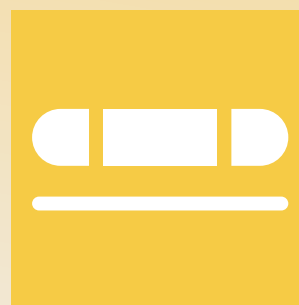




CUSTOM CAPABILITIES CATALOGUE

FUSEHOLDERS - 2017



HOLD&go





**FUSEHOLDERS**  
PORTAFUSIBILI

# The Würth Elektronik eiSos Group.



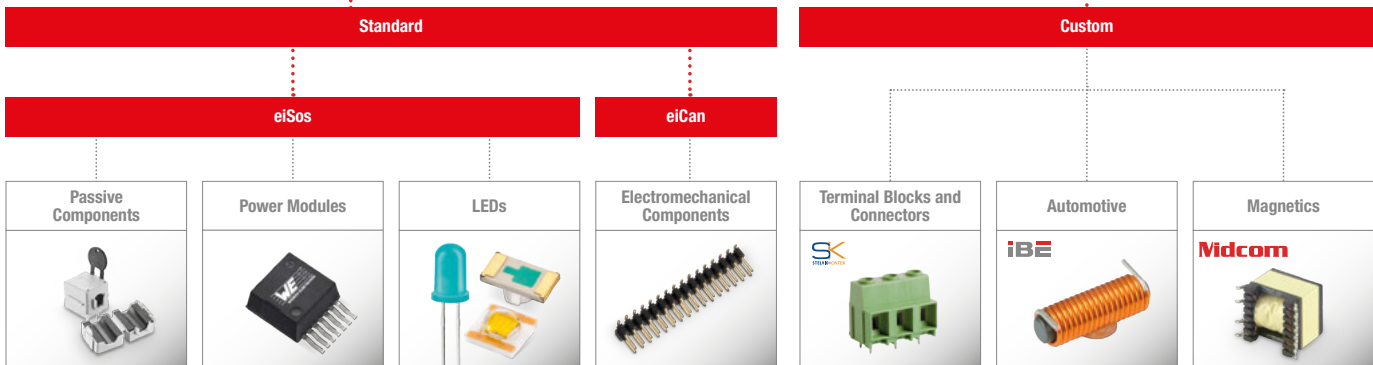
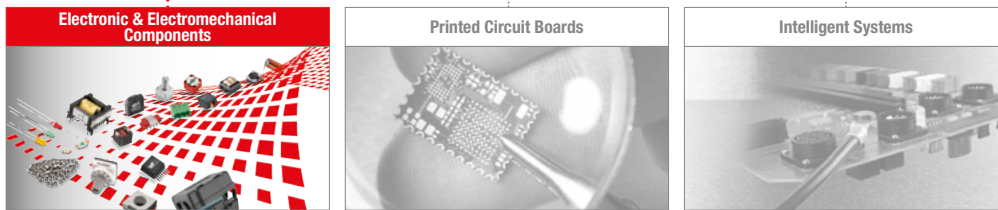
**The Würth Group**

Over 63,500 employees\* and 9.74 billion € sales\*



**The Würth Elektronik Group**

Over 7,200 employees\* and 529 million € sales\*



\*2013

## Würth Elektronik Stelvio Kontek.



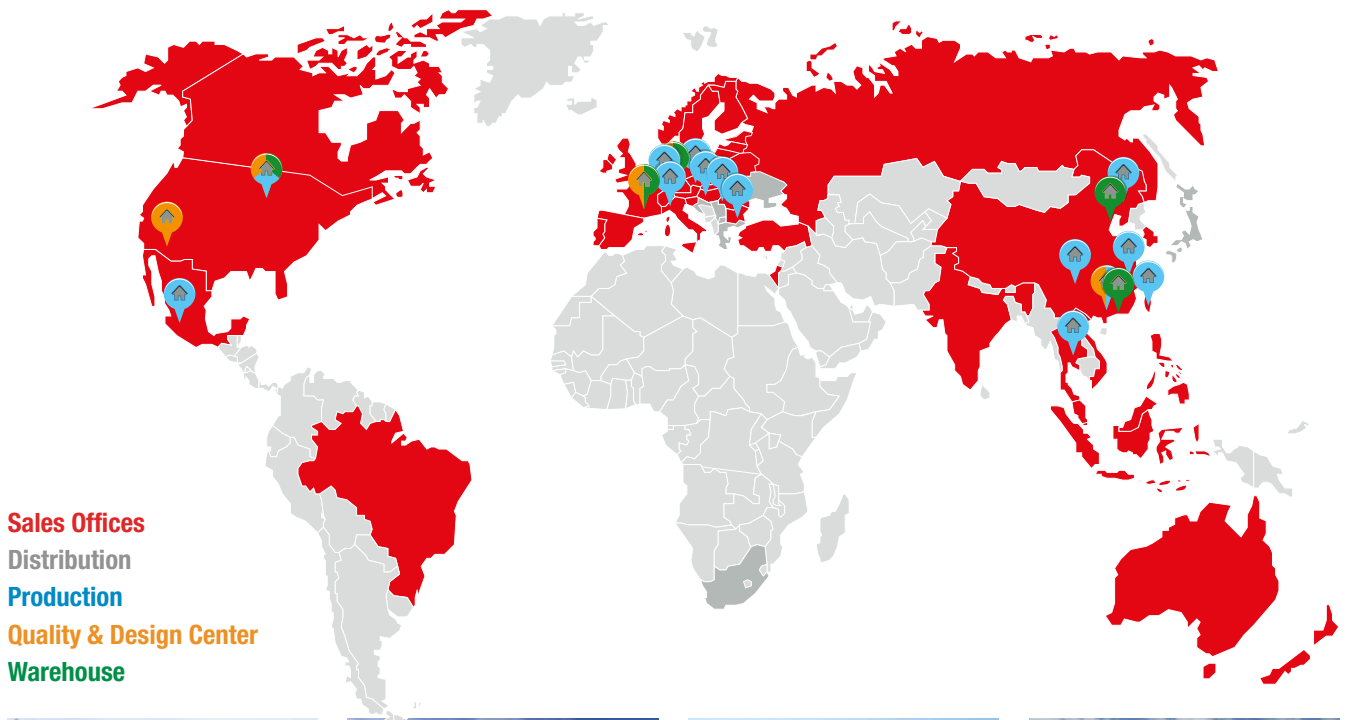
Headquarter, Oggiono (LC)

Würth Elektronik Stelvio Kontek S.p.A. is one of the leading groups in the connectors market. With a solid background in the sector and having gained strength from the merger between Stelvio and Kontek Comatel in 2009, the group's innovative production facilities and vertical organization result in high performance.

Technical experts operate in our in-house R&D department and at the production sites (Italy, Hungary, Romania) to transform sketches into reality. The company designs, engineers and manufactures standardized & customized solutions using dedicated equipment and can rely on its hi-tech facilities powered up with in-house technology.

# Globally available. Locally present.

Würth Elektronik eiSos is present with production plants and a worldwide technical sales force in all important markets of the world.



Watertown (USA)



Oggiono (Italy)



Tab (Hungary)



Blaj (Romania)



Milpitas (USA)



Thyrnau (Germany)



Fuling (China)



Tianjin (China)



Irapuato (Mexico)



Belozem (Bulgaria)



Huzhou (China)



Tongzi (China)



Lyon (France)



Budweis (Czech Republic)



Longgang (China)



Taichung (Taiwan)



Waldenburg (Germany)



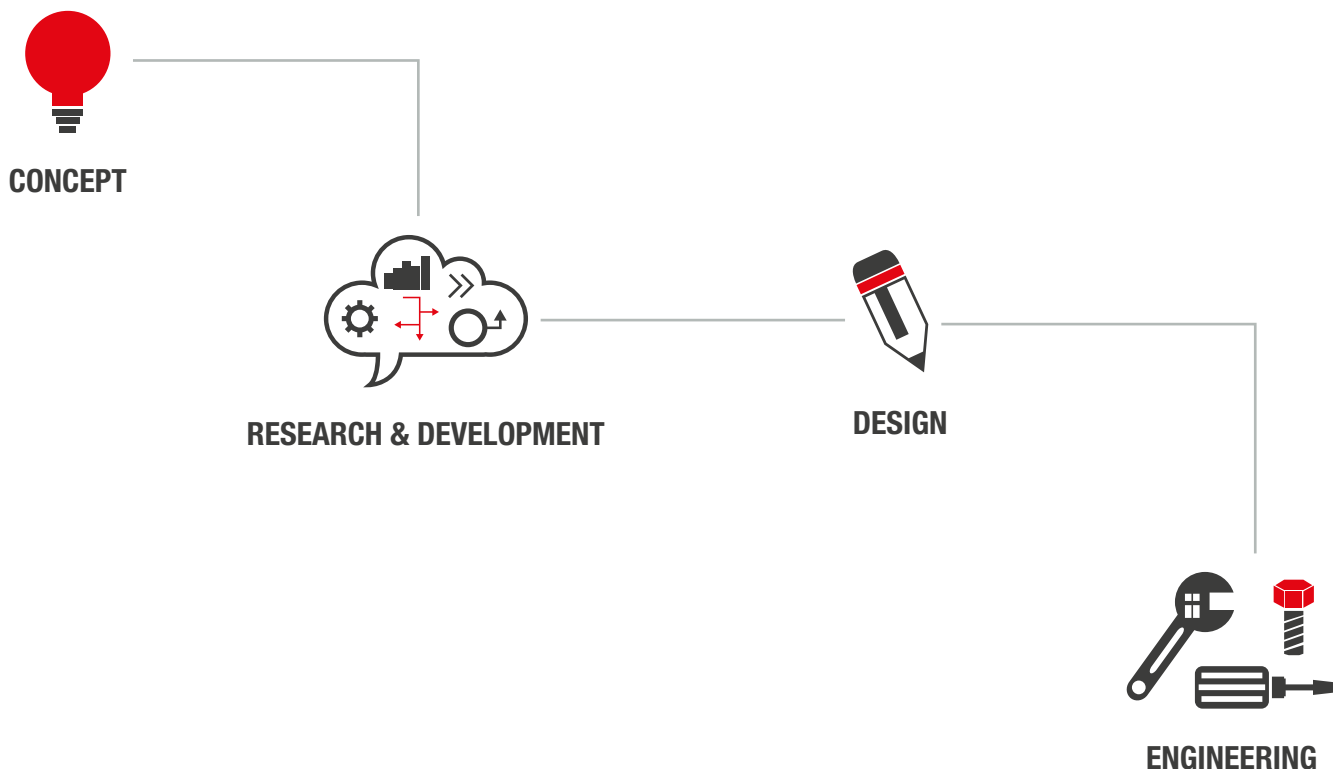
Hong Kong (Hong Kong)



Shenyang (China)



Nakhon Ratchasima (Thailand)



## Fully Verticalized Production.

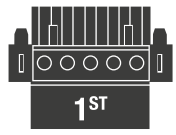
Our structure is organized to satisfy even the most demanding customers needs from design to production and engineering. We offer engineering, design and manufacturing of custom products with dedicated equipment, supported by a modern and fully verticalized structure and with all processes constantly under control. All of this thanks to unique in-house designed software's and hardware's. Würth Elektronik Stelvio Kontek follows the whole development process: from design to production, validation and commercialization.

## Produzione completamente verticalizzata.

La nostra struttura è organizzata per soddisfare le necessità anche dei clienti più esigenti, partendo dal disegno, passando per l'ingegnerizzazione sino alle più differenti necessità produttive. Per voi possiamo offrire l'ideazione, il design e la fabbricazione di componenti custom con attrezzature e macchinari dedicati, grazie a software e hardware completamente concepiti e realizzati all'interno dei nostri stabilimenti. Würth Elektronik Stelvio Kontek segue tutto lo sviluppo: dal design alla produzione, dalla validazione alla commercializzazione.



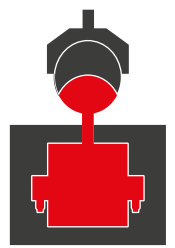
Scan the QR-code with your smartphone and discover the flow of Würth Elektronik Stelvio Kontek's products, from the idea to your hands. Inquadra con il tuo smartphone questo QR-code e scopri il workflow dei prodotti Würth Elektronik Stelvio Kontek. Dall'idea direttamente nelle tue mani.



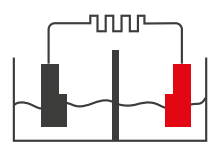
**PROTOTYPING**



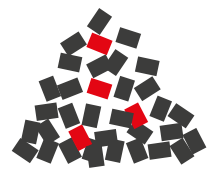
**PRODUCTION**



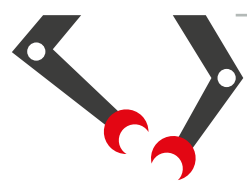
**PLASTIC MOULDING**



**GALVANIC TREATMENT**



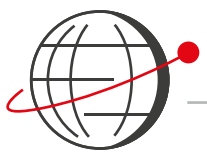
**STAMPING & CUTTING**



**ASSEMBLING**



**QUALITY CONTROL**



**MARKETING & SALES**



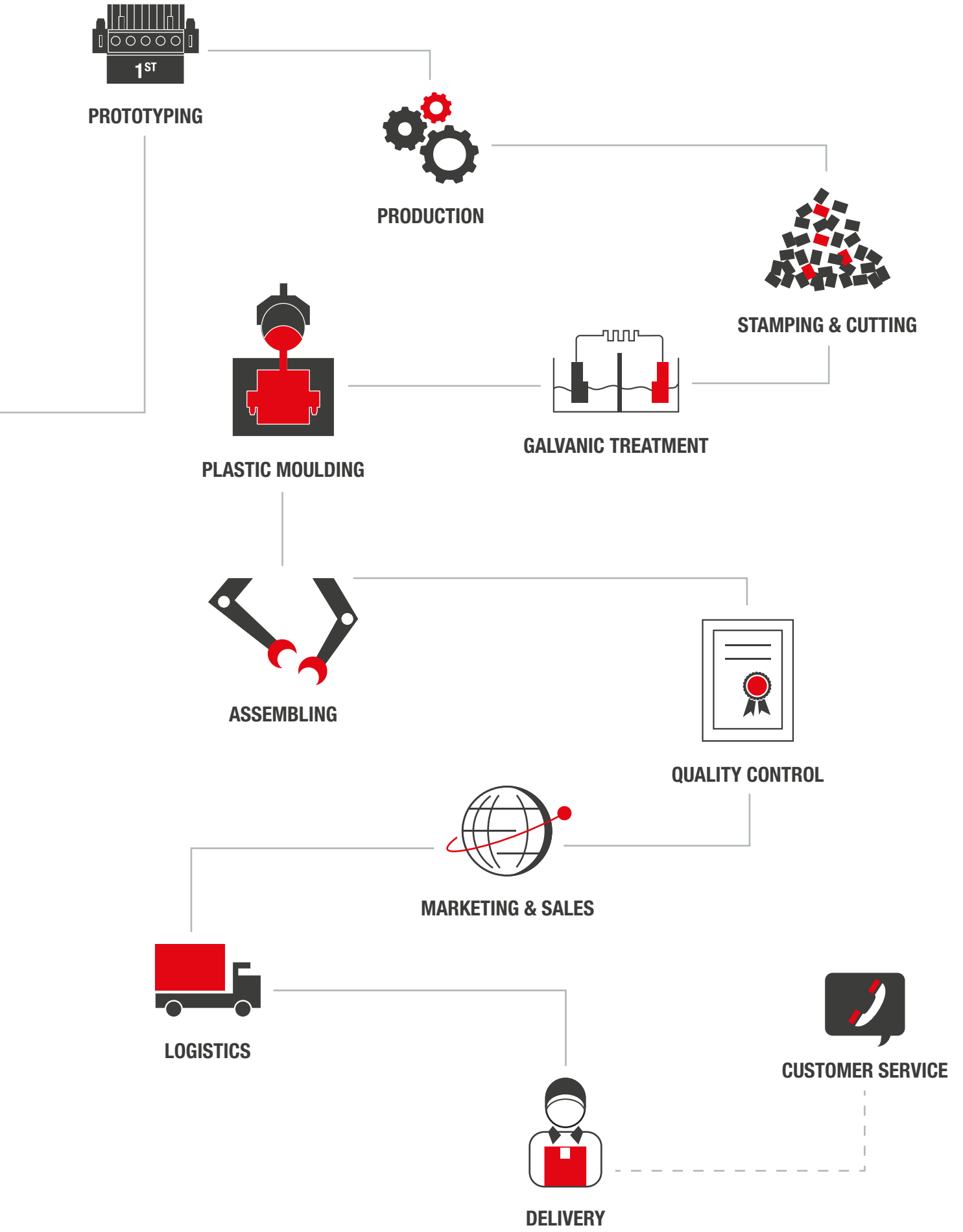
**LOGISTICS**



**CUSTOMER SERVICE**



**DELIVERY**









<b>FUSEHOLDER BLOCKS PORTAFUSIBILI NON PROTETTI</b>	<b>For P.C.B. Per C.S.</b>	<b>PTF/15</b>	<b>12</b>
		<b>PTF/15B</b>	<b>13</b>
		<b>PTF/18 THR</b>	<b>14</b>
		<b>PTF/18 SMD</b>	<b>15</b>
		<b>PTF/18 THR (LCP)</b>	<b>16</b>
		<b>PTF/18 SMD (LCP)</b>	<b>17</b>
		<b>PTF/60</b>	<b>18</b>
		<b>PTF/75</b>	<b>19</b>
		<b>PTF/76</b>	<b>20</b>
		<b>PTF/77</b>	<b>21</b>
		<b>PTF/78</b>	<b>22</b>
<b>SHOCKSAFE FUSEHOLDERS PORTAFUSIBILI PROTETTI</b>	<b>For P.C.B. Per C.S.</b>	<b>PTF/45</b>	<b>24</b>
		<b>PTF/50</b>	<b>25</b>
	<b>For panel Da pannello</b>	<b>PTF/30</b>	<b>28</b>
		<b>PTF/35</b>	<b>29</b>
		<b>PTF/40</b>	<b>30</b>
		<b>PTF/55</b>	<b>31</b>
		<b>PTF/70</b>	<b>32</b>
	<b>In-line Volante</b>	<b>PTF/80</b>	<b>34</b>
		<b>PTF/80A</b>	<b>35</b>
	<b>ACCESSORIES ACCESSORI</b>	<b>Clips for P.C.B. Contatti per C.S.</b>	<b>CT134</b>
<b>Cover Cappuccio</b>		<b>BS232</b>	<b>36</b>
		<b>BS140</b>	<b>36</b>
		<b>BS613</b>	<b>36</b>
<b>TECHNICAL DATA DATI TECNICI</b>			<b>38</b>

# FUSEHOLDERS PORTAFUSIBILI

Type Tipo	Fuse link Fusibile tipo				GWT* EN 60335-1	THR*	SMD*	Fuse carrier Cappuccio portafusibile
	5x20 mm	6,3x32 mm						
PTF/15	•		129300	E157417	•	D		—
PTF/15B	•		129300	E157417	•	D		—
PTF/18 THR	•		40038367	E157417	•	•		—
PTF/18 SMD	•		40038367	E157417	•		•	—
PTF/18 THR (LCP)	•		40038367	E157417	•	•		—
PTF/18 SMD (LCP)	•		40038367	E157417	•		•	—
PTF/60	•		132984	E157417	D			—
PTF/75	•		129302	E157417	D	D		—
PTF/76	•		129302	E157417	D	D		—
PTF/77	•		129302	E157417	D	D		—
PTF/78	•		129302	E157417	D	D		—
PTF/45	•		120170	E157417	D			Bayonet / A baionetta
PTF/50	•		120170	E157417	D			Bayonet / A baionetta
PTF/30	•		133366	E157417	•			Screw / A vite
PTF/35	•		133367	E157417	D			Screw / A vite
PTF/40	•		133369	E157417	D			Screw / A vite
PTF/55	•		120740	E157417	D			Bayonet / A baionetta
PTF/70	•		129305	E157417	D			Bayonet / A baionetta
PTF/80	•	•			D			Bayonet / A baionetta
PTF/80A	•	•			D			Bayonet / A baionetta

**GWT\*** (According to EN 60335-1)

In the product code, you shall add suffix "V6x" / Nel codice di prodotto, dovete aggiungere "V6x"

• Standard version compliant / Versione standard compatibile

D On demand / A richiesta

**THR\* - SMD\***

In the product code, you shall add suffix "V8x" / Nel codice di prodotto, dovete aggiungere "V8x"

• Standard version compliant / Versione standard compatibile

D On demand / A richiesta


# **FUSEHOLDER BLOCKS FOR P.C.B. PORTAFUSIBILI NON PROTETTI PER C.S.**



Fuse link / Fusibile tipo	5x20 mm
Mounting / Montaggio	P.C.B. / C.S.
Rated Current / Corrente nominale	6,3 A
Rated Voltage / Tensione nominale	250 VAC
Rated Power Acceptance / Potenza dissipabile	1,6 W

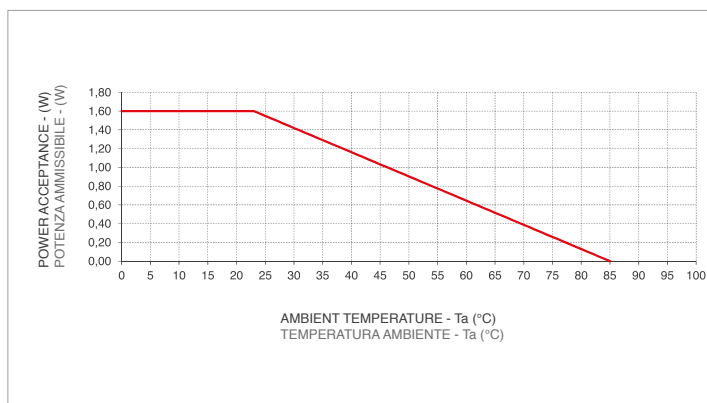
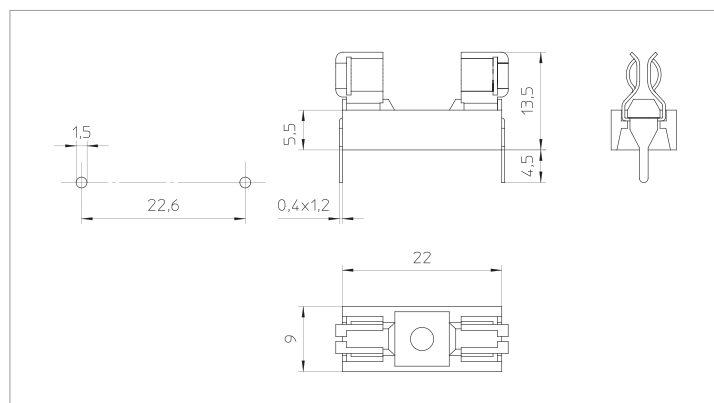
Housing / Corpo isolante	Thermoplastic UL 94 V1
Admissible ambient air temperature / Temperatura ambiente ammissibile	-30 °C to 85 °C
Shocksafe category / Protezione contro le scosse elettriche	PC1
Degree of protection / Grado di protezione	IP00
Contact Resistance / Resistenza di contatto	< 5 mΩ

 EN 60127-6

 US UL 4248-1 + C22.2 no. 4248-1

Rated Current / Corrente Nominale	6,3 A	Rated Current / Corrente Nominale	20 A pending
Rated Voltage / Tensione nominale	250 VAC	Rated Voltage / Tensione nominale	250 VAC
Rated Power Acceptance / Potenza dissipabile	1,6 W	Rated Power Acceptance / Potenza dissipabile	—

Standard colour / Colore standard	Yellow / Giallo
Other colours / Altri colori	On demand / A richiesta
Accessories / Accessori	Cover / Cappuccio BS140 p. 36
Other information / Altri dati	p. 38
Standard package / Imballo	Bulk / Scatola 1000 pcs TUBE - 55 pcs



**FUSEHOLDER BLOCKS FOR P.C.B.  
PORTAFUSIBILI NON PROTETTI PER C.S.**


**PTF/15B**



Fuse link / Fusibile tipo	5x20 mm
Mounting / Montaggio	P.C.B. / C.S.
Rated Current / Corrente nominale	6,3 A
Rated Voltage / Tensione nominale	250 VAC
Rated Power Acceptance / Potenza dissipabile	1,6 W

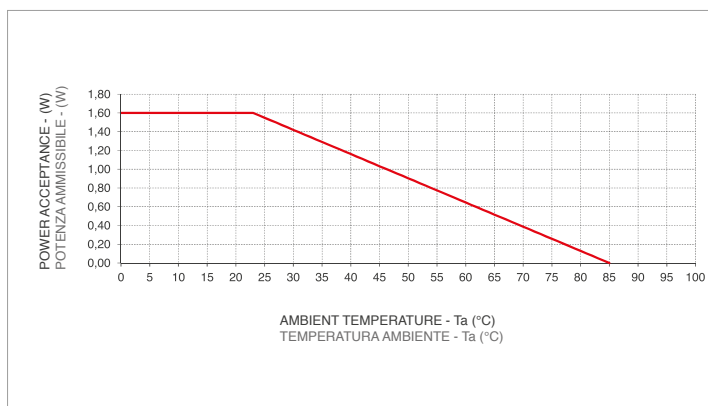
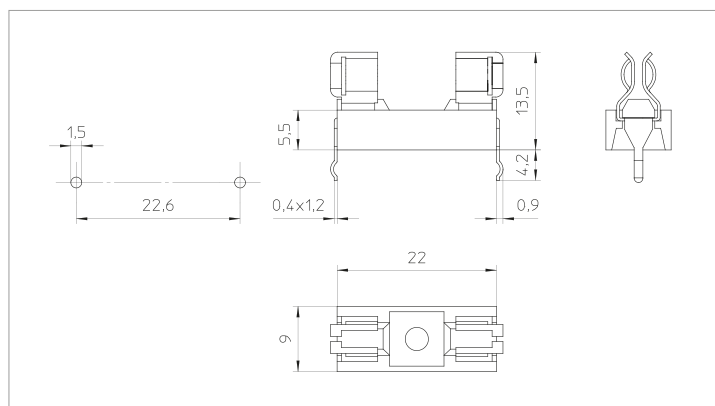
Housing / Corpo isolante	Thermoplastic UL 94 V1
Admissible ambient air temperature / Temperatura ambiente ammissibile	-30 °C to 85 °C
Shocksafe category / Protezione contro le scosse elettriche	PC1
Degree of protection / Grado di protezione	IP00
Contact Resistance / Resistenza di contatto	< 5 mΩ

 EN 60127-6

 UL 4248-1 + C22.2 no. 4248-1

Rated Current / Corrente Nominale	6,3 A	Rated Current / Corrente Nominale	20 A pending
Rated Voltage / Tensione nominale	250 VAC	Rated Voltage / Tensione nominale	250 VAC
Rated Power Acceptance / Potenza dissipabile	1,6 W	Rated Power Acceptance / Potenza dissipabile	—

Standard colour / Colore standard	Yellow / Giallo
Other colours / Altri colori	On demand / A richiesta
Accessories / Accessori	Cover / Cappuccio BS140 p. 36
Other information / Altri dati	p. 38
Standard package / Imballo	Bulk / Scatola 1000 pcs TUBE - 55 pcs

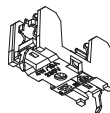


**FUSEHOLDER BLOCKS FOR P.C.B.  
PORTAFUSIBILI NON PROTETTI PER C.S.**

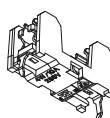


**PTF/18 THR**

Ordering codes:  
**PTF/18THR81NE**  
with hole in plastic body



**PTF/18THR83NE**  
w/o hole in plastic body



Fuse link / Fusibile tipo	5x20 mm
Mounting / Montaggio	P.C.B. / C.S.
Rated Current / Corrente nominale	10 A
Rated Voltage / Tensione nominale	250 VAC
Rated Power Acceptance / Potenza dissipabile	4 W

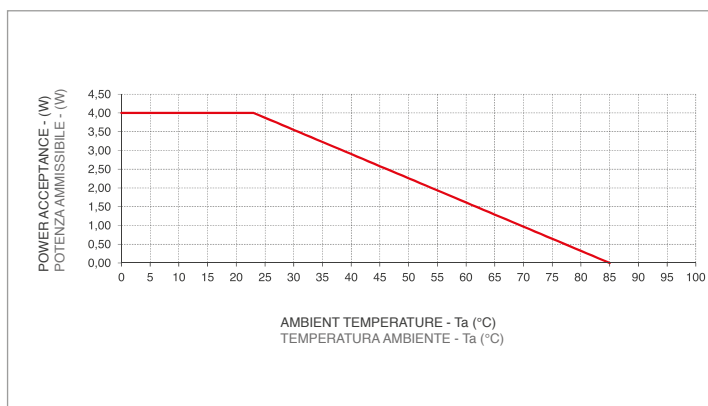
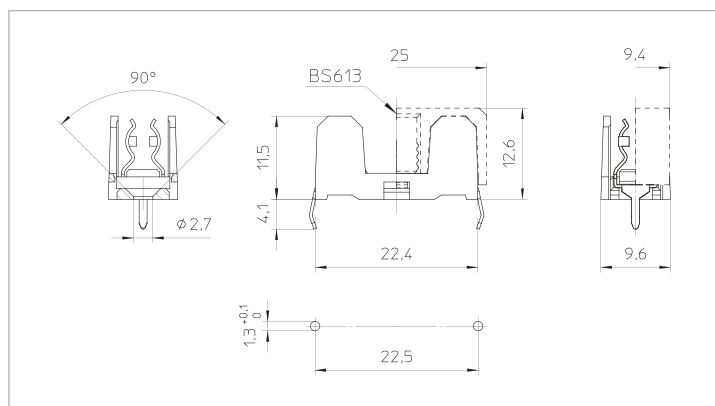
Housing / Corpo isolante	High Temperature Thermoplastic UL 94V-0
Solderability / Saldabilità	Wave - 245 °C / 3 sec. acc. to EN 61760 Reflow - 245 °C / 30 sec. max acc. to J-STD-020-D
Admissible ambient air temperature / Temperatura ambiente ammissibile	-30 °C to 85 °C
Shocksafe category / Protezione contro le scosse elettriche	PC1
Degree of protection / Grado di protezione	IP00 / IP20
Contact Resistance / Resistenza di contatto	< 5 mΩ

EN 60127-6

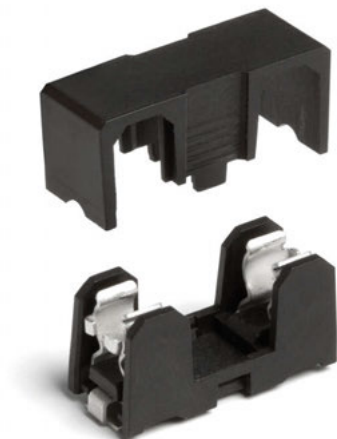
UL 4248-1 + C22.2 no. 4248-1

Rated Current / Corrente Nominale	10 A	Rated Current / Corrente Nominale	20 A
Rated Voltage / Tensione nominale	250 VAC	Rated Voltage / Tensione nominale	250 VAC
Rated Power Acceptance / Potenza dissipabile	4 W	Rated Power Acceptance / Potenza dissipabile	—

Standard colour / Colore standard	Black / Nero
Other colours / Altri colori	—
Accessories / Accessori	Cover / Cappuccio BS613 p. 36
Other information / Altri dati	p. 39
Standard package / Imballo	Bulk / Scatola 1000 pcs T&R Ø380 mm - 300 pcs

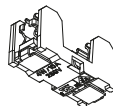


**FUSEHOLDER BLOCKS FOR P.C.B.  
PORTAFUSIBILI NON PROTETTI PER C.S.**

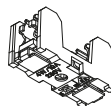


**PTF/18 SMD**

Ordering codes:  
**PTF/18SMDV81NE**  
w/o hole in plastic body




**PTF/18SMDV83NE**  
with hole in plastic body



Fuse link / Fusibile tipo	5x20 mm
Mounting / Montaggio	P.C.B. / C.S.
Rated Current / Corrente nominale	10 A
Rated Voltage / Tensione nominale	250 VAC
Rated Power Acceptance / Potenza dissipabile	4 W

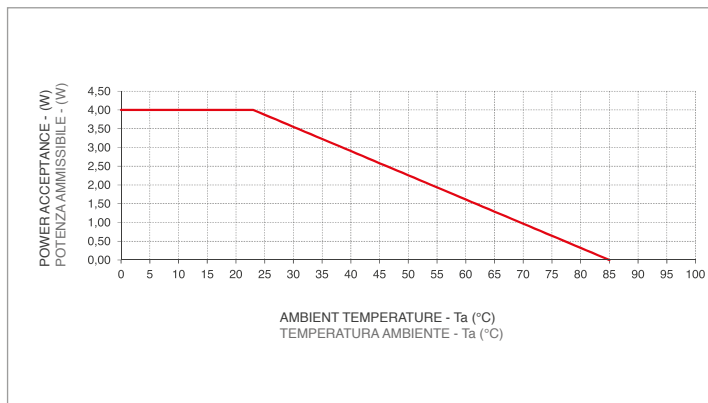
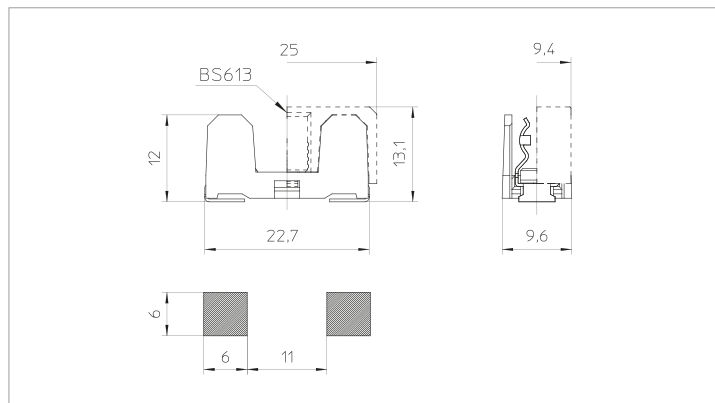
Housing / Corpo isolante	High Temperature Thermoplastic UL 94V-0
Solderability / Saldabilità	Reflow - 245 °C / 30 sec. max acc. to J-STD-020-D
Admissible ambient air temperature / Temperatura ambiente ammissibile	-30 °C to 85 °C
Shocksafe category / Protezione contro le scosse elettriche	PC1
Degree of protection / Grado di protezione	IP00 / IP20
Contact Resistance / Resistenza di contatto	< 5 mΩ

 EN 60127-6

 UL 4248-1 + C22.2 no. 4248-1

Rated Current / Corrente Nominale	10 A	Rated Current / Corrente Nominale	20 A
Rated Voltage / Tensione nominale	250 VAC	Rated Voltage / Tensione nominale	250 VAC
Rated Power Acceptance / Potenza dissipabile	4 W	Rated Power Acceptance / Potenza dissipabile	—

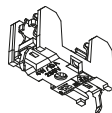
Standard colour / Colore standard	Black / Nero
Other colours / Altri colori	—
Accessories / Accessori	Cover / Cappuccio BS613 p. 36
Other information / Altri dati	p. 39
Standard package / Imballo	Bulk / Scatola 1000 pcs T&R Ø380 mm - 400 pcs



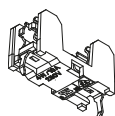
**FUSEHOLDER BLOCKS FOR P.C.B.  
PORTAFUSIBILI NON PROTETTI PER C.S.**



**PTF/18 THR (LCP)**



Ordering codes:  
**PTF/18THR82NE**  
with hole in plastic body



**PTF/18THR84NE**  
w/o hole in plastic body

Fuse link / Fusibile tipo	5x20 mm
Mounting / Montaggio	P.C.B. / C.S.
Rated Current / Corrente nominale	10 A
Rated Voltage / Tensione nominale	250 VAC
Rated Power Acceptance / Potenza dissipabile	4 W

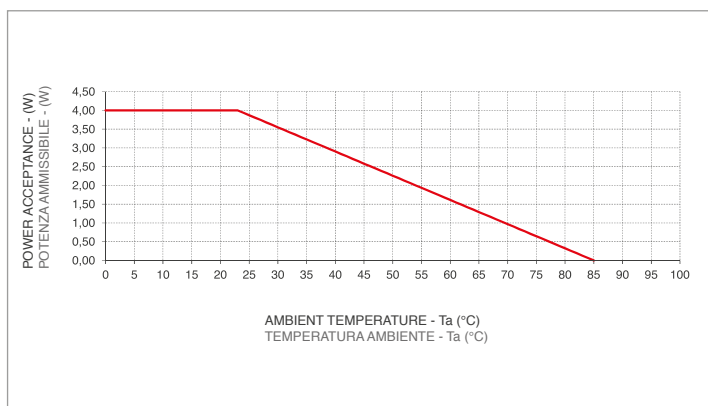
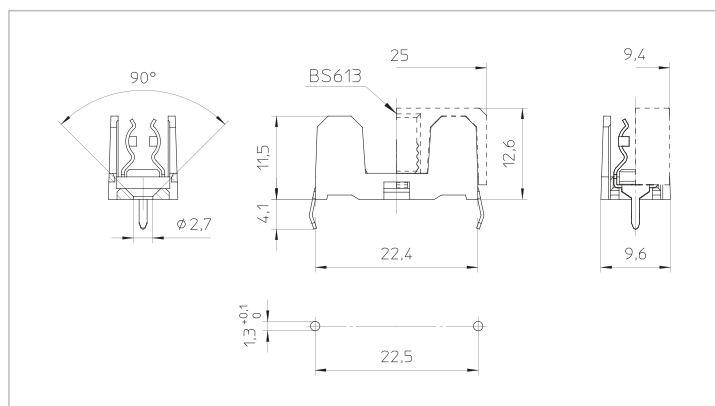
Housing / Corpo isolante	High Temperature Thermoplastic LCP UL 94V-0
Solderability / Saldabilità	Wave - 260 °C / 10 sec. acc. to EN 61760 Reflow - 260 °C / 30 sec. max acc. to J-STD-020-D
Admissible ambient air temperature / Temperatura ambiente ammissibile	-30 °C to 85 °C
Shocksafe category / Protezione contro le scosse elettriche	PC1
Degree of protection / Grado di protezione	IP00 / IP20
Contact Resistance / Resistenza di contatto	< 5 mΩ

EN 60127-6

UL 4248-1 + C22.2 no. 4248-1

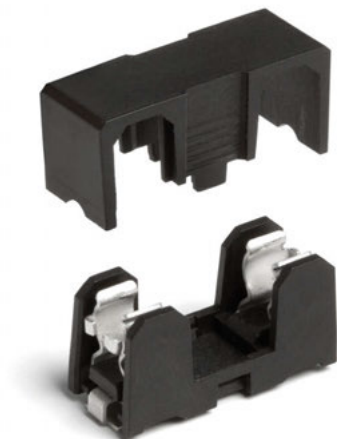
Rated Current / Corrente Nominale	10 A	Rated Current / Corrente Nominale	20 A
Rated Voltage / Tensione nominale	250 VAC	Rated Voltage / Tensione nominale	250 VAC
Rated Power Acceptance / Potenza dissipabile	4 W	Rated Power Acceptance / Potenza dissipabile	—

Standard colour / Colore standard	Black / Nero
Other colours / Altri colori	—
Accessories / Accessori	Cover / Cappuccio BS613 p. 36
Other information / Altri dati	p. 39
Standard package / Imballo	Bulk / Scatola 1000 pcs T&R Ø380 mm - 300 pcs



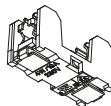


**FUSEHOLDER BLOCKS FOR P.C.B.  
PORTAFUSIBILI NON PROTETTI PER C.S.**

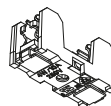


**PTF/18 SMD (LCP)**

Ordering codes:  
**PTF/18SMDV82NE**  
w/o hole in plastic body



**PTF/18SMDV84NE**  
with hole in plastic body



Fuse link / Fusibile tipo	5x20 mm
Mounting / Montaggio	P.C.B. / C.S.
Rated Current / Corrente nominale	10 A
Rated Voltage / Tensione nominale	250 VAC
Rated Power Acceptance / Potenza dissipabile	4 W

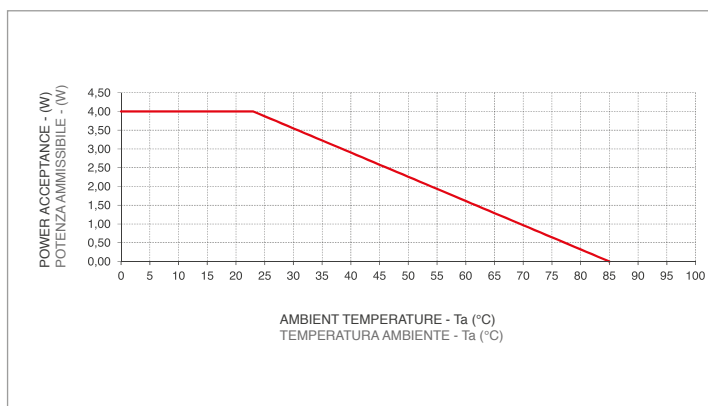
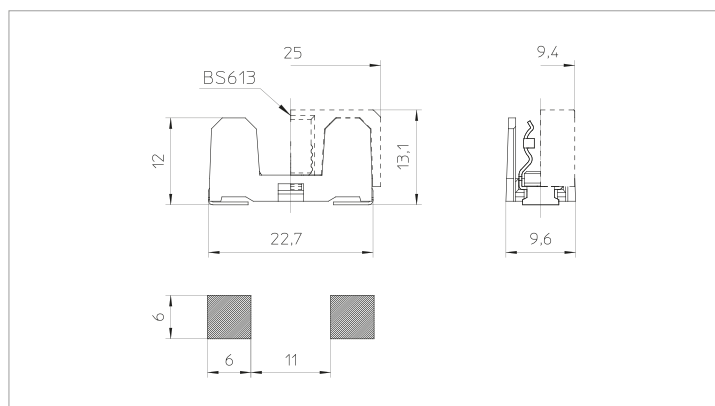
Housing / Corpo isolante	High Temperature Thermoplastic LCP UL 94V-0
Solderability / Saldabilità	Reflow - 260 °C / 30 sec. max acc. to J-STD-020-D
Admissible ambient air temperature / Temperatura ambiente ammissibile	-30 °C to 85 °C
Shocksafe category / Protezione contro le scosse elettriche	PC1
Degree of protection / Grado di protezione	IP00 / IP20
Contact Resistance / Resistenza di contatto	< 5 mΩ

EN 60127-6

UL 4248-1 + C22.2 no. 4248-1

Rated Current / Corrente Nominale	10 A	Rated Current / Corrente Nominale	20 A
Rated Voltage / Tensione nominale	250 VAC	Rated Voltage / Tensione nominale	250 VAC
Rated Power Acceptance / Potenza dissipabile	4 W	Rated Power Acceptance / Potenza dissipabile	—

Standard colour / Colore standard	Black / Nero
Other colours / Altri colori	—
Accessories / Accessori	Cover / Cappuccio BS613 p. 36
Other information / Altri dati	p. 39
Standard package / Imballo	Bulk / Scatola 1000 pcs T&R Ø380 mm - 400 pcs






Fuse link / Fusibile tipo	5x20 mm
Mounting / Montaggio	P.C.B. / C.S.
Rated Current / Corrente nominale	6,3 A
Rated Voltage / Tensione nominale	250 VAC
Rated Power Acceptance / Potenza dissipabile	1,6 W

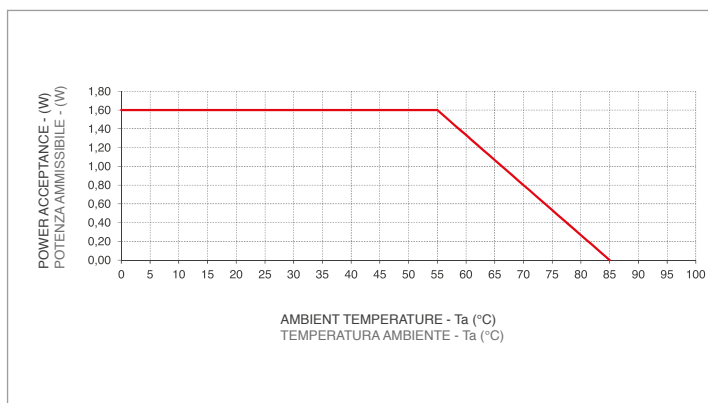
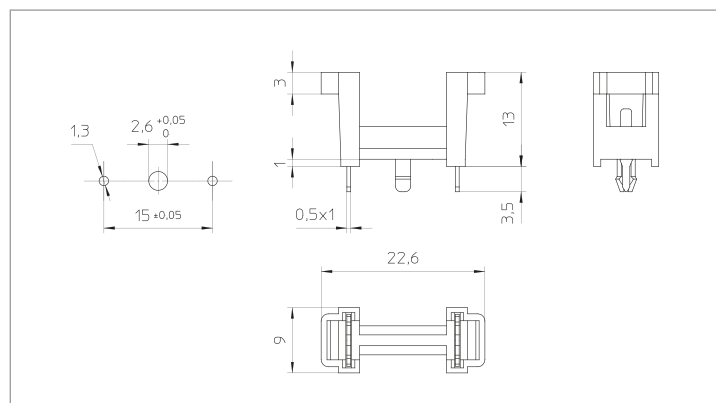
Housing / Corpo isolante	Thermoplastic UL 94 V0
Admissible ambient air temperature / Temperatura ambiente ammissibile	-30 °C to 85 °C
Shocksafe category / Protezione contro le scosse elettriche	PC1
Degree of protection / Grado di protezione	IP00
Contact Resistance / Resistenza di contatto	< 5 mΩ

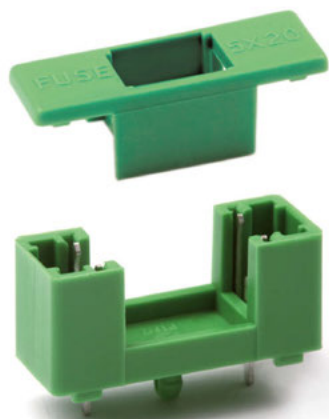
 EN 60127-6

 US UL 4248-1 + C22.2 no. 4248-1

Rated Current / Corrente Nominale	6,3 A	Rated Current / Corrente Nominale	20 A
Rated Voltage / Tensione nominale	250 VAC	Rated Voltage / Tensione nominale	250 VAC
Rated Power Acceptance / Potenza dissipabile	1,6 W	Rated Power Acceptance / Potenza dissipabile	—

Standard colour / Colore standard	White / Bianco
Other colours / Altri colori	On demand / A richiesta
Accessories / Accessori	—
Other information / Altri dati	p. 39
Standard package / Imballo	Bulk / Scatola 1000 pcs






Fuse link / Fusibile tipo	5x20 mm
Mounting / Montaggio	P.C.B. / C.S.
Rated Current / Corrente nominale	6,3 A
Rated Voltage / Tensione nominale	250 VAC
Rated Power Acceptance / Potenza dissipabile	1,6 W

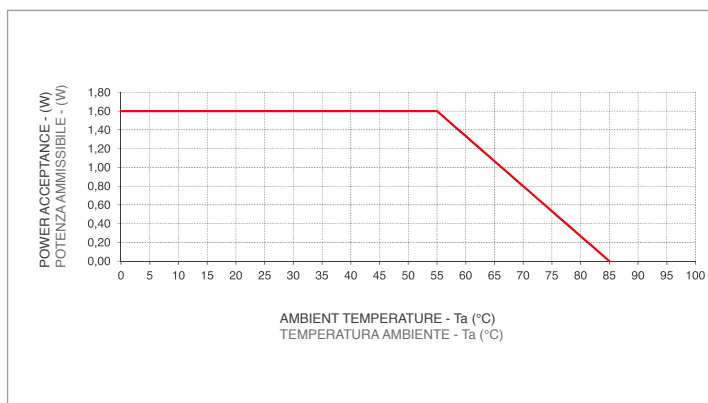
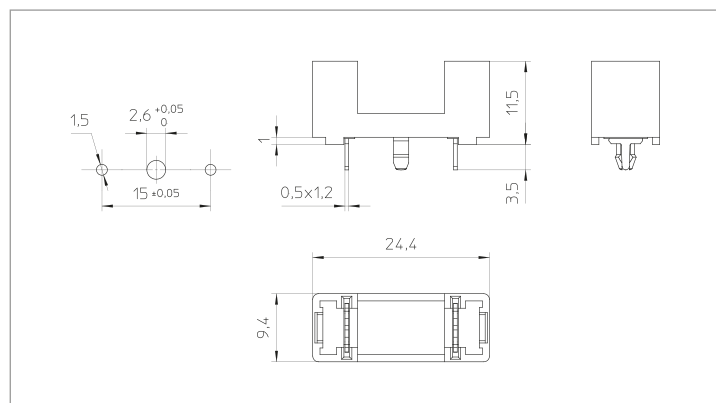
Housing / Corpo isolante	Thermoplastic UL 94 V0
Admissible ambient air temperature / Temperatura ambiente ammissibile	-30 °C to 85 °C
Shocksafe category / Protezione contro le scosse elettriche	PC1
Degree of protection / Grado di protezione	IP00
Contact Resistance / Resistenza di contatto	< 5 mΩ

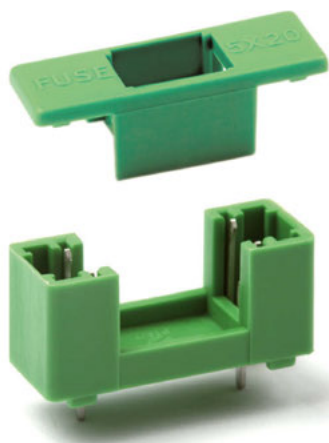
 EN 60127-6

 US UL 4248-1 + C22.2 no. 4248-1

Rated Current / Corrente Nominale	6,3 A	Rated Current / Corrente Nominale	20 A
Rated Voltage / Tensione nominale	250 VAC	Rated Voltage / Tensione nominale	250 VAC
Rated Power Acceptance / Potenza dissipabile	1,6 W	Rated Power Acceptance / Potenza dissipabile	—

Standard colour / Colore standard	Green / Verde
Other colours / Altri colori	On demand / A richiesta
Accessories / Accessori	Cover / Cappuccio BS232 p. 36
Other information / Altri dati	p. 39
Standard package / Imballo	Bulk / Scatola 1000 pcs






Fuse link / Fusibile tipo	5x20 mm
Mounting / Montaggio	P.C.B. / C.S.
Rated Current / Corrente nominale	6,3 A
Rated Voltage / Tensione nominale	250 VAC
Rated Power Acceptance / Potenza dissipabile	1,6 W

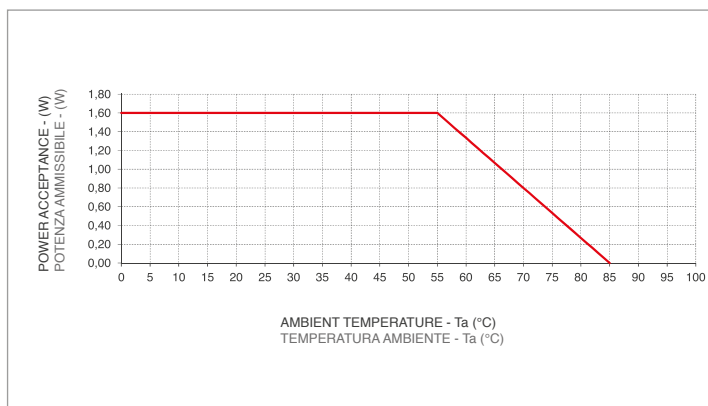
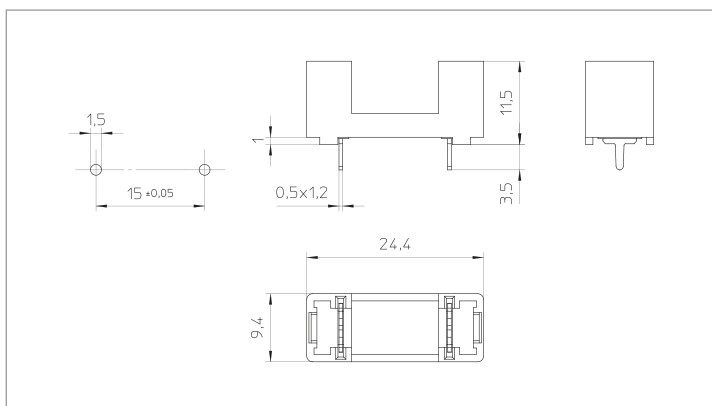
Housing / Corpo isolante	Thermoplastic UL 94 V0
Admissible ambient air temperature / Temperatura ambiente ammissibile	-30 °C to 85 °C
Shocksafe category / Protezione contro le scosse elettriche	PC1
Degree of protection / Grado di protezione	IP00
Contact Resistance / Resistenza di contatto	< 5 mΩ

 EN 60127-6

 US UL 4248-1 + C22.2 no. 4248-1

Rated Current / Corrente Nominale	6,3 A	Rated Current / Corrente Nominale	20 A
Rated Voltage / Tensione nominale	250 VAC	Rated Voltage / Tensione nominale	250 VAC
Rated Power Acceptance / Potenza dissipabile	1,6 W	Rated Power Acceptance / Potenza dissipabile	—

Standard colour / Colore standard	Green / Verde
Other colours / Altri colori	On demand / A richiesta
Accessories / Accessori	Cover / Cappuccio BS232 p. 36
Other information / Altri dati	p. 39
Standard package / Imballo	Bulk / Scatola 1000 pcs






Fuse link / Fusibile tipo	5x20 mm
Mounting / Montaggio	P.C.B. / C.S.
Rated Current / Corrente nominale	6,3 A
Rated Voltage / Tensione nominale	250 VAC
Rated Power Acceptance / Potenza dissipabile	1,6 W

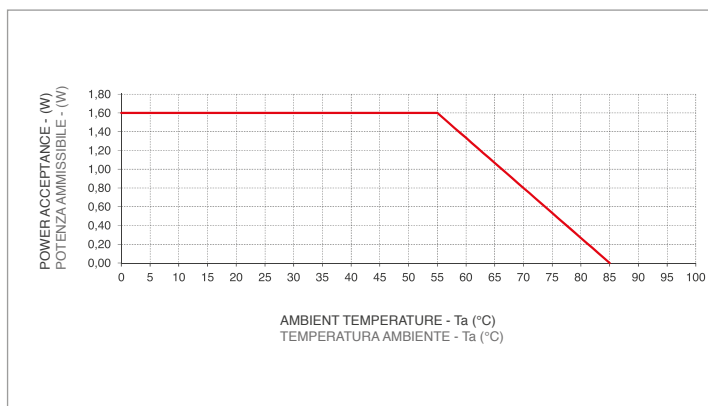
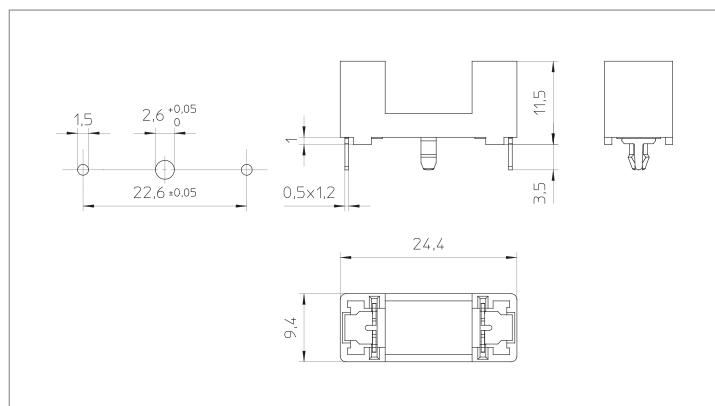
Housing / Corpo isolante	Thermoplastic UL 94 V0
Admissible ambient air temperature / Temperatura ambiente ammissibile	-30 °C to 85 °C
Shocksafe category / Protezione contro le scosse elettriche	PC1
Degree of protection / Grado di protezione	IP00
Contact Resistance / Resistenza di contatto	< 5 mΩ

 EN 60127-6

 US UL 4248-1 + C22.2 no. 4248-1

Rated Current / Corrente Nominale	6,3 A	Rated Current / Corrente Nominale	20 A
Rated Voltage / Tensione nominale	250 VAC	Rated Voltage / Tensione nominale	250 VAC
Rated Power Acceptance / Potenza dissipabile	1,6 W	Rated Power Acceptance / Potenza dissipabile	—

Standard colour / Colore standard	Green / Verde
Other colours / Altri colori	On demand / A richiesta
Accessories / Accessori	Cover / Cappuccio BS232 p. 36
Other information / Altri dati	p. 39
Standard package / Imballo	Bulk / Scatola 1000 pcs





Fuse link / Fusibile tipo	5x20 mm
Mounting / Montaggio	P.C.B. / C.S.
Rated Current / Corrente nominale	6,3 A
Rated Voltage / Tensione nominale	250 VAC
Rated Power Acceptance / Potenza dissipabile	1,6 W

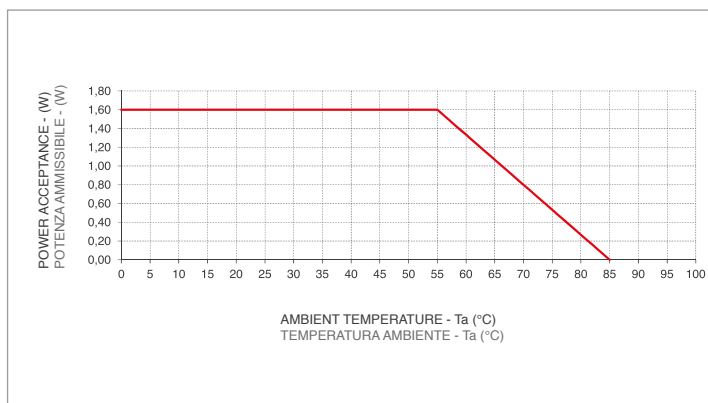
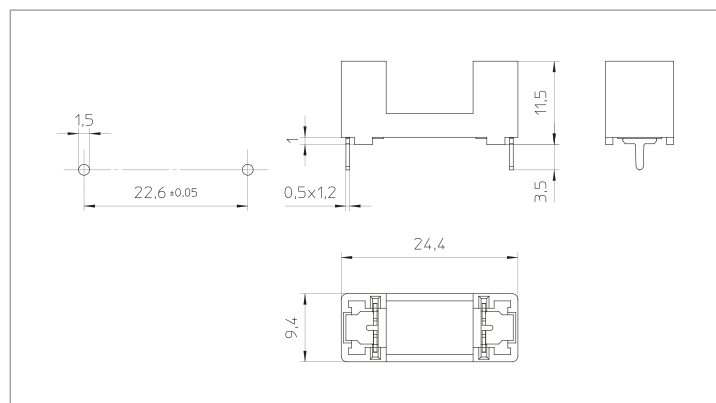
Housing / Corpo isolante	Thermoplastic UL 94 V0
Admissible ambient air temperature / Temperatura ambiente ammissibile	-30 °C to 85 °C
Shocksafe category / Protezione contro le scosse elettriche	PC1
Degree of protection / Grado di protezione	IP00
Contact Resistance / Resistenza di contatto	< 5 mΩ

EN 60127-6

UL 4248-1 + C22.2 no. 4248-1

Rated Current / Corrente Nominale	6,3 A	Rated Current / Corrente Nominale	20 A
Rated Voltage / Tensione nominale	250 VAC	Rated Voltage / Tensione nominale	250 VAC
Rated Power Acceptance / Potenza dissipabile	1,6 W	Rated Power Acceptance / Potenza dissipabile	—

Standard colour / Colore standard	Green / Verde
Other colours / Altri colori	On demand / A richiesta
Accessories / Accessori	Cover / Cappuccio BS232 p. 36
Other information / Altri dati	p. 40
Standard package / Imballo	Bulk / Scatola 1000 pcs



# **SHOCKSAFE FUSEHOLDERS FOR P.C.B. PORTAFUSIBILI PROTETTI PER C.S.**



Fuse link / Fusibile tipo	5x20 mm
Mounting / Montaggio	P.C.B. / C.S.
Rated Current / Corrente nominale	10 A
Rated Voltage / Tensione nominale	250 VAC
Rated Power Acceptance / Potenza dissipabile	2,5 W

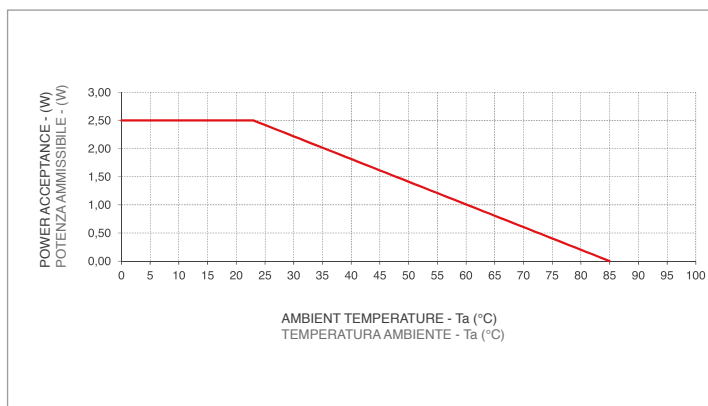
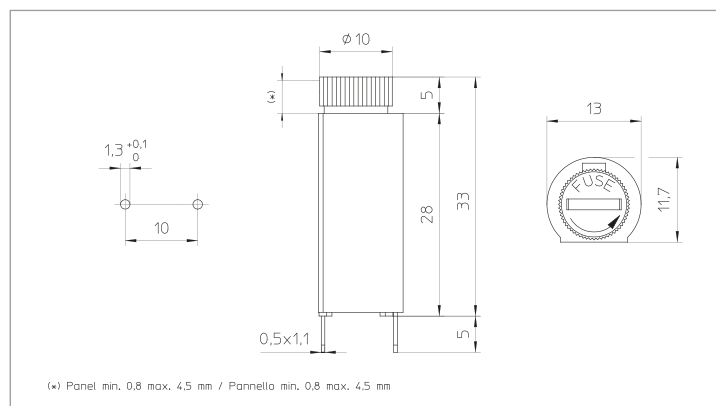
Housing / Corpo isolante	Thermoplastic UL 94 V0
Admissible ambient air temperature / Temperatura ambiente ammissibile	-30 °C to 85 °C
Shocksafe category / Protezione contro le scosse elettriche	PC2
Degree of protection / Grado di protezione	IP20
Contact Resistance / Resistenza di contatto	< 5 mΩ

EN 60127-6

UL 4248-1 + C22.2 no. 4248-1

Rated Current / Corrente Nominale	10 A	Rated Current / Corrente Nominale	20 A
Rated Voltage / Tensione nominale	250 VAC	Rated Voltage / Tensione nominale	250 VAC
Rated Power Acceptance / Potenza dissipabile	2,5 W	Rated Power Acceptance / Potenza dissipabile	—

Standard colour / Colore standard	Black / Nero
Other colours / Altri colori	On demand / A richiesta
Accessories / Accessori	—
Other information / Altri dati	p. 41
Standard package / Imballo	Bulk / Scatola 1000 pcs








Fuse link / Fusibile tipo	5x20 mm
Mounting / Montaggio	P.C.B. / C.S.
Rated Current / Corrente nominale	10 A
Rated Voltage / Tensione nominale	250 VAC
Rated Power Acceptance / Potenza dissipabile	2,5 W

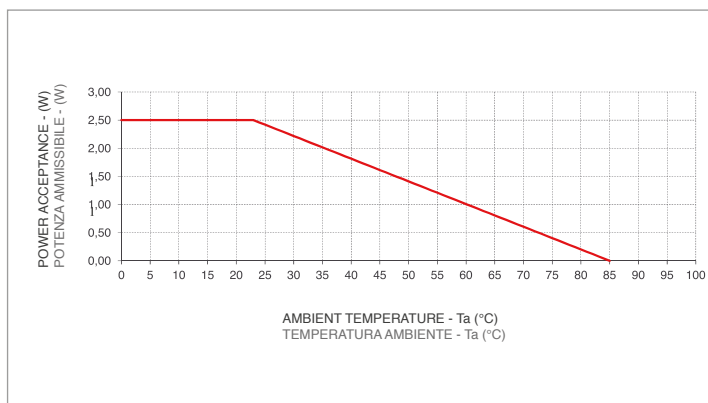
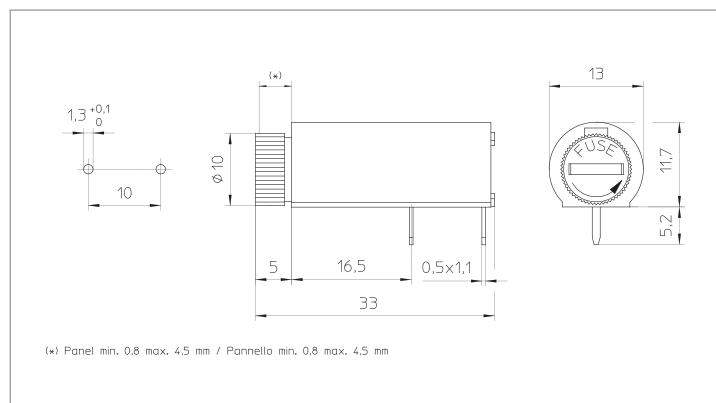
Housing / Corpo isolante	Thermoplastic UL 94 V0
Admissible ambient air temperature / Temperatura ambiente ammissibile	-30 °C to 85 °C
Shocksafe category / Protezione contro le scosse elettriche	PC2
Degree of protection / Grado di protezione	IP20
Contact Resistance / Resistenza di contatto	< 5 mΩ

 EN 60127-6

 US UL 4248-1 + C22.2 no. 4248-1

Rated Current / Corrente Nominale	10 A	Rated Current / Corrente Nominale	20 A
Rated Voltage / Tensione nominale	250 VAC	Rated Voltage / Tensione nominale	250 VAC
Rated Power Acceptance / Potenza dissipabile	2,5 W	Rated Power Acceptance / Potenza dissipabile	—

Standard colour / Colore standard	Black / Nero
Other colours / Altri colori	On demand / A richiesta
Accessories / Accessori	—
Other information / Altri dati	p. 41
Standard package / Imballo	Bulk / Scatola 1000 pcs





# SHOCKSAFE FUSEHOLDERS FOR PANEL PORTAFUSIBILI PROTETTI DA PANNELLO



Fuse link / Fusibile tipo	5x20 mm
Mounting / Montaggio	Panel / Pannello
Rated Current / Corrente nominale	10 A
Rated Voltage / Tensione nominale	250 VAC
Rated Power Acceptance / Potenza dissipabile	2,5 W

Housing / Corpo isolante	Thermoplastic UL 94 V0
Admissible ambient air temperature / Temperatura ambiente ammissibile	-30 °C to 85 °C
Shocksafe category / Protezione contro le scosse elettriche	PC1 - PC2
Degree of protection / Grado di protezione	IP40
Contact Resistance / Resistenza di contatto	< 5 mΩ

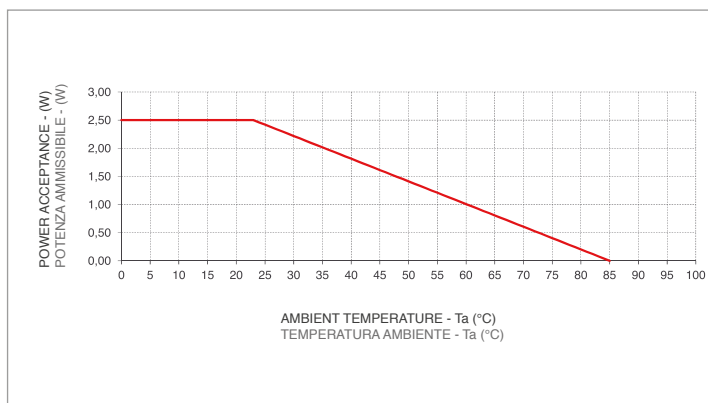
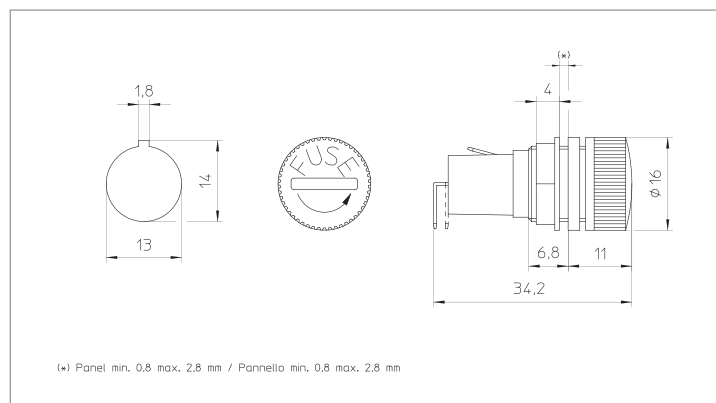
EN 60127-6

Rated Current / Corrente Nominale	10 A
Rated Voltage / Tensione nominale	250 VAC
Rated Power Acceptance / Potenza dissipabile	2,5 W

US UL 4248-1 + C22.2 no. 4248-1

Rated Current / Corrente Nominale	20 A
Rated Voltage / Tensione nominale	250 VAC
Rated Power Acceptance / Potenza dissipabile	—

Standard colour / Colore standard	Black / Nero
Other colours / Altri colori	On demand / A richiesta
Accessories / Accessori	—
Other information / Altri dati	p. 42
Standard package / Imballo	Bulk / Scatola 1000 pcs






Fuse link / Fusibile tipo	5x20 mm
Mounting / Montaggio	Panel / Pannello
Rated Current / Corrente nominale	10 A
Rated Voltage / Tensione nominale	250 VAC
Rated Power Acceptance / Potenza dissipabile	2,5 W

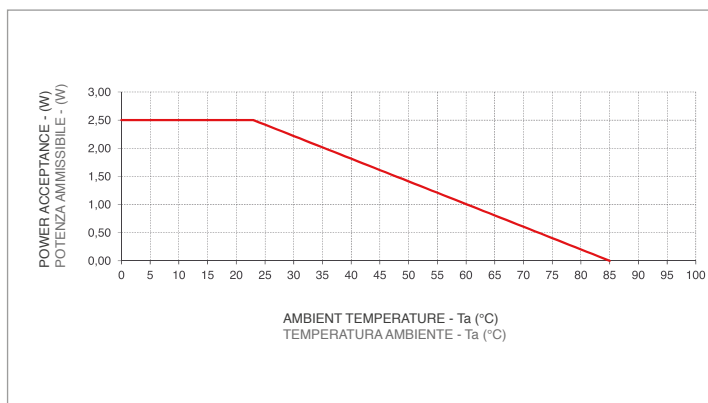
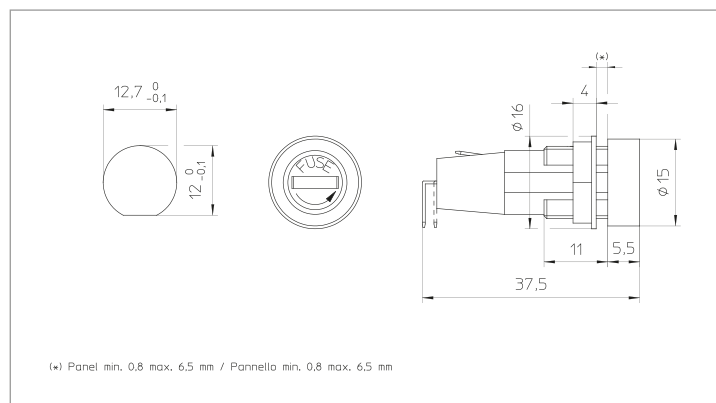
Housing / Corpo isolante	Thermoplastic UL 94 V0
Admissible ambient air temperature / Temperatura ambiente ammissibile	-30 °C to 85 °C
Shocksafe category / Protezione contro le scosse elettriche	PC2
Degree of protection / Grado di protezione	IP40
Contact Resistance / Resistenza di contatto	< 5 mΩ

 EN 60127-6

 US UL 4248-1 + C22.2 no. 4248-1

Rated Current / Corrente Nominale	10 A	Rated Current / Corrente Nominale	20 A
Rated Voltage / Tensione nominale	250 VAC	Rated Voltage / Tensione nominale	250 VAC
Rated Power Acceptance / Potenza dissipabile	2,5 W	Rated Power Acceptance / Potenza dissipabile	—

Standard colour / Colore standard	Black / Nero
Other colours / Altri colori	On demand / A richiesta
Accessories / Accessori	—
Other information / Altri dati	p. 42
Standard package / Imballo	Bulk / Scatola 1000 pcs






Fuse link / Fusibile tipo	5x20 mm
Mounting / Montaggio	Panel / Pannello
Rated Current / Corrente nominale	10 A
Rated Voltage / Tensione nominale	250 VAC
Rated Power Acceptance / Potenza dissipabile	2,5 W

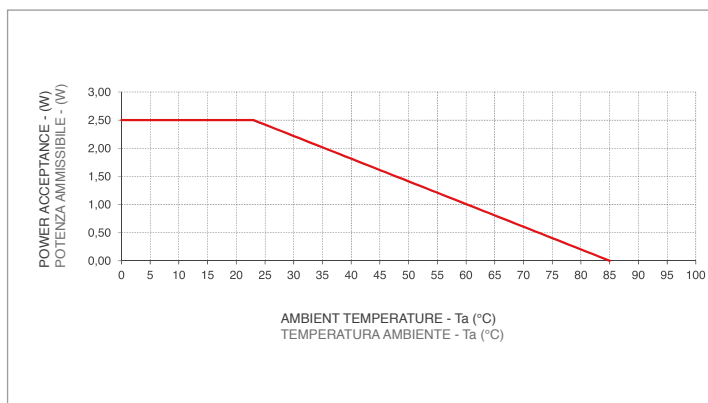
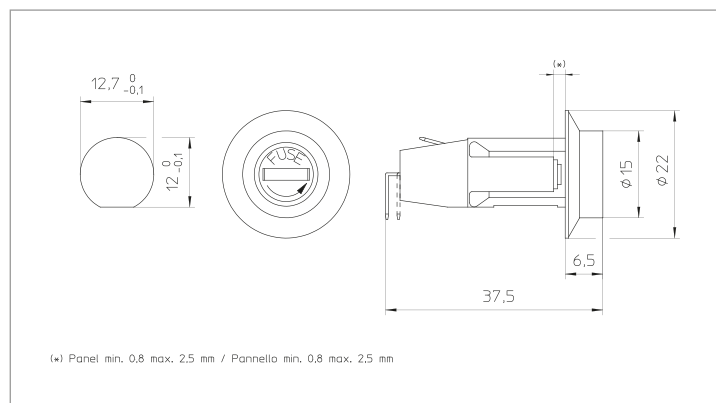
Housing / Corpo isolante	Thermoplastic UL 94 V0
Admissible ambient air temperature / Temperatura ambiente ammissibile	-30 °C to 85 °C
Shocksafe category / Protezione contro le scosse elettriche	PC2
Degree of protection / Grado di protezione	IP40
Contact Resistance / Resistenza di contatto	< 5 mΩ

 EN 60127-6

 US UL 4248-1 + C22.2 no. 4248-1

Rated Current / Corrente Nominale	10 A	Rated Current / Corrente Nominale	20 A
Rated Voltage / Tensione nominale	250 VAC	Rated Voltage / Tensione nominale	250 VAC
Rated Power Acceptance / Potenza dissipabile	2,5 W	Rated Power Acceptance / Potenza dissipabile	—

Standard colour / Colore standard	Black / Nero
Other colours / Altri colori	On demand / A richiesta
Accessories / Accessori	—
Other information / Altri dati	p. 43
Standard package / Imballo	Bulk / Scatola 1000 pcs






Fuse link / Fusibile tipo	5x20 mm
Mounting / Montaggio	Panel / Pannello
Rated Current / Corrente nominale	10 A
Rated Voltage / Tensione nominale	250 VAC
Rated Power Acceptance / Potenza dissipabile	2,5 W

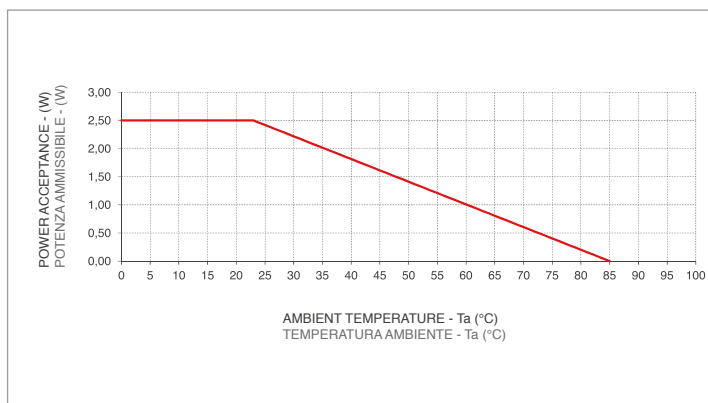
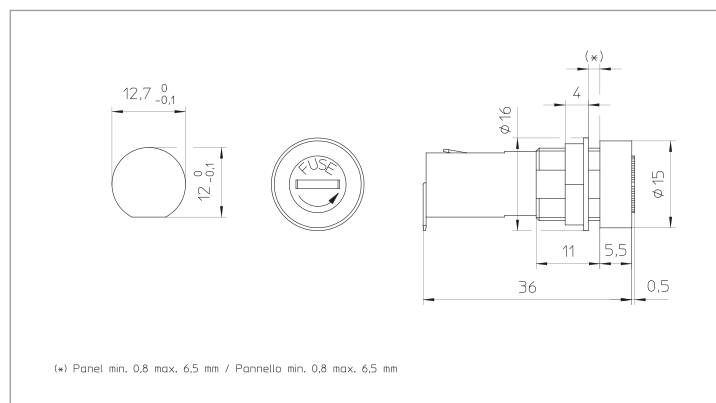
Housing / Corpo isolante	Thermoplastic UL 94 V0
Admissible ambient air temperature / Temperatura ambiente ammissibile	-30 °C to 85 °C
Shocksafe category / Protezione contro le scosse elettriche	PC2
Degree of protection / Grado di protezione	IP40
Contact Resistance / Resistenza di contatto	< 5 mΩ

 EN 60127-6

Rated Current / Corrente Nominale	10 A	Rated Current / Corrente Nominale	20 A
Rated Voltage / Tensione nominale	250 VAC	Rated Voltage / Tensione nominale	250 VAC
Rated Power Acceptance / Potenza dissipabile	2,5 W	Rated Power Acceptance / Potenza dissipabile	—

 US UL 4248-1 + C22.2 no. 4248-1

Standard colour / Colore standard	Black / Nero
Other colours / Altri colori	On demand / A richiesta
Accessories / Accessori	—
Other information / Altri dati	p. 43
Standard package / Imballo	Bulk / Scatola 1000 pcs





Fuse link / Fusibile tipo	5x20 mm
Mounting / Montaggio	Panel / Pannello
Rated Current / Corrente nominale	10 A
Rated Voltage / Tensione nominale	250 VAC
Rated Power Acceptance / Potenza dissipabile	2,5 W

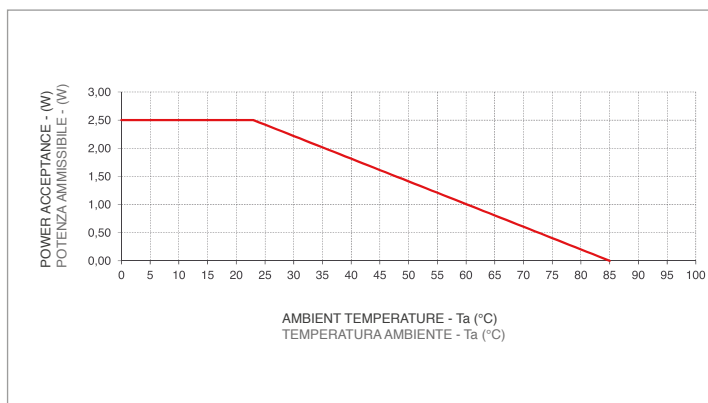
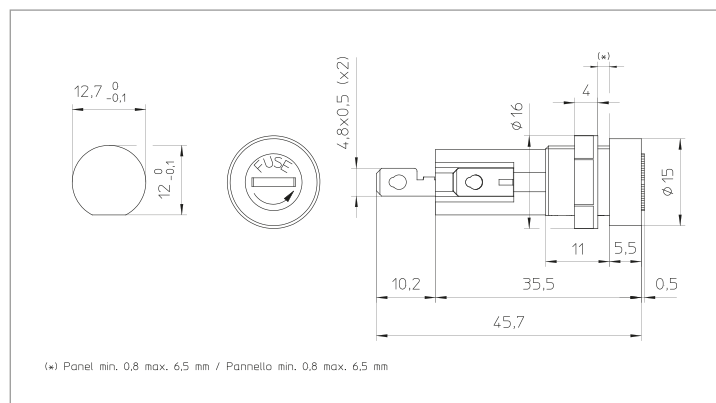
Housing / Corpo isolante	Thermoplastic UL 94 V0
Admissible ambient air temperature / Temperatura ambiente ammissibile	-30 °C to 85 °C
Shocksafe category / Protezione contro le scosse elettriche	PC2
Degree of protection / Grado di protezione	IP40
Contact Resistance / Resistenza di contatto	< 5 mΩ

EN 60127-6

US UL 4248-1 + C22.2 no. 4248-1

Rated Current / Corrente nominale	10 A	Rated Current / Corrente nominale	20 A
Rated Voltage / Tensione nominale	250 VAC	Rated Voltage / Tensione nominale	250 VAC
Rated Power Acceptance / Potenza dissipabile	2,5 W	Rated Power Acceptance / Potenza dissipabile	—

Standard colour / Colore standard	Black / Nero
Other colours / Altri colori	On demand / A richiesta
Accessories / Accessori	—
Other information / Altri dati	p. 43
Standard package / Imballo	Bulk / Scatola 1000 pcs





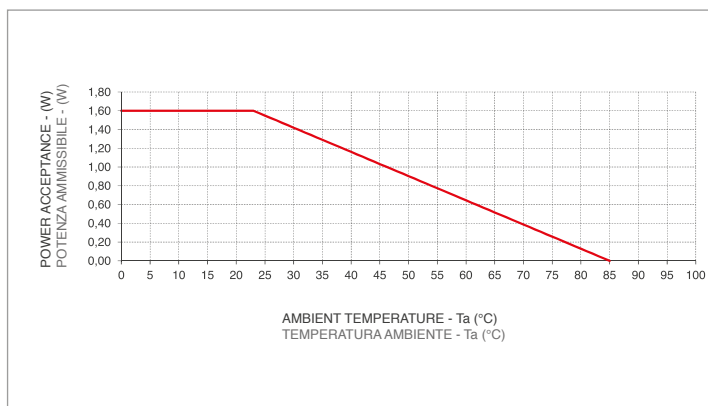
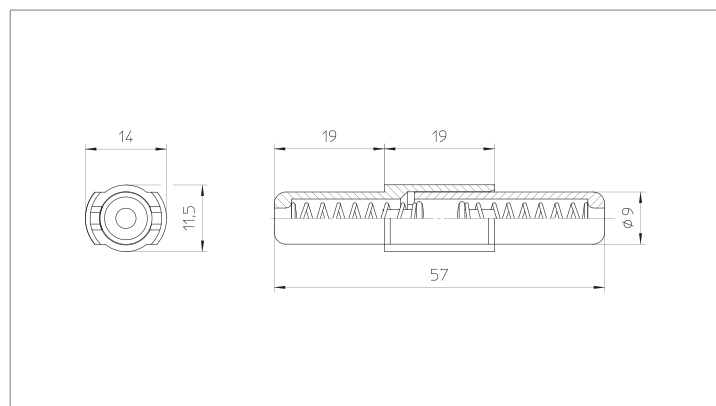
# IN-LINE SHOCKSAFE FUSEHOLDERS PORTAFUSIBILI PROTETTI VOLANTI



Fuse link / Fusibile tipo	5x20 mm and 6,3x32 mm
Mounting / Montaggio	In-line / Volante
Rated Current / Corrente nominale	6,3 A
Rated Voltage / Tensione nominale	250 VAC
Rated Power Acceptance / Potenza dissipabile	1,6 W

Housing / Corpo isolante	Thermoplastic UL 94 HB
Admissible ambient air temperature / Temperatura ambiente ammissibile	-30 °C to 85 °C
Shocksafe category / Protezione contro le scosse elettriche	PC1
Degree of protection / Grado di protezione	IP00
Contact Resistance / Resistenza di contatto	< 5 mΩ

Standard colour / Colore standard	Black / Nero
Other colours / Altri colori	—
Accessories / Accessori	—
Other information / Altri dati	p. 43
Standard package / Imballo	Bulk / Scatola 1000 pcs

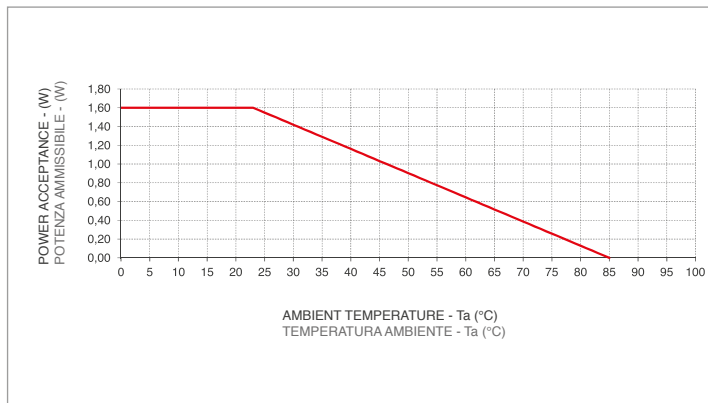
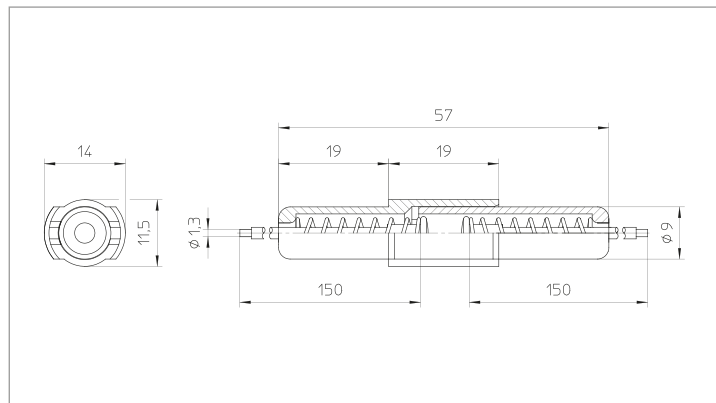




Fuse link / Fusibile tipo	5x20 mm and 6,3x32 mm
Mounting / Montaggio	In-line / Volante
Rated Current / Corrente nominale	6,3 A
Rated Voltage / Tensione nominale	250 VAC
Rated Power Acceptance / Potenza dissipabile	1,6 W

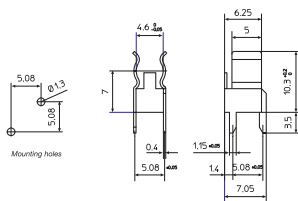
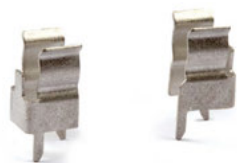
Housing / Corpo isolante	Thermoplastic UL 94 HB
Admissible ambient air temperature / Temperatura ambiente ammissibile	-30 °C to 85 °C
Shocksafe category / Protezione contro le scosse elettriche	PC1
Degree of protection / Grado di protezione	IP00
Contact Resistance / Resistenza di contatto	< 5 mΩ

Standard colour / Colore standard	Black / Nero
Other colours / Altri colori	—
Accessories / Accessori	—
Other information / Altri dati	p. 43
Standard package / Imballo	Bulk / Scatola 1000 pcs



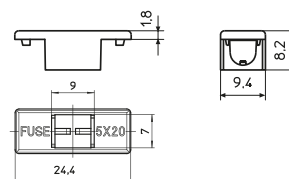
## ACCESSORIES ACCESSORI

### CT134 CLIPS / CONTATTI



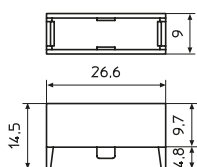
Material / Materiale	Copper Alloy / Lega di rame
Plating / Trattamento galvanico	Ni + Sn

### BS232 COVER / CAPPuccio



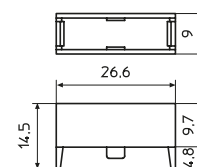
Material / Materiale	Thermoplastic UL 94 V0
Standard colour / Colore standard	Green / Verde
Other colours / Altri colori	On demand / A richiesta

### BS140ANA COVER / CAPPuccio



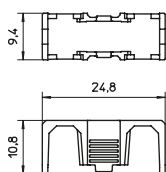
Material / Materiale	Thermoplastic UL 94 V0
Colour / Colore	Opaque / Opaco

### BS140NA COVER / CAPPuccio



Material / Materiale	Thermoplastic UL 94 V2
Colour / Colore	Clear transparent / Trasparente

### BS613 COVER / CAPPuccio



	BS613V81NE	BS613V82NE	BS613NA
Material / Materiale	High Temperature Thermoplastic UL 94 V0	High Temperature Thermoplastic LCP UL 94 V0	Thermoplastic UL 94 V0
Standard colour / Colore standard	Black / Nero	Black / Nero	Transparent / Trasparente
Rated power acceptance / Potenza Dissipabile	4 W	4 W	2,5 W

## ACCESSORIES CORRESPONDANCE TABLE TABELLA DI CORRISPONDENZA DEGLI ACCESSORI

	PTF/15	PTF/15B	PTF/18 THR PTF/18 SMD	PTF/18 THR (LCP) PTF/18 SMD (LCP)	PTF/75	PTF/76	PTF/77	PTF/78
BS140NA	•	•						
BS140ANA	•	•						
BS232					•	•	•	•
BS613V81NE			•					
BS613V82NE				•				
BS613NA			•	•				

# TECHNICAL DATA

## DATI TECNICI

Due to continuous development of our products, together with altering manufacturing methods, the descriptions and data provided are for information only and subject to changes without notice. We will be pleased to discuss detailed requirements.

All supplies and services are made exclusively on the basis of the General Terms and Conditions of Trade of Würth Elektronik Stelvio Kontek S.p.A. ([www.stelvio-kontek.com](http://www.stelvio-kontek.com)).

A seguito dei continui sviluppi sui prodotti e processi produttivi, l'azienda si riserva il diritto di modificare i dati del presente catalogo senza preavviso. Saremo lieti di discutere richieste specifiche.

Le nostre forniture e servizi sono erogati esclusivamente in riferimento alle condizioni generali di vendita di Würth Elektronik Stelvio Kontek S.p.A. ([www.stelvio-kontek.com](http://www.stelvio-kontek.com)).

## FUSEHOLDER BLOCKS FOR P.C.B. PORTAFUSIBILI NON PROTETTI PER C.S.

PTF/15

PTF/15B



Protection against electric shock (equipment) / Protezione contro le scosse elettriche (apparecchiature)	I - II	I - II
Shocksafe category / Protezione contro la scossa elettrica riferita al supporto	PC1	PC1
Impulse withstand voltage between terminals / Tensione d'impulso fra i terminali	> 4,0 kV	> 4,0 kV
Impulse withstand voltage between terminals and panel plate / Tensione d'impulso fra i terminali e pannello	—	—
Overvoltage category / Categoria di sovravoltaggio	III	III
Pollution degree / Grado di inquinamento	3	3
Insulation resistance between terminals / Resistenza di isolamento fra terminali	> 10 MΩ	> 10 MΩ
Insulation resistance between terminals and panel plate / Resistenza di isolamento fra terminali e pannello	—	—
Dielectric strength between terminals / Rigidità dielettrica fra terminali	> 1,5 kV	> 1,5 kV
Dielectric strength between terminals and panel plate / Rigidità dielettrica fra terminali e pannello	—	—

Fuse-carrier torque / Coppia di torsione del cappuccio portafusibile	—	—
Panel thickness / Spessore del pannello	—	—
Fixing nut torque / Coppia di fissaggio della ghiera	—	—

Housing / Corpo isolante	Thermoplastic	Thermoplastic
Flame class rating / Autoestinguenza	UL 94 V1	UL 94 V1
Contact to P.C.B. - Plating / Terminale per C.S. - Trattamento galvanico	Copper Alloy Ni + Sn	Copper Alloy Ni + Sn
Spring - Plating / Molla - Trattamento galvanico	—	—

Plastic fuse carrier / Cappuccio plastico	BS140 p. 36	BS140 p. 36
Flame class rating / Autoestinguenza	—	—
Contact - Plating / Terminale - Trattamento galvanico	—	—
Spring / Molla	—	—

Plastic nut / Ghiera plastica	—	—
Flame class rating / Autoestinguenza	—	—

PTF/18 THR  
PTF/18 SMD



PTF/18 THR (LCP)  
PTF/18 SMD (LCP)



PTF/60



PTF/75



PTF/76



PTF/77



I - II	I - II	I - II	I - II	I - II	I - II
PC1	PC1	PC1	PC1	PC1	PC1
> 4,0 kV	> 4,0 kV	> 4,0 kV	> 4,0 kV	> 4,0 kV	> 4,0 kV
—	—	—	—	—	—
III	III	III	III	III	III
3	3	3	3	3	3
> 10 MΩ	> 10 MΩ	> 10 MΩ	> 10 MΩ	> 10 MΩ	> 10 MΩ
—	—	—	—	—	—
> 1,5 kV	> 1,5 kV	> 1,5 kV	> 1,5 kV	> 1,5 kV	> 1,5 kV
—	—	—	—	—	—

—	—	—	—	—	—
—	—	—	—	—	—
—	—	—	—	—	—

High Temp. Thermoplastic	High Temp. Thermoplastic LCP	Thermoplastic	Thermoplastic	Thermoplastic	Thermoplastic
UL 94 V0	UL 94 V0	UL 94 V0	UL 94 V0	UL 94 V0	UL 94 V0
Copper Alloy Ni + Sn	Copper Alloy Ni + Sn	Copper Alloy Ni + Sn	Copper Alloy Ni + Sn	Copper Alloy Ni + Sn	Copper Alloy Ni + Sn
—	—	—	—	—	—

BS613 p. 36	BS613 p. 36	—	BS232 p. 36	BS232 p. 36	BS232 p. 36
—	—	—	—	—	—
—	—	—	—	—	—
—	—	—	—	—	—

—	—	—	—	—	—
—	—	—	—	—	—

## FUSEHOLDER BLOCKS FOR P.C.B. PORTAFUSIBILI NON PROTETTI PER C.S.



PTF/78



Protection against electric shock (equipment) / Protezione contro le scosse elettriche (apparecchiature)	I - II
Shocksafe category / Protezione contro la scossa elettrica riferita al supporto	PC1
Impulse withstand voltage between terminals / Tensione d'impulso fra i terminali	> 4,0 kV
Impulse withstand voltage between terminals and panel plate / Tensione d'impulso fra i terminali e pannello	—
Overvoltage category / Categoria di sovravoltaggio	III
Pollution degree / Grado di inquinamento	3
Insulation resistance between terminals / Resistenza di isolamento fra terminali	> 10 MΩ
Insulation resistance between terminals and panel plate / Resistenza di isolamento fra terminali e pannello	—
Dielectric strength between terminals / Rigidità dielettrica fra terminali	> 1,5 kV
Dielectric strength between terminals and panel plate / Rigidità dielettrica fra terminali e pannello	—
<hr/>	
Fuse-carrier torque / Coppia di torsione del cappuccio portafusibile	—
Panel thickness / Spessore del pannello	—
Fixing nut torque / Coppia di fissaggio della ghiera	—
<hr/>	
Housing / Corpo isolante	Thermoplastic
Flame class rating / Autoestinguenza	UL 94 V0
Contact to P.C.B. - Plating / Terminale per C.S. - Trattamento galvanico	Copper Alloy Ni + Sn
Spring - Plating / Molla - Trattamento galvanico	—
<hr/>	
Plastic fuse carrier / Cappuccio plastico	BS232 p. 36
Flame class rating / Autoestinguenza	—
Contact - Plating / Terminale - Trattamento galvanico	—
Spring / Molla	—
<hr/>	
Plastic nut / Ghiera plastica	—
Flame class rating / Autoestinguenza	—



## SHOCKSAFE FUSEHOLDERS FOR P.C.B. PORTAFUSIBILI PROTETTI PER C.S.

	PTF/45	PTF/50
		
Protection against electric shock (equipment) / Protezione contro le scosse elettriche (apparecchiature)	II	II
Shocksafe category / Protezione contro la scossa elettrica riferita al supporto	PC2	PC2
Impulse withstand voltage between terminals / Tensione d'impulso fra i terminali	> 4,0 kV	> 4,0 kV
Impulse withstand voltage between terminals and panel plate / Tensione d'impulso fra i terminali e pannello	> 6,0 kV	> 6,0 kV
Overvoltage category / Categoria di sovravoltaggio	III	III
Pollution degree / Grado di inquinamento	2	2
Insulation resistance between terminals / Resistenza di isolamento fra terminali	> 10 MΩ	> 10 MΩ
Insulation resistance between terminals and panel plate / Resistenza di isolamento fra terminali e pannello	> 100 MΩ	> 100 MΩ
Dielectric strength between terminals / Rigidità dielettrica fra terminali	> 1,5 kV	> 1,5 kV
Dielectric strength between terminals and panel plate / Rigidità dielettrica fra terminali e pannello	> 3,0 kV	> 3,0 kV
<hr/>		
Fuse-carrier torque / Coppia di torsione del cappuccio portafusibile	Max 0,4 Nm	Max 0,4 Nm
Panel thickness / Spessore del pannello	Min 0,8 - Max 4,5 mm	Min 0,8 - Max 4,5 mm
Fixing nut torque / Coppia di fissaggio della ghiera	—	—
<hr/>		
Housing / Corpo isolante	Thermoplastic	Thermoplastic
Flame class rating / Autoestinguenza	UL 94 V0	UL 94 V0
Contact to P.C.B. - Plating / Terminale per C.S. - Trattamento galvanico	Copper Alloy Ni + Sn	Copper Alloy Ni + Sn
Spring - Plating / Molla - Trattamento galvanico	—	—
<hr/>		
Plastic fuse carrier / Cappuccio plastico	Thermoplastic	Thermoplastic
Flame class rating / Autoestinguenza	UL 94 V0	UL 94 V0
Contact - Plating / Terminale - Trattamento galvanico	Copper Alloy Ni + Sn	Copper Alloy Ni + Sn
Spring / Molla	Inox	Inox
<hr/>		
Plastic nut / Ghiera plastica	—	—
Flame class rating / Autoestinguenza	—	—

# SHOCKSAFE FUSEHOLDERS FOR PANEL PORTAFUSIBILI PROTETTI DA PANNELLO

PTF/30

PTF/35



Protection against electric shock (equipment) / Protezione contro le scosse elettriche (apparecchiature)	I - II	I - II
Shocksafe category / Protezione contro la scossa elettrica riferita al supporto	PC2	PC2
Impulse withstand voltage between terminals / Tensione d'impulso fra i terminali	> 4,0 kV	> 4,0 kV
Impulse withstand voltage between terminals and panel plate / Tensione d'impulso fra i terminali e pannello	> 6,0 kV	> 6,0 kV
Overvoltage category / Categoria di sovravoltaggio	III	III
Pollution degree / Grado di inquinamento	3	3
Insulation resistance between terminals / Resistenza di isolamento fra terminali	> 10 MΩ	> 10 MΩ
Insulation resistance between terminals and panel plate / Resistenza di isolamento fra terminali e pannello	> 100 MΩ	> 100 MΩ
Dielectric strength between terminals / Rigidità dielettrica fra terminali	> 1,5 kV	> 1,5 kV
Dielectric strength between terminals and panel plate / Rigidità dielettrica fra terminali e pannello	> 3 kV	> 3 kV

Fuse-carrier torque / Coppia di torsione del cappuccio portafusibile	Max 0,4 Nm	Max 0,4 Nm
Panel thickness / Spessore del pannello	Min 0,8 - Max 2,8 mm	Min 0,8 - Max 6,5 mm
Fixing nut torque / Coppia di fissaggio della ghiera	Max 1,2 Nm	Max 1,2 Nm

Housing / Corpo isolante	Thermoplastic	Thermoplastic
Flame class rating / Autoestinguenza	UL 94 V0	UL 94 V0
Contact to P.C.B. - Plating / Terminale per C.S. - Trattamento galvanico	Copper Alloy Ni + Sn	Copper Alloy Ni + Sn
Spring - Plating / Molla - Trattamento galvanico	Inox	Inox

Plastic fuse carrier / Cappuccio plastico	Thermoplastic	Thermoplastic
Flame class rating / Autoestinguenza	UL 94 V0	UL 94 V0
Contact - Plating / Terminale - Trattamento galvanico	Copper Alloy Ni + Sn	Copper Alloy Ni + Sn
Spring / Molla	—	—

Plastic nut / Ghiera plastica	Thermoplastic	Thermoplastic
Flame class rating / Autoestinguenza	UL 94 V0	UL 94 V0

## IN-LINE SHOCKSAFE FUSEHOLDERS PORTAFUSIBILI PROTETTI VOLANTI

PTF/40



PTF/55



PTF/70



PTF/80



PTF/80A



I - II	I - II	I - II
PC2	PC2	PC2
> 4,0 kV	> 4,0 kV	> 4,0 kV
> 6,0 kV	> 6,0 kV	> 6,0 kV
III	III	III
3	3	3
> 10 MΩ	> 10 MΩ	> 10 MΩ
> 100 MΩ	> 100 MΩ	> 100 MΩ
> 1,5 kV	> 1,5 kV	> 1,5 kV
> 3 kV	> 3 kV	> 3 kV

I - II	I - II
PC1	PC1
> 4,0 kV	> 4,0 kV
> 4,0 kV	> 4,0 kV
III	III
3	3
> 10 MΩ	> 10 MΩ
—	—
> 1,5 kV	> 1,5 kV
—	—

Max 0,4 Nm	Max 0,4 Nm	Max 0,4 Nm
Min 0,8 - Max 2,5 mm	Min 0,8 - Max 6,5 mm	Min 0,8 - Max 6,5 mm
Max 1,2 Nm	Max 1,2 Nm	Max 1,2 Nm

Max 0,4 Nm	Max 0,4 Nm
—	—
—	—

Thermoplastic	Thermoplastic	Thermoplastic
UL 94 V0	UL 94 V0	UL 94 V0
Copper Alloy Ni + Sn	Copper Alloy Ni + Sn	Copper Alloy Ni + Sn
Inox	Inox	Inox

—	—
—	—
—	—
—	—

Thermoplastic	Thermoplastic	Thermoplastic
UL 94 V0	UL 94 V0	UL 94 V0
Copper Alloy Ni + Sn	Copper Alloy Ni + Sn	Copper Alloy Ni + Sn
—	Inox	Inox

Thermoplastic	Thermoplastic
UL 94 HB	UL 94 HB
Copper Alloy Ni	Copper Alloy Ni
Inox	Inox

—	Thermoplastic	Thermoplastic
—	UL 94 V0	UL 94 V0

—	—
—	—

## IEC 60335-1 SAFETY OF HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES

This Standard deals with the safety of electrical appliances for household and similar purposes; the rated voltage of the appliances being not more than 250 V for single-phase appliances and 480 V for other appliances.

Recently the Standard has been modified and requirements are reportedly much stricter than those previously used, in order to avoid fire risks and provide further guarantees of safety in electrical appliances.

Such modifications involve, above all, components made of an insulating material that support electrical connections carrying a current > 0.2 A, including components at a distance of less than 3 mm from the connection.

The flowchart for the material and / or part evaluation according to IEC 60335-1 is schematically illustrated in figure.

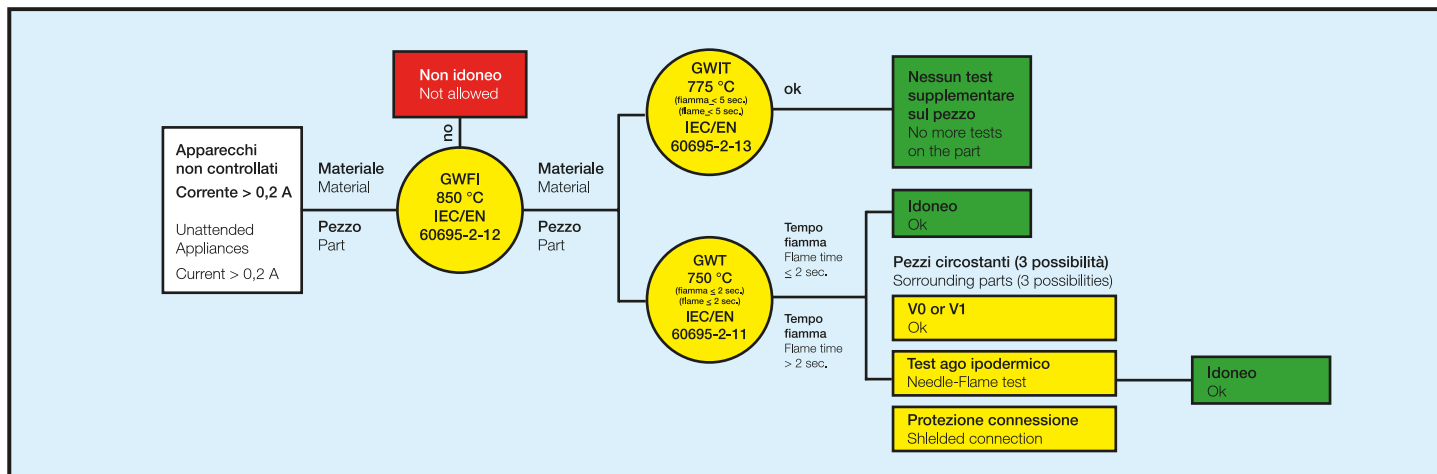
## IEC 60335-1 SICUREZZA DEGLI APPARECCHI ELETTRICI AD USO DOMESTICO E SIMILARE

La Norma tratta le prescrizioni per la sicurezza degli apparecchi elettrici ad uso domestico e similare, con tensione nominale non superiore a 250 Volt per apparecchi monofase e 480 Volt per gli altri apparecchi.

Recentemente la Normativa è stata modificata e resa più esigente per evitare i rischi di incendio e per dare ulteriore garanzia e sicurezza alle apparecchiature elettriche.

Le modifiche riguardano soprattutto le parti in materiale isolante che portano connessioni elettriche con passaggio di corrente > 0,2 A, ivi compreso le parti a meno di 3 mm di distanza dalla connessione.

Il flusso per la valutazione dell'idoneità del materiale e/o pezzo alla IEC 60335-1 è schematizzato in figura.



## PARAGRAPH 30 RESISTANCE TO HEAT AND FIRE

### 30.1 - Heat resistance

The parts must comply with the Ball Pressure Test (IEC 60695-10-2). The test is carried out at a temperature of  $40\text{ °C} \pm 2\text{ °C}$  plus the maximum temperature rise determined during the test of clause 11, but it shall be at least  $75\text{ °C} \pm 2\text{ °C}$  for external components and  $125\text{ °C} \pm 2\text{ °C}$  for components supporting live parts.

### 30.2 - Fire resistance

#### 30.2.2 - Attended Appliances

According to the Standard, parts ought to be subjected to the Glow-Wire Test (IEC 60695-2-11), which is carried out at  $750\text{ °C}$  for connections that carry a current  $> 0.5\text{A}$  and  $650\text{ °C}$  for other connections.

#### 30.2.3 - Unattended Appliances

**30.2.3.1:** Parts that carry a current  $> 0.2\text{A}$  shall have a Glow Wire Flammability Index (GWFI)  $\geq 850\text{ °C}$  (IEC 60695-2-12).

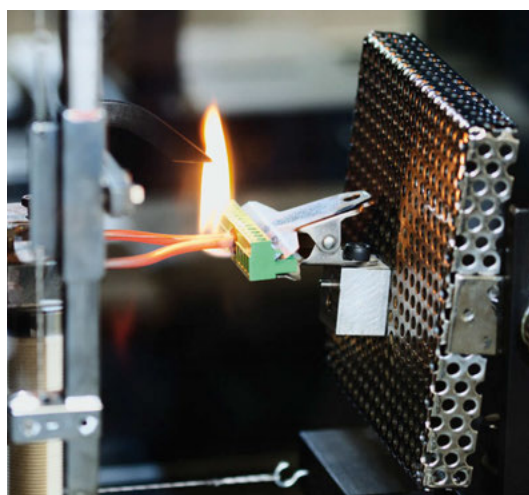
**30.2.3.2:** parts supporting current/carrying connections shall always be subjected to the Glow-Wire Test according to IEC 60695-2-11. However, the GWT is not carried out on parts of material classified as having a Glow-Wire Ignition Temperature (GWTI—according to IEC 60695-2-13) of  $\geq 775\text{ °C}$  for connections that carry a current  $> 0.2\text{A}$ , and  $\geq 675\text{ °C}$  for other connections. Test samples have to be no thicker than the relevant part. The maximum flame-persistence time admitted during the test is of 5 seconds. When the Glow-Wire Test of IEC 60695-2-11 is carried out on the parts, the temperatures are of  $750\text{ °C}$  for connections which carry a current  $> 0.2\text{ A}$  and  $650\text{ °C}$  for lower connections. If during the test a flame that persists for longer than 2 seconds is produced, the Needle-Flame Test must be carried out for all parts above the connection within the envelope of a vertical cylinder having a diameter of 20 mm and a height of 50 mm.

However, the latter test is not needed if between the connections and the other parts there is a «protection» that comply with the Needle-Flame Test.

The Needle-Flame Test is not carried out on parts of material classified as V-0 or V-1 (IEC 60695-11-10), provided that the test sample was no thicker than the relevant part.

Würth Elektronik Stelvio Kontek is able to provide both standard version components and special version components complying with IEC 60335-1, as shown in selection tables of each section.

In your purchase order, if you require the latter type of product, you can simply add “GWT” at the end of the standard code.



## PARAGRAFO 30 RESISTENZA AL CALORE ED AL FUOCO

### 30.1 - Resistenza al calore

I pezzi devono essere idonei al Test della Biglia (IEC 60695-10-2). La prova viene eseguita alla temperatura di  $40\text{ °C} \pm 2$  al di sopra della temperatura massima rilevata sul pezzo durante il test previsto al punto 11, ma deve essere di almeno  $75\text{ °C} \pm 2$  per parti esterne e  $125\text{ °C} \pm 2$  per parti attive.

### 30.2 - Resistenza al fuoco

#### 30.2.2 - Apparecchiature controllate

La norma prevede che i pezzi siano sottoposti al test del Filo Incandescente (IEC 60695-2-11) da farsi a  $750\text{ °C}$  per connessioni con corrente  $> 0,5\text{A}$  e  $650\text{ °C}$  per altre connessioni.

#### 30.2.3 - Apparecchiature non controllate

**30.2.3.1-** I pezzi con passaggio di corrente  $> 0,2\text{A}$  devono avere Glow-Wire Flammability Index (GWFI)  $\geq 850\text{ °C}$  (secondo la IEC 60695-2-12).

**30.2.3.2 -** I pezzi che presentano connessioni elettriche, devono sempre essere sottoposti al Test del Filo Incandescente secondo IEC 60695-2-11, a meno che il materiale sia classificato secondo IEC 60695-2-13 con GWFI Glow-Wire Ignition Temperature (Temperatura di Accensione) di  $\geq 775\text{ °C}$  per connessioni con correnti  $> 0,2\text{A}$  e  $\geq 675\text{ °C}$  per altre connessioni. Le prove devono essere fatte su spessore non superiore a quello del pezzo. Il tempo massimo di persistenza della fiamma ammesso durante la prova è di 5 secondi.

Se viene eseguita la prova del Filo Incandescente sui pezzi, secondo la IEC 60695-2-11, la temperatura deve essere di  $750\text{ °C}$  per connessioni con corrente  $> 0,2\text{A}$  e  $650\text{ °C}$  per altre connessioni con correnti inferiori.

Nel caso in cui durante la prova si sviluppi una fiamma per un tempo  $> 2$  secondi, deve essere eseguita la prova Fiamma con Ago Ipodermico (Needle Flame Test) per tutti i pezzi circostanti che si trovano sopra la connessione elettrica all'interno di un ipotetico cilindro verticale, avente diametro di 20 mm ed una altezza di 50 mm.

Quest'ultimo test non è necessario se tra le connessioni e gli altri pezzi esiste una protezione che supera il Test dell' Ago Ipodermico. Non è necessario fare il Test dell'Ago per pezzi realizzati con materiale classificato V-0 o V-1 (IEC 60695-11-10) per spessori non superiori a quelli del pezzo. Come indicato nelle tabelle di selezione di ogni singolo capitolo Würth Elektronik Stelvio Kontek è in grado di fornire componenti in versione standard oppure in versione speciale conformi alla IEC 60335-1: per ordinare questi prodotti occorre semplicemente aggiungere al codice standard la dicitura GWT.

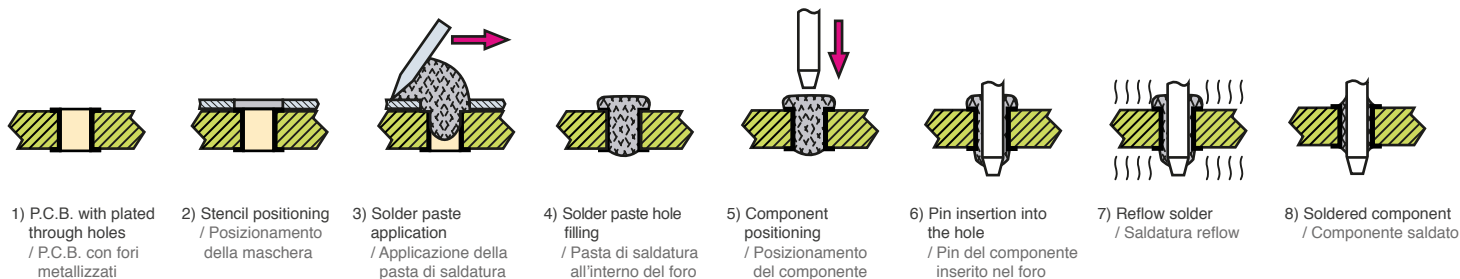
# THR - THROUGH HOLE REFLOW

Mechanically stressed components such as terminal blocks and connectors require a good retention to the PC board. In order to obtain the same efficiency in production of SMT process (Surface Mount Technology) and mechanical resistance typical of THT process (Through Hole Technology), these two technologies can be integrated in one process named THR (Through Hole Reflow).

This process or method is also known as a PIP (Pin In Paste) and differently from SMT traditional components, the pins of connectors, terminal blocks and fuse-holders are inserted into P.C.B. plated through holes previously filled with soldering paste and then soldered with Reflow technology as described on the following pictures.

Componenti quali morsetti e connettori, essendo sottoposti a sforzi meccanici durante l'utilizzo, richiedono una buona tenuta meccanica alla scheda elettronica. Per garantire sia l'efficienza produttiva tipica della tecnologia SMT (Surface Mount Technology) che la resistenza meccanica data dalla tecnologia THT (Through Hole Technology), i due metodi possono essere integrati in un unico processo denominato THR (Through Hole Reflow).

Questo processo viene anche denominato PIP (Pin In Paste) e a differenza dei componenti SMT tradizionali, i pin dei connettori, morsetti e portafusibili vengono inseriti nei fori metallizzati del circuito stampato preventivamente riempiti con la pasta saldante e successivamente saldati con tecnologia Reflow come descritto nello schema seguente.



## PCB CHARACTERISTICS

- 1) Plated through holes;
- 2) Holes diameter: depends on pin dimension and on the accuracy of component deployment;
- 3) Soldering pad: depend on the pin dimension, paste quantity and stencil layout;
- 4) Volume of soldering paste can be calculated as follow:

## CARATTERISTICHE DEL CS

- 1) Fori metallizzati;
- 2) Diametro del foro: dipende dalle dimensioni del pin e dalla precisione del posizionamento del componente;
- 3) Diametro piazzola: dipende dalla dimensione del terminale, dalla quantità di pasta saldante e dalla maschera;
- 4) Il volume della pasta saldante può essere calcolato come segue:

$$V_h = \left[ \frac{\pi d_h^2 \cdot S}{4} \right]$$

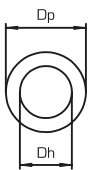
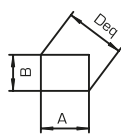
$$V_n = V_h - V_p$$

$$\text{Paste volume / Volume pasta} = V_n \cdot K$$

- $V_h$  = Hole volume / Volume foro  
 $V_n$  = Net volume / Volume netto  
 $V_p$  = Soldering pin volume / Volume del pin  
 $S$  = PCB thickness / Spessore del CS  
 $d_h$  = PCB hole diameter / Diametro foro su CS  
 $K$  = Evaporation factor (equal to 2 with paste estimated bleeding of 50%) / Fattore di evaporazione (uguale a 2 considerando un fattore di evaporazione della pasta saldante pari al 50%)



Approximate value are shown on following drawing and table / Valori indicativi sono specificati nei disegni e tabelle seguenti:

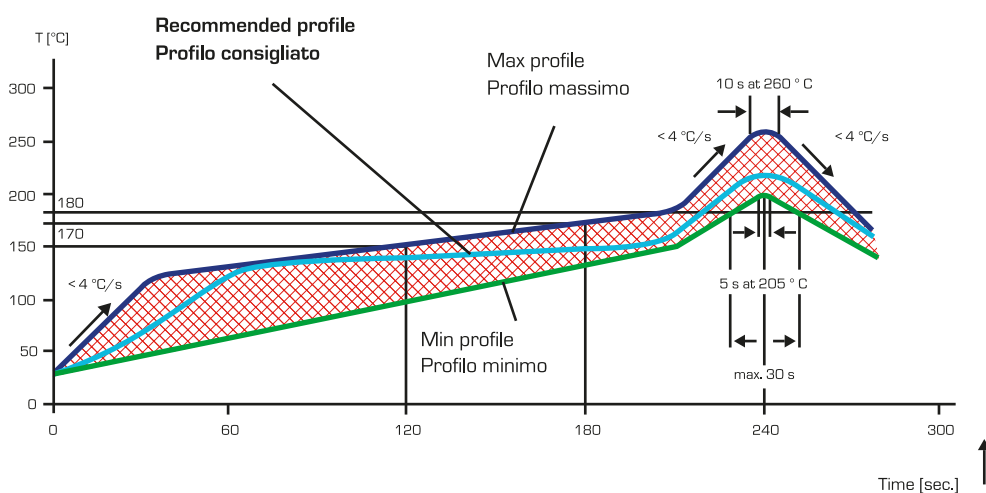
P.C.B. Holes Foratura P.C.B	Pin Dimensions Dimensioni Pin	Dimensions Dimensioni	Product Componente	PIN dimensions Dimensioni PIN	Equivalent diameter Deq Diametro equivalente Deq	Hole diameter Dh Diametro foro Dh	Pad diameter Diametro piazzola	Stencil hole Foro lastra
		$Deq = \sqrt{A^2 + B^2}$ $Dh = Deq + 0,25 \text{ mm}$ $Dp = Dh + 0,6 \text{ mm}$	PTF/15	1,20 x 0,40	1,25	1,50	2,10	2,20
			PTF/18 THR PTF/18 THR (LCP)	1,10 x 0,40	1,20	1,45	2,05	2,15
			PTF/75	1,20 x 0,50	1,30	1,55	2,15	2,25
			PTF/76	1,20 x 0,50	1,30	1,55	2,15	2,25
			PTF/77	1,20 x 0,50	1,30	1,55	2,15	2,25
			PTF/78	1,20 x 0,50	1,30	1,55	2,15	2,25

## TEMPERATURE REQUIREMENTS

Recommended temperature profiles are specified in JEDEC J-STD-020D.

## PROFILI DI SALDATURA

I profili di saldatura consigliati per i componenti THR sono specificati dalle norme JEDEC J-STD-020D.

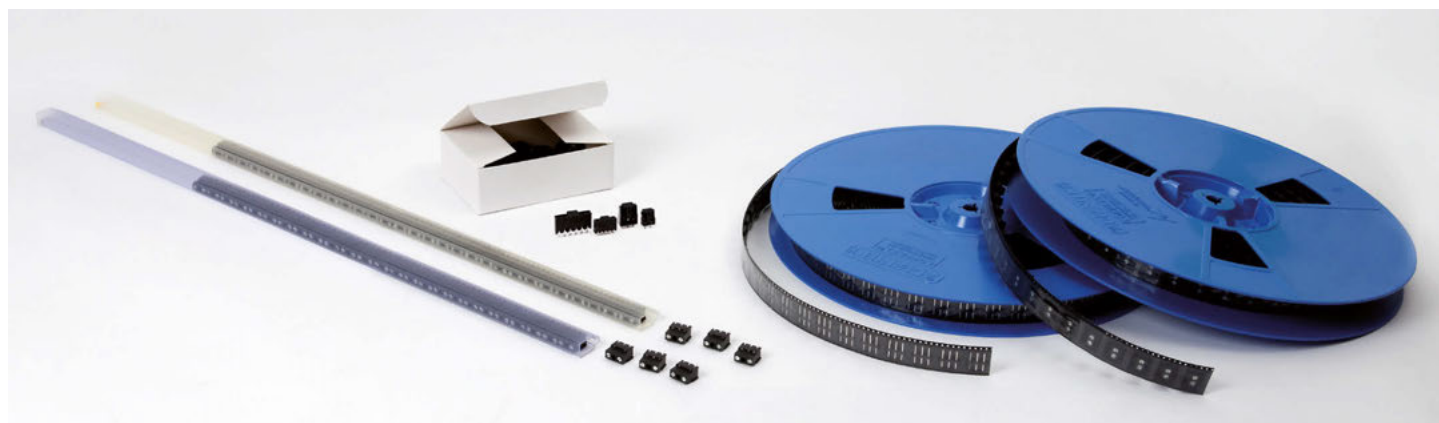


## PACKAGING

THR components are also compatible with automated mounting systems (Pick and Place) thanks to packaging solutions such as Tube or Tape-and-Reel. For any requirements on THR components contact us.

## IMBALLO

I componenti THR sono compatibili con sistemi di montaggio automatico (Pick and Place) grazie a differenti soluzioni di imballo quali il Tube ed il Tape-and-Reel. Per ogni ulteriore informazione contattateci



# CERTIFICATIONS & HOMOLOGATIONS

## / QUALITÀ E CERTIFICAZIONI



### INTERNATIONAL STANDARDS



### EUROPEAN DIRECTIVES



For us at Würth Elektronik Stelvio Kontek, quality is a concrete result rather than a merely formal value. Our ranges comply with European Directives in safeguarding environment (RoHS, WEEE, PFOS, REACH, etc.).

The Oggiono plant is ISO 9001 certified since 1995; the Romanian plant since 2012.

Per noi di Würth Elektronik Stelvio Kontek la qualità è un risultato concreto piuttosto che un mero valore formale. Le nostre linee di prodotto sono approvate dai più importanti istituti nazionali e internazionali (IMQ, UL, VDE) e rispettano tutte le direttive europee in tema di sicurezza (RoHS, WEEE, PFOS, REACH, etc.).

Lo stabilimento di Oggiono è certificato ISO 9001 dal 1995; lo stabilimento sito in Romania dal 2012.





N° 2000/14460.5

AFNOR Certification certifies that the management system implemented by:  
 AFNOR Certification certifie que le système de management mis en place par :

**WUERTH ELEKTRONIK STELVIO KONTEK S.p.A**

for the following activities:  
 pour les activités suivantes :

**PROGETTAZIONE, SVILUPPO, PRODUZIONE E COMMERCIALIZZAZIONE DI COMPONENTI ELETTROMECCANICI PER L'ELETTRONICA DI CONSUMO ED INDUSTRIALE.**

**DESIGN, DEVELOPMENT, PRODUCTION, MARKETING AND SALE OF ELECTROMECHANICAL COMPONENTS FOR CONSUMER AND INDUSTRIAL ELECTRONICS.**

**CONCEPTION, DEVELOPPEMENT, PRODUCTION ET COMMERCIALISATION DE COMPOSANTS ELECTROMECHANIQUES POUR L'ELECTRONIQUE GRAND PUBLIC ET INDUSTRIELLE.**

has been assessed and found to meet the requirements of:  
 a été évalué et jugé conforme aux exigences requises par :

**ISO 14001 : 2004**

and is developed on the following locations:  
 et est déployé sur les sites suivants :

**VIA AL MOGNAGO 49 - 23848 OGGIONO (LC) - ITALIA**

This certificate is valid from (year/month/day)  
 Ce certificat est valable à compter du (année/mois/jour)

**2016-02-14**

until  
 Jusqu'au

**2018-09-14**

Managing Director of AFNOR Certification  
 Directeur Général d'AFNOR Certification

*[Signature]*  
**F. LEBEUGLE**

The electronic certificate only, available at [www.afnor.org](http://www.afnor.org), shows no reference to the company or certified. Once a certified product is purchased, it is possible to verify the certificate on the AFNOR website. AFNOR Certification is not responsible for the use of the certificate. AFNOR Certification is not responsible for the use of the certificate. AFNOR Certification is not responsible for the use of the certificate.

# PHILOSOPHY & VALUES

## / FILOSOFIA E VALORI

### Responsibility with a big R

#### Focus on the Human foremost

We at Würth Elektronik Stelvio Kontek truly believe that corporate culture cannot endure without partnership and trust, either towards collaborators or partners and customers. Hence we take great care in optimizing our communication channels and define common win-win objectives. After all, best ideas necessarily come from individual.

### Responsabilità con la R maiuscola

#### Attenzione alle persone. Prima di tutto

Noi di Würth Elektronik Stelvio Kontek crediamo sinceramente che una filosofia aziendale solida non possa vivere senza fiducia e rispetto, sia nei confronti dei collaboratori sia dei partner e clienti. Per questo motivo mettiamo grande attenzione e cura nell'ottimizzare i nostri canali di comunicazione e definire nuove strategie vincenti. Dopo tutto, le migliori idee nascono sempre da individui.

### Eco-responsibility

#### An investment on our future

For us environmental responsibility doesn't only mean being green. It has to be a real and true doctrine flowing through all capillaries of our organization. Thus, thanks to its Environmental Management System with ISO 14001 certification and its strong spirit of innovation, the group makes its own contribution to defending the environment as one of its top priorities through sustainable development: industrial wastewater is conditioned, air is protected with "end of pipe scrubbers", chemical substances are stocked in "double-jacket" tanks and the natural resources consumption is carefully monitored.

### Eco-responsabilità

#### Un investimento nel nostro futuro

Per noi la responsabilità nei confronti del Pianeta non significa solamente essere "green". È dovuta diventare una vera e propria convinzione attraverso tutte le componenti della nostra organizzazione. Grazie al nostro Sistema di Gestione Ambientale con certificazione ISO 14001, contribuiamo allo sviluppo sostenibile: le acque reflue sono depurate, l'aria è purificata attraverso depuratori, le sostanze chimiche sono immagazzinate in serbatoi a doppio strato e il consumo di risorse naturali è attentamente monitorato.





## Global Compact

### A human face to the global market

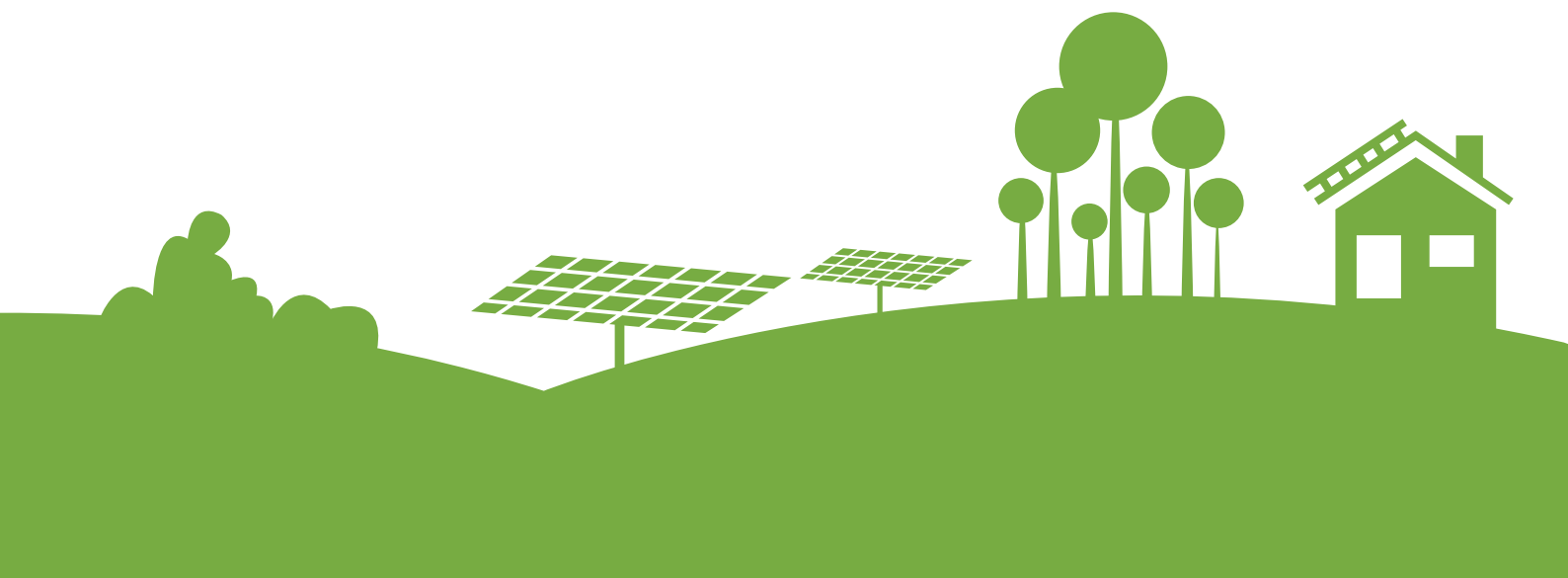
The United Nations Global Compact is a call to companies everywhere to voluntarily align their operations and strategies with ten universally-accepted principles in the areas of human rights, labour, environment and anti-corruption, and to take action in support of UN goals, including the Millennium Development Goals.

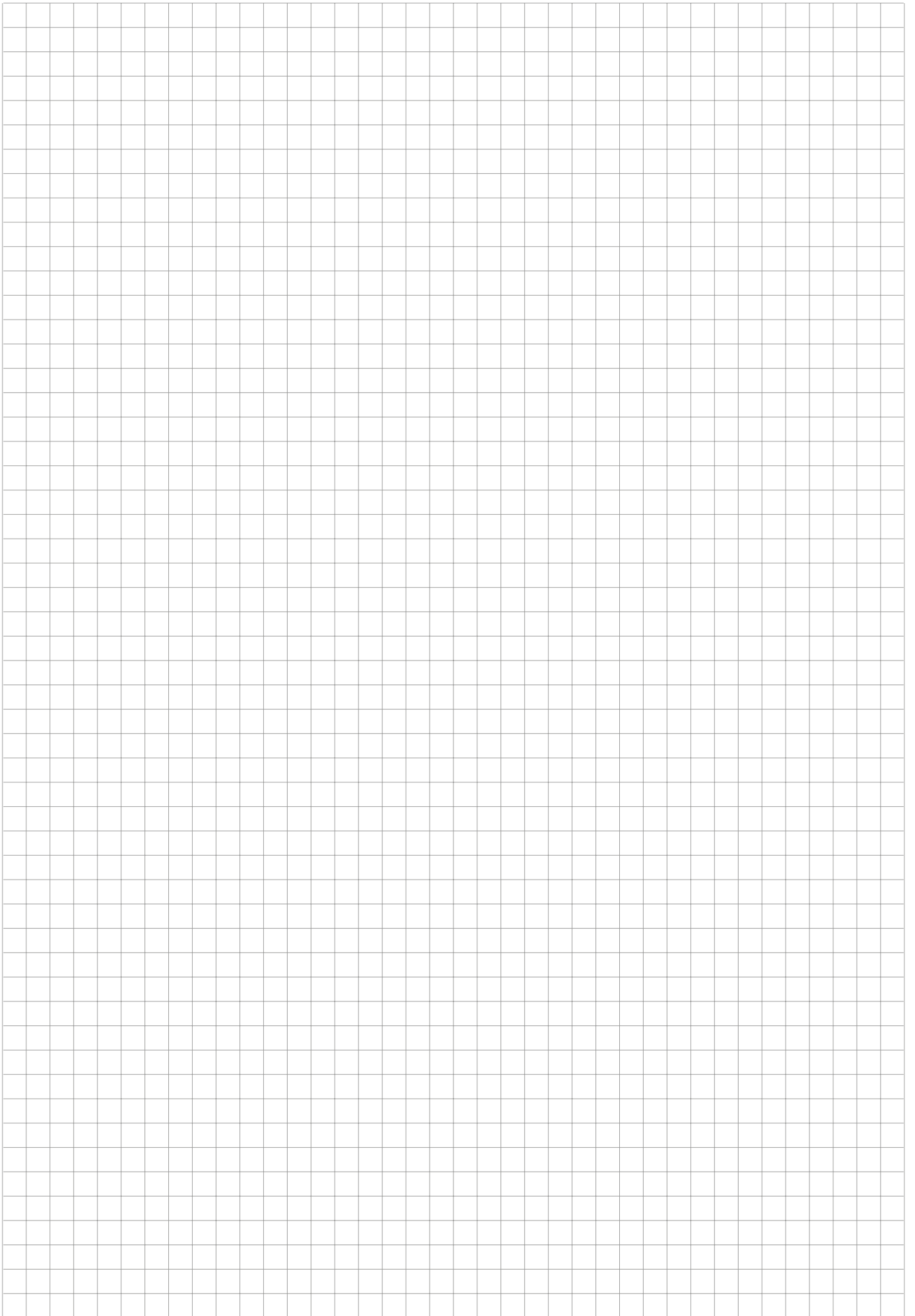
Würth Elektronik Stelvio Kontek agrees on and takes part in the UN Global Compact platform for the development, implementation, and disclosure of responsible corporate policies and practices. Launched in 2000, it is the largest corporate responsibility initiative in the world, with over 10,000 signatories based in 140 countries.

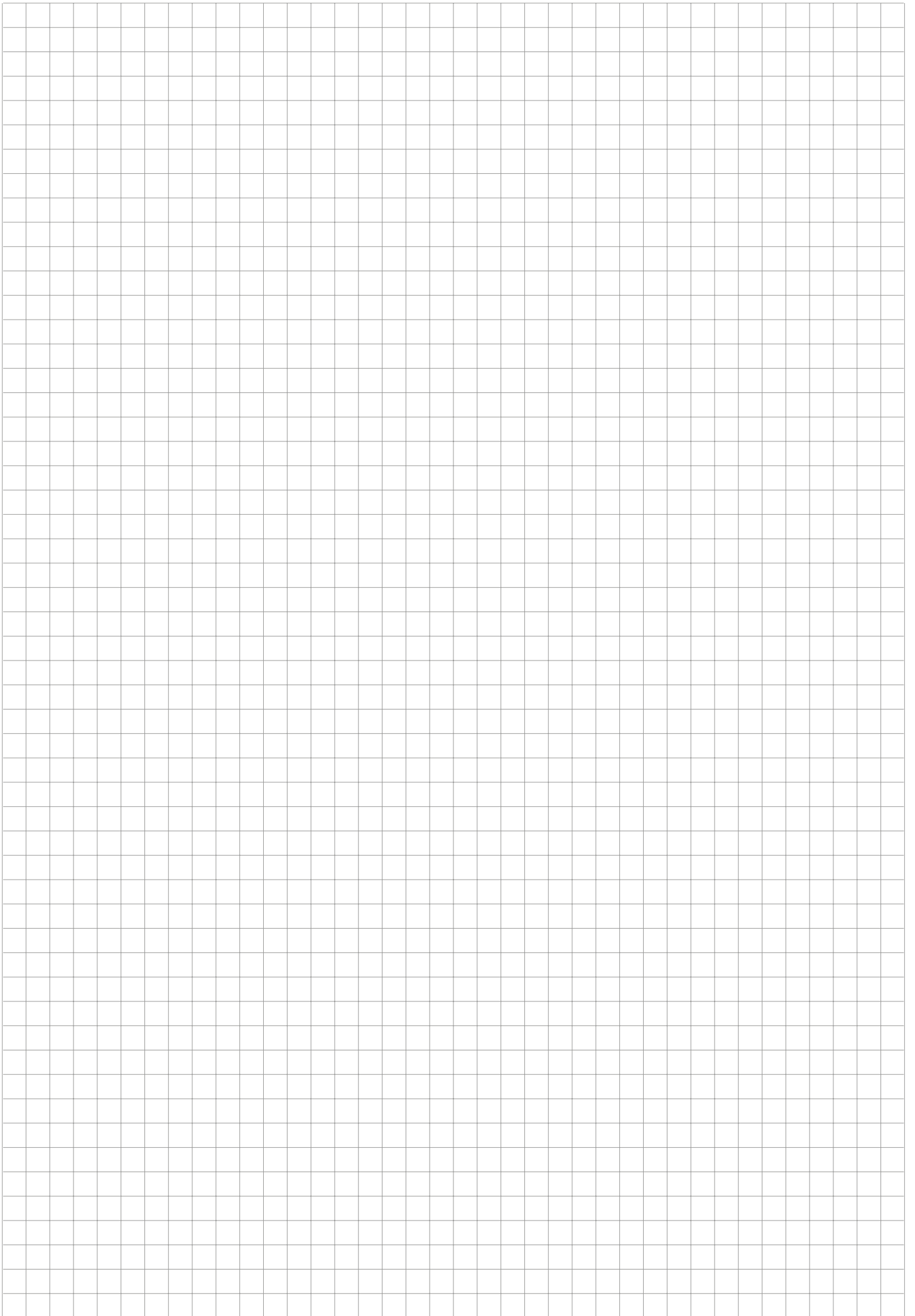
## Global Compact

### Un volto umano al mercato globale

Lo United Nations Global Compact è un invito e una chiamata a tutte le aziende che intendano allineare volontariamente le loro operazioni a dieci principi base universalmente accettati riguardo i diritti umani, il lavoro, l'ambiente e la lotta alla corruzione. Würth Elektronik Stelvio Kontek abbraccia e prende parte allo UN Global Compact per lo sviluppo, l'implementazione e la divulgazione di politiche e pratiche aziendali responsabili. Lanciato nel 2000, è la più grande iniziativa di responsabilità aziendale nel mondo, con oltre 10.000 firmatari in oltre 140 Paesi.







# Stay Connected With Us



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watch the video

Discover the complete line of Würth Elektronik Stelvio Kontek's products.

