
Free from silicone and halogen
Temperature: -40 °C to +150 °C

Lettering field size [mm]	Markers per card	Type	Order No. WH	Order No. YE	Order No. SR
UniSheet card format – printing with THERMOMARK CARD					
17.5x8	80	US-EML (17,5x8)	0800461	0800463	
20x8	64	US-EML (20x8)	0800458	0800460	
104x3.8	34	US-EML (104x3,8)	0800464		
104x140	1	US-EML (104x140)	0800465	0800467	0800466

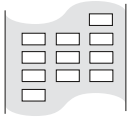
EML-HA high adhesive strength labels

The particularly high adhesive strength of EML-HA labels makes for optimum adhesion to low-energy materials or materials with complex structures.

Material data EML-HA

Material: Polyester
Free from silicone and halogen
Temperature: -40 °C to +150 °C

Multi-web version



Lettering field size [mm]	Markers per roll	Type	Order No. WH	Order No. SR
Standard roll, multi-web version – printing with THERMOMARK ROLL and THERMOMARK ROLL X1				
15x9	2500	EML-HA (15x9)R	0830600	
19x6	2500	EML-HA (19x6)R	0830601	
20x20	2500	EML-HA (20x20)R	0830602	
26.5x12	2500	EML-HA (26,5x12)R	0830603	
40x8	2500	EML-HA (40x8)R	0830604	
40x15	1000	EML-HA (40x15)R	0830605	
51x25	1000	EML-HA (51x25)R	0830729	
60x30	1000	EML-HA (60x30)R	0830606	
70x32	1000	EML-HA (70x32)R	0830607	
70x50	1000	EML-HA (70x50)R	0830730	
70x150	250	EML-HA (70x150)R	0830608	
76x51	1000	EML-HA (76x51)R	0830609	
85x32	1000	EML-HA (85x32)R	0830610	
100x73	300	EML-HA (100x73)R	0830731	
100x90	250	EML-HA (100x90)R	0830732	
15x9	2500	EML-HA (15x9)R SR		0830611
19x6	2500	EML-HA (19x6)R SR		0830612
20x20	2500	EML-HA (20x20)R SR		0830613
26.5x12	2500	EML-HA (26,5x12)R SR		0830614
40x8	2500	EML-HA (40x8)R SR		0830615
40x15	1000	EML-HA (40x15)R SR		0830616
51x25	1000	EML-HA (51x25)R SR		0830733
60x30	1000	EML-HA (60x30)R SR		0830617
70x32	1000	EML-HA (70x32)R SR		0830618
70x50	1000	EML-HA (70x50)R SR		0830734
70x150	250	EML-HA (70x150)R SR		0830619
76x51	1000	EML-HA (76x51)R SR		0830620
85x32	1000	EML-HA (85x32)R SR		0830621
100x73	300	EML-HA (100x73)R SR		0830735
100x90	250	EML-HA (100x90)R SR		0830736

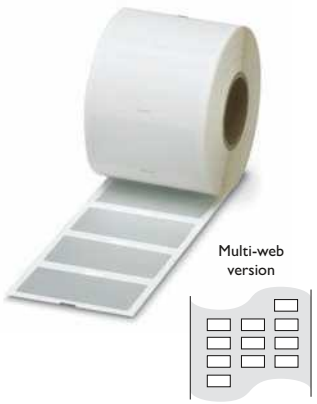
Product overview for housing marking

Tamper-proof labels EMLS

EMLS labels show evidence of tampering by leaving behind a pattern both in the label and on the surface of the device.

Material data EMLS

Material: Polyester
Free from silicone and halogen
Temperature: -40 °C to +150 °C



	Lettering field size [mm]	Markers per roll	Type	Order No. SR
Standard roll, multi-web version – printing with THERMOMARK ROLL and THERMOMARK ROLL X1				
	15x9	2500	EMLS (15x9) R SR	0800347
	19x6	2500	EMLS (19x6) R SR	0800343
	20x20	1000	EMLS (20x20) R SR	0800344
	26.5x12	1000	EMLS (26.5x12) R SR	0800353
	38.1x19	1000	EMLS (38.1x19) R SR	0800354
	40x8	1000	EMLS (40x8) R SR	0800348
	45x15	1000	EMLS (45x15) R SR	0800345
	60x30	500	EMLS (60x30) R SR	0800355
	70x32	500	EMLS (70x32) R SR	0800346
	70x150	100	EMLS (70x150) R SR	0800351
	76x51	250	EMLS (76x51) R SR	0800350
	85x32	250	EMLS (85x32) R SR	0800356

EMLC and EMLF labels offering particular flexibility

The material from which the EMLC labels are made makes them very flexible; they can even be attached around edges. EMLF is particularly suited for uneven and rough surfaces.

Material data EMLC

Material: PA
Free from silicone and halogen
Temperature: -40 °C to +150 °C

Material data EMLF

Material: PVC
Free from silicone
Temperature: -40 °C to +110 °C

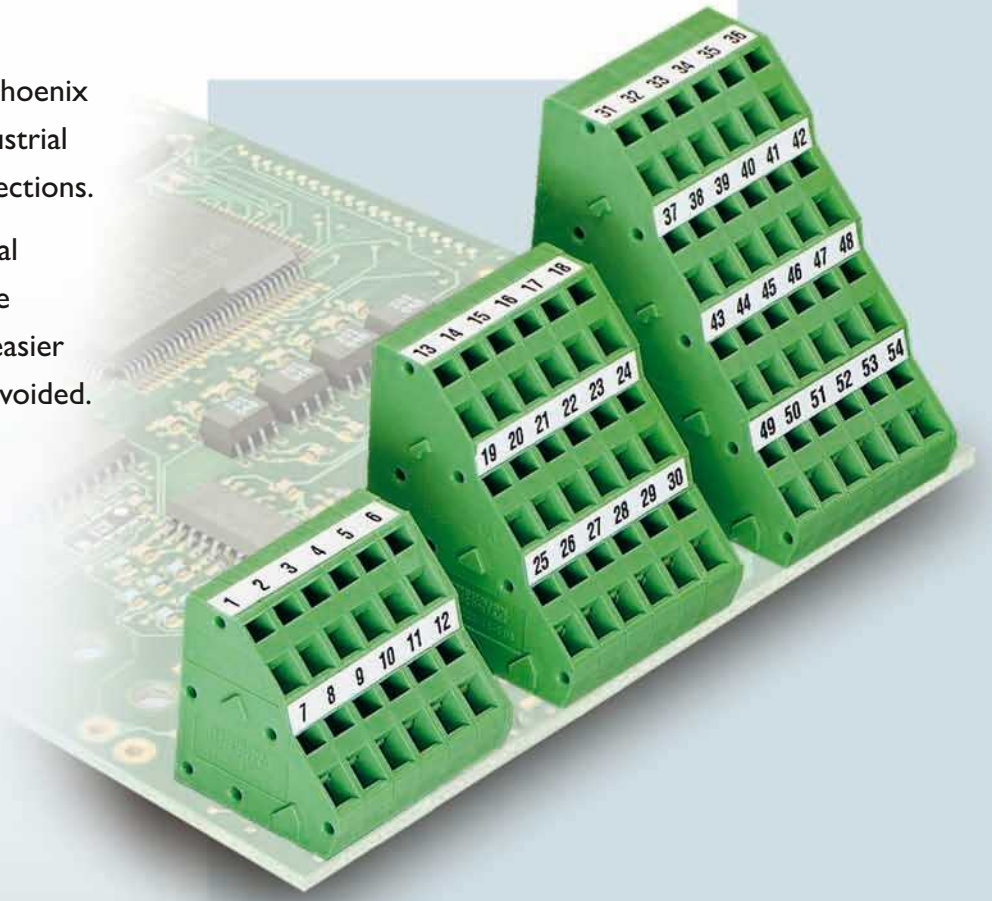
	Lettering field size [mm]	Markers per roll	Type	Order No. WH	YE	SR	TR
Standard roll, multi-web version – printing with THERMOMARK ROLL and THERMOMARK ROLL X1							
	15x9	2500	EMLC (15x9) R YE		0800236		
	17.5x8	2500	EMLC (17,5x8) R YE		0800237		
	20x8	2500	EMLC (20x8) R YE	0815680	0800235		
	25x8	2500	EMLC (25x8) R YE		0800240		
	25.4x12.7	2500	EMLC (25,4x12,7) R YE		0800238		
	38x17	1000	EMLC (38x17) R YE		0800557		
	40x8	1000	EMLC (40x8) R …	0800554	0800555		
	51x25	750	EMLC (51x25) R YE		0800558		

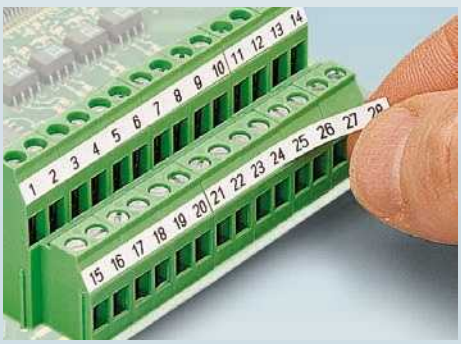
	Lettering field size [mm]	Meter per roll	Type	Order No. WH	YE	SR	TR
Standard roll, continuous version – printing with THERMOMARK ROLL and THERMOMARK ROLL X1							
	108xE	40 m	EMLF (108xE) R	0800549	0800550	0800551	0800552

PCB terminal block and plug-in connector marking

TML and SK marker strips from Phoenix Contact are the international industrial standard for marking device connections.

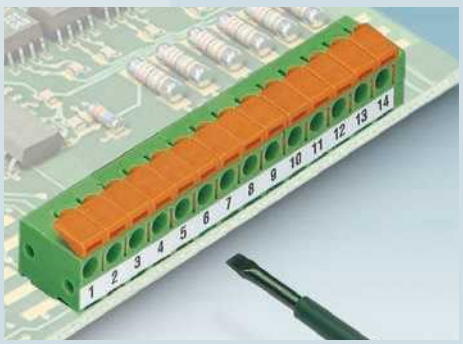
By labeling the connection terminal blocks individually, you simplify the wiring process. Connections are easier to identify and wiring errors are avoided. This increases acceptance of your products by users.





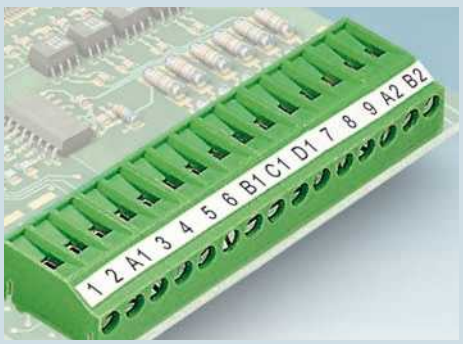
Marking after installation

Unprinted PCB terminal blocks can be labeled quickly and clearly even after they have been installed.



Permanent marking

With TML and SK labeling strips, you get an absolute assurance of optimum adhesion to the high-quality plastics from which your connection terminal blocks are made.



Individual labeling

Even very specific marking requirements such as special symbols can be met with ease.

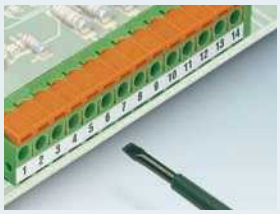
Product overview for labeling PCB terminal blocks and plug-in connectors

Self-adhesive marker strips for TML and SK terminal blocks

TML and SK strips were developed specifically for marking connection terminal blocks and plugs. They are a reliable option for long-lasting marking.

Material data TML and SK

Material: Polyester
Free from silicone and halogen
Temperature: -40 °C to +150 °C



	Height of strip [mm]	Length of strips [mm]	Labels per roll	Type	Order No. WH
	Standard roll, strips horizontally on the role – printing with THERMOMARK ROLL and THERMOMARK ROLL X1				
	2.8	104	2500	TML (104x2,8) R	0801832
	3.8	104	2500	TML (104x3,8) R	0801833
	5	104	2500	TML (104x5) R	0801834
	10	104	1500	TML (104x10) R	0801835

	Height of strip [mm]	Length per roll [m]	Strips per roll	Type	Order No. WH
	Standard roll, strips vertically on the role – printing with THERMOMARK ROLL and THERMOMARK ROLL X1				
	2.8	30	14	TML (Ex2,8) R	0801836
	3.8	30	12	TML (Ex3,8) R	0801837
	5	30	10	TML (Ex5) R	0801838
	10	30	6	TML (Ex10) R	0801839

	Height of strip [mm]	Length of strips [mm]	Strips per card	Type	Order No. WH
	UniSheet card format – printing with THERMOMARK CARD				
	2.8	104	14	US-TML (104x2,8)	0830767
	3.8	104	12	US-TML (104x3,8)	0830768
	5	104	10	US-TML (104x5)	0830769
	10	104	6	US-TML (104x10)	0830770

	Height of strip [mm]	Pitch [mm]	Strips per card	Type	Order No. WH
	Cards, preprinted with numbers (1 – 10, 11 – 20, ..., 91 – 100)				
	2.8	2.54	14	SK 2,54/2,8:FORTL.ZAHLEN	0804853
	2.8	3.5	14	SK 3,5/2,8:FORTL.ZAHLEN	0804073
	2.8	3.81	14	SK 3,81/2,8:FORTL.ZAHLEN	0804109
	2.8	5.08	14	SK 5,08/2,8:FORTL.ZAHLEN	0804280
	3.8	5	12	SK 5/3,8:FORTL.ZAHLEN	0804183
	3.8	5.08	12	SK 5,08/3,8:FORTL.ZAHLEN	0804293
	3.8	6.2	12	SK 6,2/3,8:FORTL.ZAHLEN	0804374
	3.8	7.5	12	SK 7,5/3,8:FORTL.ZAHLEN	0804455
	3.8	7.62	12	SK 7,62/3,8:FORTL.ZAHLEN	0804549
	5	7.5	10	SK 7,5/5:FORTL.ZAHLEN	0804468
	5	7.62	10	SK 7,62/5:FORTL.ZAHLEN	0804552

printed horizontally

1	2	3	4	5	6	7	8	9	10

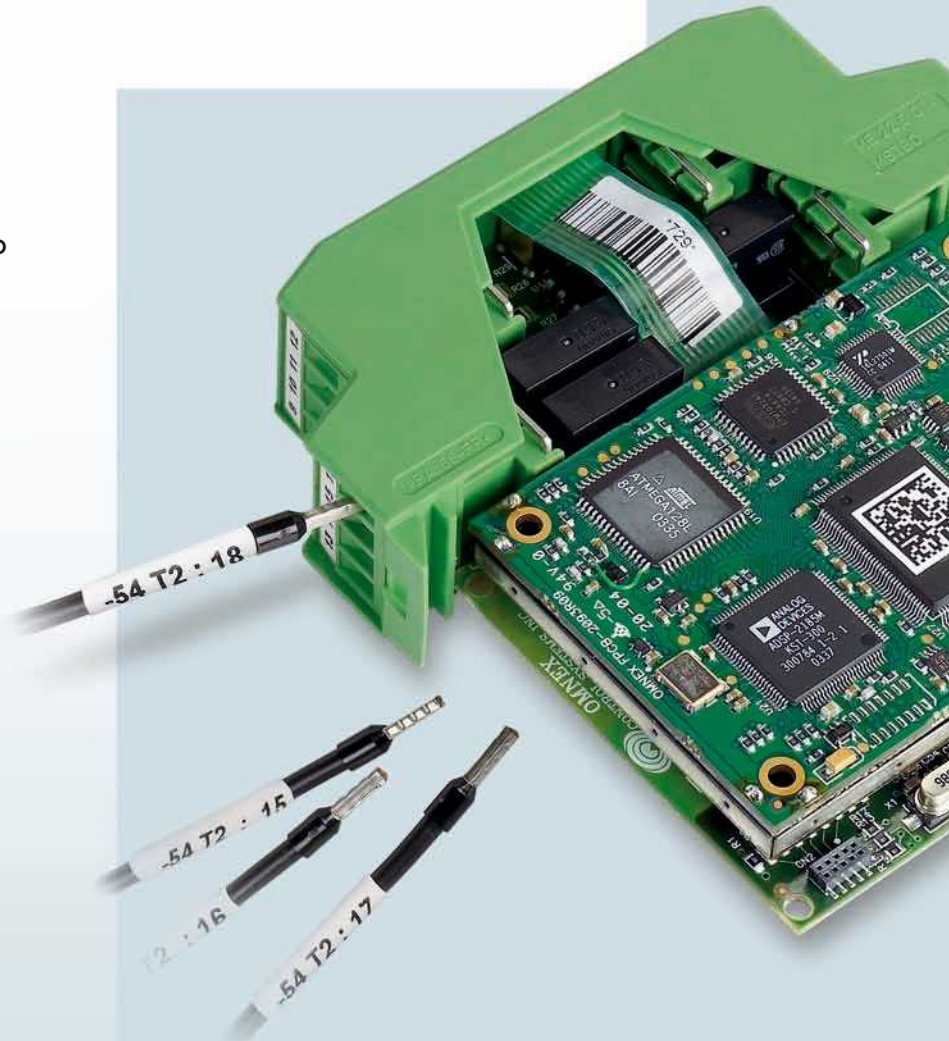
Example configuration: standard labeling

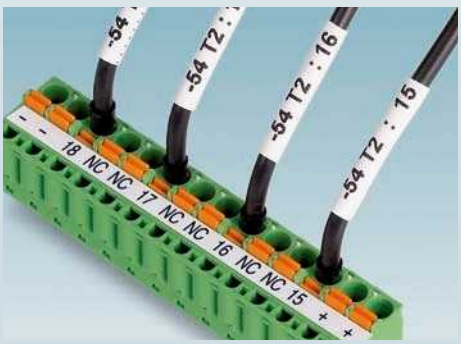
Horizontal consecutive numbering from 1 to 10 is required for 120 identical PCB terminal block strips with 5 mm pitch. Since each marker card has 12 strips, order as follows:

Quantity	Product no.	Numbers from	Numbers to
10	0804183	1	10

Cable and conductor marking

Phoenix Contact can provide the ideal marking option for any application. Just select an assembly method. The markers can be threaded on, clipped or glued into place, or attached with cable binders.





Marking that stays put

Printed shrink sleeve is a particularly durable method of marking.

Fast mounting

Thread-on markers enable multiple wires to be marked in next to no time.

Versatility in application

With self-laminating labels, even flat-ribbon cables can be marked clearly and without abrasion.

Product overview for cable and conductor marking

WMS shrink sleeve (pre-assembled)

The shrinkable WMS marker sleeves are ideally suited to captive cable and conductor marking. The halogen-free, perforated material can be easily separated into smaller sections. They are attached to the conductor by simply threading them on and removing them from the carrier.

Material data WMS

Material: Polyolefine
Free from halogen
Temperature: -55 °C to +135 °C

	Conductor diameter [mm]	Lettering field size [mm]	Markers per roll	Type	Order No. WH	Order No. YE
Standard roll – printing with THERMOMARK ROLL X1 or with THERMOMARK ROLL with external media hub						
	0.8 – 2.4	15x4	1000	WMS 2,4 (15x4) R	0800379	0800412
	0.8 – 2.4	30x4	500	WMS 2,4 (30x4) R	0800373	0800407
	0.8 – 2.4	60x4	250	WMS 2,4 (60x4) R	0800363	0800398
	1.0 – 3.2	15x5	1000	WMS 3,2 (15x5) R	0800380	0800413
	1.0 – 3.2	30x5	500	WMS 3,2 (30x5) R	0800374	0800408
	1.0 – 3.2	60x5	250	WMS 3,2 (60x5) R	0800364	0800399
	1.6 – 4.8	15x9	1000	WMS 4,8 (15x9) R	0800382	0800414
	1.6 – 4.8	30x9	500	WMS 4,8 (30x9) R	0800375	0800409
	1.6 – 4.8	60x9	250	WMS 4,8 (60x9) R	0800366	0800400
	2.1 – 6.4	30x10	500	WMS 6,4 (30x10) R	0800376	0800410
	2.1 – 6.4	60x10	250	WMS 6,4 (60x10) R	0800367	0800401
	3.1 – 9.5	30x16	500	WMS 9,5 (30x16) R	0800377	0800411
	3.1 – 9.5	60x16	250	WMS 9,5 (60x16) R	0800368	0800402
	4.2 – 12.7	60x20	250	WMS 12,7 (60x20) R	0800369	0800403
	6.4 – 19.1	60x30	250	WMS 19,1 (60x30) R	0800370	0800404
	8.5 – 25.4	60x40	250	WMS 25,4 (60x40) R	0800371	0800405
	12.7 – 38.1	60x60	250	WMS 38,1 (60x60) R	0800372	0800406
Large roll – printing with THERMOMARK ROLL X1 and THERMOMARK ROLL with external media hub each						
	0.8 – 2.4	15x4	4000	WMS 2,4 (15x4) RL	0800389	
	0.8 – 2.4	30x4	2000	WMS 2,4 (30x4) RL	0800386	
	0.8 – 2.4	60x4	1000	WMS 2,4 (60x4) RL	0800383	
	1.0 – 3.2	15x5	4000	WMS 3,2 (15x5) RL	0800390	
	1.0 – 3.2	30x5	2000	WMS 3,2 (30x5) RL	0800387	
	1.0 – 3.2	60x5	1000	WMS 3,2 (60x5) RL	0800384	
	1.6 – 4.8	15x9	4000	WMS 4,8 (15x9) RL	0800391	
	1.6 – 4.8	30x9	2000	WMS 4,8 (30x9) RL	0800388	
	1.6 – 4.8	60x9	1000	WMS 4,8 (60x9) RL	0800385	
Extra large roll – printing with THERMOMARK ROLL X1 and THERMOMARK ROLL with external media hub each						
	0.8 – 2.4	15x4	10000	WMS 2,4 (15x4) RXL	0800396	
	0.8 – 2.4	30x4	5000	WMS 2,4 (30x4) RXL	0800394	
	0.8 – 2.4	60x4	2500	WMS 2,4 (60x4) RXL	0800392	
	1.6 – 4.8	15x9	10000	WMS 4,8 (15x9) RXL	0800397	
	1.6 – 4.8	30x9	5000	WMS 4,8 (30x9) RXL	0800395	
	1.6 – 4.8	60x9	2500	WMS 4,8 (60x9) RXL	0800393	

Product overview for cable and conductor marking

WMS shrink sleeve (continuous)

The shrinkable WMS marker sleeves are perfectly suited to captive cable and conductor marking. The shrinkable WMS… marker sleeves are perfectly suited to captive cable and conductor marking. The halogen-free, thin-walled sleeves can be cut to any length using the perforation cutter and are then easy to separate.

Material data WMS

Material: Polyolefine
Free from halogen
Temperature: -55 °C to +135 °C

Conductor diameter [mm]	Length per roll [m]	Type	Order No. WH	Order No. YE	Order No. BK
Standard roll – printing with THERMOMARK ROLL X1 and THERMOMARK ROLL with external media hub each					
0.8 – 2.4	30	WMS 2,4 (Ex4) R	0800289	0800300	0800415
1.0 – 3.2	30	WMS 3,2 (Ex5) R	0800290	0800301	0800416
1.6 – 4.8	30	WMS 4,8 (Ex9) R	0800291	0800302	0800418
2.1 – 6.4	25	WMS 6,4 (Ex10) R	0800292	0800303	0800419
3.1 – 9.5	20	WMS 9,5 (Ex16) R	0800293	0800304	0800421
4.2 – 12.7	20	WMS 12,7 (Ex20) R	0800294	0800305	0800422
6.4 – 19.1	20	WMS 19,1 (Ex30) R	0800295	0800306	0800423
8.5 – 25.4	15	WMS 25,4 (Ex40) R	0800296	0800308	0800424
12.7 – 38.1	15	WMS 38,1 (Ex60) R	0800298	0800309	0800425
16.9 – 50.8	15	WMS 50,8 (Ex80) R	0800299	0800311	0800426
Large roll – printing with THERMOMARK ROLL X1 and THERMOMARK ROLL with external media hub each					
0.8 – 2.4	120	WMS 2,4 (Ex4) RL	0800319	0800328	0800427
1.0 – 3.2	120	WMS 3,2 (Ex5) RL	0800320	0800329	0800428
1.6 – 4.8	120	WMS 4,8 (Ex9) RL	0800321	0800330	0800429
2.1 – 6.4	100	WMS 6,4 (Ex10) RL	0800322	0800331	0800430
3.1 – 9.5	80	WMS 9,5 (Ex16) RL	0800324	0800332	0800431
4.2 – 12.7	80	WMS 12,7 (Ex20) RL	0800325	0800333	0800432
6.4 – 19.1	80	WMS 19,1 (Ex30) RL	0800326	0800334	0800434
8.5 – 25.4	60	WMS 25,4 (Ex40) RL	0800327	0800335	0800435

Product overview for cable and conductor marking

WML and US-WML labels for cable lamination

The conductor marker labels consist of a labeling field and a transparent protective foil. This is wound over the labeling and protects it permanently against contamination and abrasion.

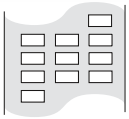
Material data WML

Material: PVC
Free from silicone
Temperature: -50 °C to +70 °C

Material data US-WML

Material: PVC
Free from silicone
Temperature: -50 °C to +70 °C

Multi-web version



Single-web version

	Conductor diameter [mm]	Lettering field size [mm]	Markers per roll	Type	Order No. WH	Order No. YE
Standard roll, multi-web version – printing with THERMOMARK ROLL and THERMOMARK ROLL X1						
	< 3	13x10	5000	WML 3 (13x10) R	0800073	
	< 5	25x10	3000	WML 5 (25x10) R	0817523	0830673
	< 6	13x13	7000	WML 6 (13x13) R	0816252	0830674
	< 7.5	13x13	4000	WML 7,5 (13x13) R	0800074	
	< 7.5	17x9	1500	WML 7,5 (17x9) R	0828444	
	< 7.5	25x13	2100	WML 7,5 (25x13) R	0800075	
	< 12	25x19	1000	WML 12 (25x19) R	0800076	
	< 14	25x19	1500	WML 14 (25x19) R	0817536	0817549
	< 14	38x19	1000	WML 14 (38x19) R	0817552	0830675
	< 18	12x12	2500	WML 18 (12x12) R	0817507	
	< 20	31x25	500	WML 20 (31x25) R	0828457	
	< 22	25x25	900	WML 22 (25x25) R	0800078	
	< 36	25x38	500	WML 36 (25x38) R	0817510	
	< 36	25x38	500	WML 36 (25x38) R	0817510	
	< 46	25x38	250	WML 46 (25x38) R	0800067	
Large roll, single-web version – printing with THERMOMARK ROLL X1 or with THERMOMARK ROLL with external media hub						
	< 5	25x10	10000	WML 5 (25x10) RL	0830676	
	< 6	13x13	15000	WML 6 (13x13) RL	0830677	
	< 14	25x19	5000	WML 14 (25x19) RL	0830678	
	< 14	38x19	3000	WML 14 (38x19) RL	0830679	

	Conductor diameter [mm]	Lettering field size [mm]	Markers per card	Type	Order No. WH	Order No. YE
UniSheet card format – printing with THERMOMARK CARD						
	< 6	13x13	32	US-WML 6 (13x13)	0800472	
	< 14	25x19	8	US-WML 14 (25x19)	0800473	
	< 36	25x25	4	US-WML 36 (25x25)	0800474	

Product overview for cable and conductor marking

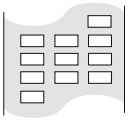
WMT thread-on markers

WMT markers are made of polyester foil. They are used to label conductors. The printed individual markers thread onto the conductor easily and are captively mounted.

Material data WMT

Material: Polyester
Free from silicone an halogen
Temperature: -40 °C to +120 °C

Multi-web version



	Conductor diameter [mm]	Lettering field size [mm]	Markers per roll	Type	Order No. WH	Order No. YE
Standard roll, multi-web version – printing with THERMOMARK ROLL and THERMOMARK ROLL X1						
	1.0 – 2.4	15x4	4000	WMT 2,4 (15x4) R	0816281	
	2.0 – 3.5	15x5	4000	WMT 3,5 (15x5) R	0817222	
	3.0 – 4.2	15x6	4000	WMT 4,2 (15x6) R	0817235	
	4.0 – 5.5	15x8	4000	WMT 5,5 (15x8) R	0817248	
	5.0 – 8.4	17x10	4000	WMT 8,4 (17x10) R	0817251	

UCT-WMS thread-on markers

UCT-WMS markers thread onto the conductor easily. They are held securely in place by three internal studs. UCT-WMS sheets are printed using the THERMOMARK CARD printer with UCT magazine 3.

Material data UCT-WMS

Material: PC V0
Free from silicone an halogen
Temperature: -40 °C to +120 °C

	Conductor diameter [mm]	Lettering field size [mm]	Markers per card	Type	Order No. WH	Order No. YE
UniCard card format – printing with THERMOMARK CARD						
	1.5 – 3.2	12x4	55	UCT-WMS 3,2 (12x4)…	0828570	0828572
	2.5 – 4.7	12x5.5	45	UCT-WMS 4,7 (12x5,5)	0828571	0828573
	Magazine		THERMOMARK CARD UCT-MAG3		5146613	

Product overview for cable and conductor marking

Marking for for attachment using cable binders WMTB, US-WMTB, and WMTB-HF

WMTB marking labels are attached with cable binders. As such, they can be used to label conductors after they have been connected. US-WMTB is an alternative in UniSheet card format. WMTB-HF are manufactured from polyurethane so are particularly flexible.

Material data

WMTB free from silicone and halogen
Material: Polyester -40 to +120 °C

US-WMTB free from silicone
Material: Polyester -30 to +80 °C

WMTB-HF free from halogen
Material: PUR -25 to +80 °C

Conductor diameter [mm]	Lettering field size [mm]	Markers per roll	Type	Order No. WH	Order No. YE
Standard roll, multi-web version – printing with THERMOMARK ROLL and THERMOMARK ROLL X1					
> 6	24x8	4000	WMTB (24x8) R	0816278	
> 6	35x15	1700	WMTB (35x15) R	0817316	
Standard roll, single-web version – printing with THERMOMARK ROLL and THERMOMARK ROLL X1					
> 6	40x12	1000	WMTB-HF (40x12) R	0830407	0830408
> 6	55x15	1000	WMTB-HF (55x15) R	0830409	0830410
> 6	55x25	500	WMTB-HF (55x25) R	0830411	0830412

Conductor diameter [mm]	Lettering field size [mm]	Markers per card	Type	Order No. WH	Order No. YE
UniSheet card format – printing with THERMOMARK CARD					
> 4	24x5	35	US-WMTB (24x5)	0828771	0828958
> 6	29x8	24	US-WMTB (29x8)	0828772	0828959
> 6	44x15	12	US-WMTB (44x15)	0828773	0828960

WT cable binders

Cable binders have been used for decades for binding control lines and cables. They are ideal for fixing cables and as an accessory for various cable markers.

Material data WT

Material: Polyamide
Free from silicone and halogen
Temperature: -40 °C to +85 °C

Length/width [mm]	Pcs. / Pkt.	Color	Type	Order No.
98x2,5	1000	transparent	WT-HF 2,5X98-L	3240735
160x2,6	1000	transparent	WT-HF 2,6X160-L	3240739
200x2,6	1000	transparent	WT-HF 2,6X200-L	3240743
140x3,6	1000	transparent	WT-HF 3,6X140-L	3240747
200x3,6	1000	transparent	WT-HF 3,6X200-L	3240751
290x3,6	1000	transparent	WT-HF 3,6X290-L	3240755
160x4,5	1000	transparent	WT-HF 4,5X160-L	3240759
200x4,5	1000	transparent	WT-HF 4,5X200-L	3240763
98x2,5	1000	black	WT-HF 2,5X98 BK-L	3240734
160x2,6	1000	black	WT-HF 2,6X160 BK-L	3240738
200x2,6	1000	black	WT-HF 2,6X200 BK-L	3240742
140x3,6	1000	black	WT-HF 3,6X140 BK-L	3240746
200x3,6	1000	black	WT-HF 3,6X200 BK-L	3240750
290x3,6	1000	black	WT-HF 3,6X290 BK-L	3240754
160x4,5	1000	black	WT-HF 4,5X160 BK-L	3240758
200x4,5	1000	black	WT-HF 4,5X200 BK-L	3240762

Product overview for cable and conductor marking

Conductor marking for insertion into EMT marking collars

EMT markers are inserted into PATG, PATO or PAB-KTL marking collars which provide protection against environmental influences and abrasion.

Material data EMT

Material: Polyester
Free from silicone and halogen
Temperature: -40 °C to +100 °C

Lettering field size [mm]	Markers per roll	Type	Order No. WH	Order No. YE
Standard roll, multi-web version – printing with THERMOMARK ROLL and THERMOMARK ROLL X1				
10x4	7500	EMT (10x4) R	0816235	
15x4	7500	EMT (15x4) R	0817329	0817358
23x4	5000	EMT (23x4) R	0817361	0817374

Conductor marking for insertion into US-WMT / UCT-WMT marking collars

US-WMT / UCT-WMT markers are also used in conjunction with PATG, PATO and PAB-KTL marking collars. As the marker strips can be replaced, both versions can also be used to mark conductors after they have been connected or if changes need to be made to imprints or labels.

Material data

US-WMT free from silicone
Material: PVC
Temperature: -30 °C to +80 °C

UCT-WMT

Free from silicone and halogen
Material: PC V0
Temperature: -40 °C to +120 °C

Lettering field size [mm]	Markers per card	Type	Order No. WH	Order No. YE
UniSheet card format – printing with THERMOMARK CARD				
10x4	112	US-WMT (10x4)	0828765	0828952
12x4	98	US-WMT (12x4)	0828766	0828953
15x4	84	US-WMT (15x4)	0828767	0828954
18x4	70	US-WMT (18x4)	0828768	0828955
23x4	56	US-WMT (23x4)	0828769	0828956
30x4	42	US-WMT (30x4)	0828770	0828957
UniCard card format – printing with THERMOMARK CARD				
10x4	60	UCT-WMT (10X4)	0801430	
12x4	50	UCT-WMT (12X4)	0801438	
15x4	50	UCT-WMT (15X4)	0801446	
18x4	40	UCT-WMT (18X4)	0801462	
23x4	30	UCT-WMT (23X4)	0801453	
30x4	30	UCT-WMT (30X4)	0801422	

Product overview for cable and conductor marking

Marking collars PATG/PATO
Marker carriers PAB KTL

The PATG marking collars are pushed onto the conductor before it is connected. PATO can also be used to mark conductors after they have been connected. The PAB-KTL marker carriers can be used for simultaneous bundling and marking of cables and wires.

	Conductor diameter [mm]	Type	Length of lettering field					
			10	12	15	18	23	30
	PATG							
	0.6 – 1.2	PATG 0/…	1013795	0827076	1013740	0820507	0828046	–
	1.5 – 2.5	PATG 1/…	1013805	0827077	1013025	0820510	1013847	0822440
	2.0 – 4.0	PATG 2/…	1013818	0827078	1013038	0820523	1013850	0822453
	4.0 – 7.0	PATG 3/…	1013821	0827079	1013041	0820536	1013863	0822466
	6.0 – 10.0	PATG 4/…	–	0827080	1013054	0820549	0808011	0822479
	10.0 – 14.0	PATG 5/…	–	–	1013067	0828059	0808024	0822482
	14.0 – 22.0	PATG 6/…	–	–	1013070	0828062	0808037	–

Material data PATG
Material: PVC
Free from silicone
Temperature: -50 °C to +80 °C

	PATO							
	2.0 – 3.5	PATO 01/…	1013876	0827081	1013119	0823740	1013892	0822495
	2.8 – 5.0	PATO 02/…	1013889	0827082	1013122	0823753	1013902	0822505
	5.0 – 8.0	PATO 03/…	–	–	1013135	–	–	–
	8.0 – 10.0	PATO 04/…	–	–	1013148	–	–	–

Material data PATO
Material: PVC
Free from silicone
Temperature: -50 °C to +80 °C

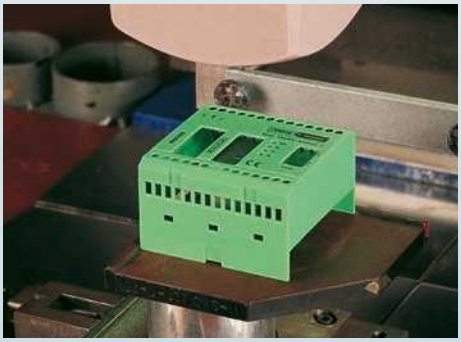
	PAB-KTL							
		PAB-KTL						1013261

Material data PAB-KTL
Material: PVC
Free from silicone
Temperature: -50 °C to +80 °C

Marking expertise for the electronics industry

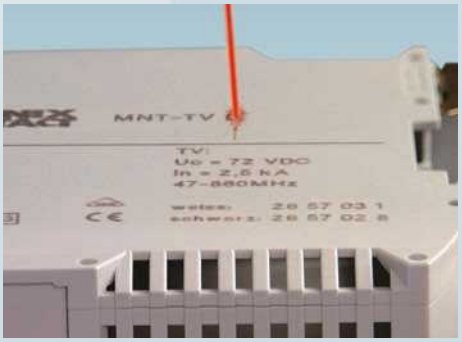
Phoenix Contact can offer you a wide range of marking options for components and parts in electronics production. If you are buying in large quantities, we can supply your components labeled ex-works if you like. Whether you need PCB terminal blocks pre-printing or individual housings labeled, we have both the know-how and the necessary production technologies.

If you are buying in smaller quantities or require custom imprinting or labeling, we can offer you a variety of printers and marking materials for your components.



1. Pad printing

Pad printing is widely recognized for labeling electronics housings. A legible and high-contrast print can be made based on your electronic print copy. A wide range of printing colors is available.



2. Laser printing

Generally all technical thermoplastics can be labeled by laser beam. Readability and contrast ratios largely depend on the particular plastic/color combination, the wavelength of the laser, and the process parameters, and, therefore, need to be determined accordingly.

3. Individual marking

Professional marking systems like thermal transfer systems are able to provide quick and flexible solutions for individual marking requirements on site.

THERMOMARK ROLL

The THERMOMARK ROLL can print markers supplied in roll format for terminal, conductor, cable, and device marking applications

THERMOMARK ROLL X1

The THERMOMARK ROLL X1 is able to process large rolls and thus produce large quantities in industrial production applications.

THERMOMARK CARD

THERMOMARK CARD prints materials in card and sheet format, providing quick and easy solutions for a wide variety of marking requirements.

CLIP PROJECT

CLIP PROJECT is a high-performance marking software solution for customized labeling materials. CLIP PROJECT supports all output devices from Phoenix Contact.

THERMOMARK ROLL

This thermal transfer printer has been designed for printing rolls and continuous media. You can easily create accurately printed labels, markers and shrink sleeves for terminal block, conductor and device marking. The compact printer is also suitable for mobile use.

Technical data		Description	Type	Order No.
Print resolution	300 dpi	**THERMOMARK ROLL**, thermal transfer printer for roll material, CLIP PROJECT advanced software, one roll of EML (20x8) labels containing 1000 labels, one ink ribbon (50 m sample roll)	THERMOMARK ROLL	5146477
Interfaces	USB and Ethernet			
Power supply	100 – 240 V ~ 50/60 Hz,			
Operation	Touch screen			
Printable material	Labels and shrink sleeve in roll format			
Dimensions (W x H x D)	253 x 189 x 320 mm			
Weight	approx. 3.5 kg			
		THERMOMARK ROLL SET, consisting of THERMOMARK ROLL and MARKING NOTEBOOK with German keyboard and the CLIP PROJECT professional software	THERMOMARK ROLL SET	5147300
		THERMOMARK ROLL SET EN, consisting of THERMOMARK ROLL and MARKING NOTEBOOK with English keyboard and the CLIP PROJECT professional software	THERMOMARK ROLL SET EN	5147301

THERMOMARK ROLL X1

The dimensions of the THERMOMARK ROLL X1 thermal transfer printer mean that it is also able to process large rolls.

Technical data		Description	Type	Order No.
Print resolution	300 dpi	**THERMOMARK ROLL X1**, thermal transfer printer for roll material, Software CLIP PROJECT advanced, one roll of EML (20x8) labels containing 1000 labels, one ink ribbon (50 m sample roll)	THERMOMARK ROLL X1	5146723
Interfaces	USB and Ethernet			
Power supply	100 – 240 V ~ 50/60 Hz,			
Operation	Touch screen			
Printable material	Labels and shrink sleeve in roll format			
Dimensions (W x H x D)	264 x 245 x 412 mm			
Weight	approx. 5 kg			

THERMOMARK ROLL and THERMOMARK ROLL X1 accessories	Description	Type	Order No.
	External media hub, for rolls of 150 to 305 mm outside diameter (RL rolls) for THERMOMARK ROLL	THERMOMARK ROLL-ERH	5146448
	External media hub, for rolls of up to 500 mm outside diameter (RXL rolls) for THERMOMARK ROLL	THERMOMARK-ERH 500	5146309
	Ink ribbon, ink color: black, length 300 m, width 110 mm	THERMOMARK-RIBBON 110	5145384
	Ink ribbon, ink color: blue, length 300 m, width 110 mm	THERMOMARK-RIBBON 110 BU	0829544
	Ink ribbon, ink color: green, length 300 m, width 110 mm	THERMOMARK-RIBBON 110 GN	0829542
	Ink ribbon, ink color: red, length 300 m, width 110 mm	THERMOMARK-RIBBON 110 RD	0829543
	Ink ribbon, ink color: black, length 300 m, width 110 mm, for high-temperature labels	THERMOMARK-RIBBON 110-EMLHT	0800342
	Ink ribbon for labeling shrink sleeves, ink color: black, length 300 m, width 110 mm	THERMOMARK-RIBBON 110-WMSU	0801358
	Ink ribbon for labeling shrink sleeves, ink color: white, length 300 m, width 110 mm	THERMOMARK-RIBBON 110-WMSU WH	0801359
	Ink ribbon, ink color: black, for labeling WMTB-HF, length 300 m, width 110 mm	THERMOMARK-RIBBON 110-WMTB	5148007
	Stable transport case with aluminum edges for printers and accessories, for THERMOMARK ROLL or CARD	TL CASE	0800613

Cutters and perforation devices

Continuous media can be cut and perforated with a high degree of positioning accuracy with cutters and perforation devices.

Cutters and perforation devices	Description	Type	Order No.
	Cutter, can be assembled later, for cutting continuous media precisely to length for THERMOMARK ROLL	THERMOMARK ROLL-CUTTER	5146422
	Perforation device, can be assembled later, for perforating continuous media	THERMOMARK ROLL-CUTTER/P	5146435
	Cutter, can be assembled later, for cutting continuous media precisely to length for THERMOMARK ROLL X1	THERMOMARK ROLL X1 CUTTER	5146765
	Perforation device, can be assembled later, for perforating continuous media for THERMOMARK ROLL X1	THERMOMARK ROLL X1 CUTTER/P	5146766

THERMOMARK CARD

This thermal transfer printer prints marking materials in card and sheet format. You can mark your terminal blocks, conductors and devices easily and to a high quality. The low weight and compact design of the printer also allow for mobile use on-site. The automatic material detection reduces the risk of print errors.

Technical data		Description	Type	Order No.
Print resolution	300 dpi	**THERMOMARK CARD**, thermal transfer printer for card and sheet material, CLIP PROJECT advanced software, magazines for US and UCT materials, one UCT-TM 6, one US-EMP (85.6 x 54), one ink ribbon (50 m sample roll)	THERMOMARK CARD	5146464
Speed	8 sec/sheet			
Interfaces	USB and Ethernet			
Power supply	100 - 240 V ~ 50/60 Hz,			
Operation	Touch screen			
Printable material	Plastic sheets, UCT and US format			
Dimensions (W x H x D)	253 x 189 x 320 mm			
Weight	approx. 6 kg			
		THERMOMARK CARD SET, consisting of THERMOMARK CARD and MARKING NOTEBOOK with German keyboard and the CLIP PROJECT professional software	THERMOMARK CARD SET	5147200
		THERMOMARK CARD SET EN, consisting of THERMOMARK CARD and MARKING NOTEBOOK with English keyboard and the CLIP PROJECT professional software	THERMOMARK CARD SET EN	5147201

THERMOMARK CARD accessories	Description	Type	Order No.
	Magazine for US cards (included in the scope of supply of the THERMOMARK CARD)	THERMOMARK CARD – US-MAG1	5146451
	Magazine for UCT sheets [UCT-WMS…]	THERMOMARK CARD – UCT-MAG3	5146613
	Ink ribbon, ink color: black, length 300 m, width 110 mm	THERMOMARK-RIBBON 110-TC	0801371

CLIP PROJECT software and MARKING NOTEBOOK

CLIP PROJECT

The high-performance marking software provides a solution for the quick and individual labeling of all Phoenix Contact marking materials. CLIP PROJECT supports all output devices from Phoenix Contact and, thanks to automatic Internet updates, is always up-to-date. CLIP PROJECT advanced is supplied as standard with our THERMOMARK printers.

Technical data		Description	Type	Order No.
CPU Main memory/ hard disk space Drive Monitor resolution Operating equipment Operating systems	Pentium II > 400 MHz 128 MB/2 GB CD-ROM 1024x768 Mouse recommended Windows Vista Windows XP Windows 7	**CLIP PROJECT advanced**, planning and marking software in German, English, French, Italian, Spanish, Russian, Polish, Hungarian, Czech, Portuguese, Chinese, Turkish, Dutch, Japanese Software is included in the scope of supply of the THERMOMARK CARD and THERMOMARK ROLL.	CLIP PROJECT ADVANCED	5146040
		CLIP PROJECT professional, extended version of CLIP PROJECT advanced with additional template designer, for designing your own marking material.	CLIP PROJECT PROFESSIONAL	5146053

MARKING BOX / MARKING NOTEBOOK

The MARKING BOX contains the THERMOMARK CARD and THERMOMARK ROLL thermal transfer printers, plus the MARKING NOTEBOOK with the CLIP PROJECT professional marking software pre-installed.

The notebook from the Dell Latitude TM E range transforms the new THERMOMARK printers into a complete marking system. It is characterized by reliability, a long service life and a professional design.

Windows 7, CLIP PROJECT professional planning and marking software and all of the required drivers are pre-installed and ensure quick startup of the entire system. Simply connect the notebook and printer via USB and you're done (Plug'n'Print).

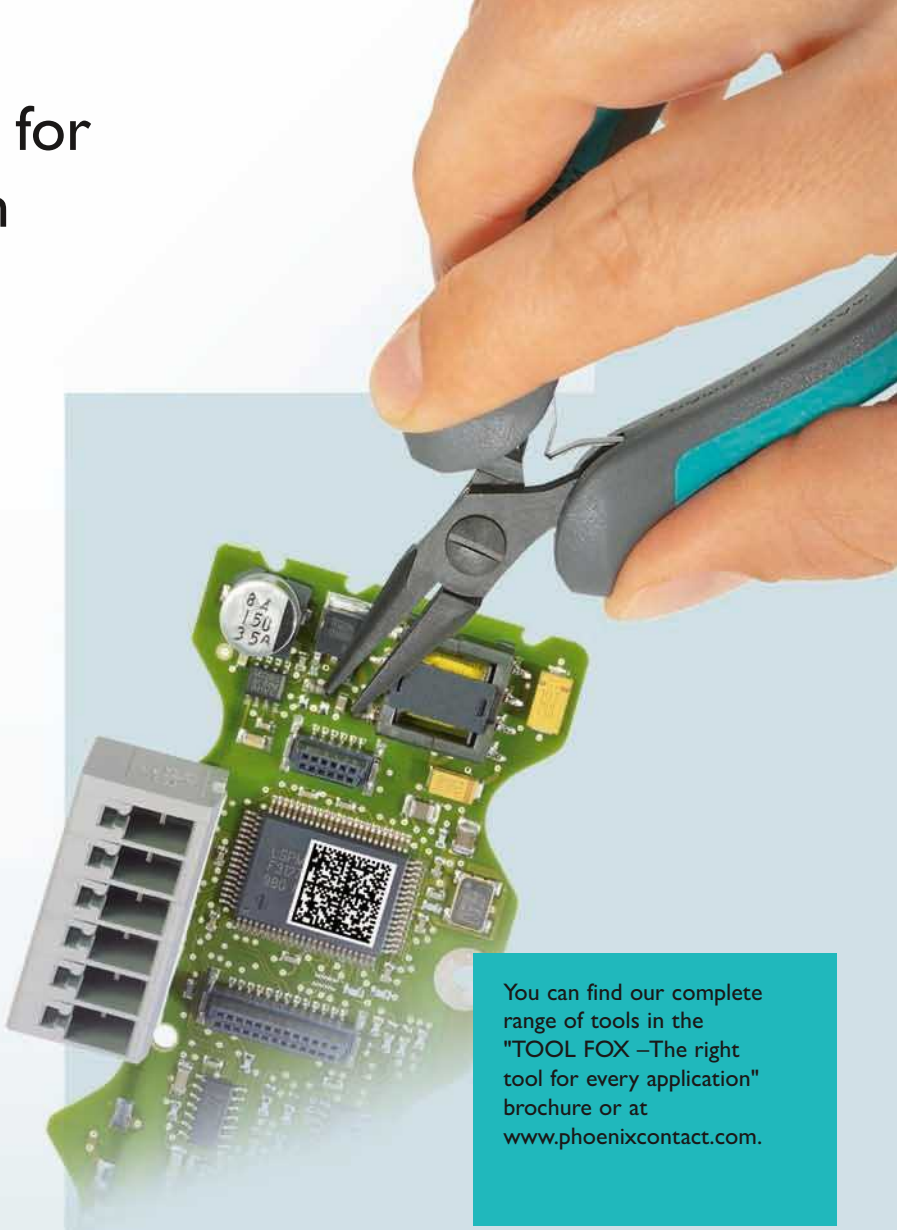
Description	Type	Order No.
MARKING BOX, consisting of the THERMOMARK CARD and THERMOMARK ROLL printers, plus the MARKING NOTEBOOK with German keyboard	MARKING BOX	5147100
MARKING BOX EN, consisting of the THERMOMARK CARD and THERMOMARK ROLL printers, plus the MARKING NOTEBOOK with German keyboard	MARKING BOX EN	5147101

Technical data		
Processor Display Hard disk Main memory Battery	Intel Celeron B840 14” 1366 x 768 320 GB serial ATA (7200 RPM) 2 GB and 1600 MHz Li-ION battery with 40 Wh	The information describes the configuration at the time of going to print. Subject to modifications in the interest of technical progress or product improvements.

MICROFOX – Tools for electronics production

MICROFOX – the range of pliers for all tasks in electronics and electromechanical engineering.

Like all Phoenix Contact tools, the micro pliers are equipped with two-component handles which have been designed specifically to ensure a safe grip and eliminate fatigue. For the protection of sensitive electronics components, we recommend the ESD versions with special handles, as they are able to discharge electrostatic charges in a controlled manner conforming to applicable standards and regulations.



You can find our complete range of tools in the "TOOL FOX –The right tool for every application" brochure or at www.phoenixcontact.com.

Durable

The tools are made from special C 60 tool steel. They are hardened and precision-ground for excellent cutting performance and are particularly durable.

Precision

The integrated double leaf spring and the ergonomic non-slip handle ensure accuracy and precision when working with electronic components.

Protective

The handles of the MICROFOX… ESD electronics pliers are made from conductive plastic. This means that electrostatic energy is discharged in a gradual and controlled manner.

Tools for electronics production

Electronics pliers

MICROFOX electronics pliers feature a through-connected joint for permanent stability and optimum distribution of force. The surfaces are finely polished and oiled.

Type	Order No.	MICROFOX-SB	1212489
Description		Diagonal cutter	
		Rounded head with chamfer	
Type	Order No.	MICROFOX-SP	1212488
Description		Needle-nose pliers	
		Tapered head, no chamfer	

Type	Order No.	MICROFOX E	1212494
Description		Front cutter	
		No chamfer	
Type	Order No.	MICROFOX-EO	1212495
Description		Angled front cutter	
		Angled, 20°, no chamfer	

Type	Order No.	MICROFOX-P	1212491
Description		Needle-nose pliers	
		Smooth gripping surface	

Type	Order No.	MICROFOX-PC	1212492
Description		Needle-nose pliers	
		45° angle, smooth gripping surface	

Type	Order No.	MICROFOX-F	1212493
Description		Flat-nose pliers	
		Smooth gripping surface	

Type	Order No.	MICROFOX-R	1212490
Description		Round-nose pliers	
		Smooth gripping surface	

ESD electronics pliers

The ESD MICROFOX electronics pliers conform to applicable standards and regulations including DIN EN 61340-5. The screwed precision joint makes for optimum results. Mirror-polished and phosphate-treated metal surfaces ensure that there is no glare when working.

Type	Order No.	MICROFOX-S ESD	1212480
Description		Diagonal cutter	
		Rounded head, no chamfer	

Type	Order No.	MICROFOX-E ESD	1212485
Description		Front cutter	
		No chamfer	

Type	Order No.	MICROFOX-P ESD	1212482
Description		Needle-nose pliers	

Type	Order No.	MICROFOX-PC ESD	1212483
Description		Needle-nose pliers	
		Smooth gripping surface. 45° angle	

Type	Order No.	MICROFOX-F ESD	1212484
Description		Flat-nose pliers	
		Smooth gripping surface	

Type	Order No.	MICROFOX-R ESD	1212481
Description		Round-nose pliers	
		Smooth gripping surface	

Further information on the products presented here and on the world of solutions from Phoenix Contact can be found at

www.phoenixcontact.net/catalog

Or contact us directly.

Modular Terminal Blocks
CLIPLINE 1

Marking Systems, Tools, and Mounting Material
CLIPLINE 2

Connection Technology for Field Devices and Field Cabling
PLUSCON

Device Connection Technology and Electronic Housings
COMBICON

Power and Signal Quality
TRABTECH

Signal Converters, Switching Devices, Power Supply Units
INTERFACE

Automation Components and Systems
AUTOMATION

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PHOENIX CONTACT GmbH & Co. KG
32823 Blomberg, Germany
Phone: +49 (0) 52 35 3-00
Fax: +49 (0) 52 35 3-4 12 00
www.phoenixcontact.com

PHOENIX CONTACT
INSPIRING INNOVATIONS

OCEAN CHIPS
Океан Электроники
Поставка электронных компонентов

Компания «Океан Электроники» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Поставка оригинальных импортных электронных компонентов напрямую с производств Америки, Европы и Азии, а так же с крупнейших складов мира;
- Широкая линейка поставок активных и пассивных импортных электронных компонентов (более 30 млн. наименований);
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Компания «Океан Электроники» является официальным дистрибьютором и эксклюзивным представителем в России одного из крупнейших производителей разъемов военного и аэрокосмического назначения «**JONHON**», а так же официальным дистрибьютором и эксклюзивным представителем в России производителя высокотехнологичных и надежных решений для передачи СВЧ сигналов «**FORSTAR**».

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Телефон: 8 (812) 309-75-97 (многоканальный)
Факс: 8 (812) 320-03-32
Электронная почта: ocean@oceanchips.ru
Web: http://oceanchips.ru/
Адрес: 198099, г. Санкт-Петербург, ул. Калинина, д. 2, корп. 4, лит. А