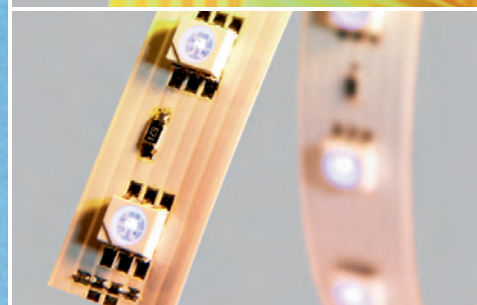
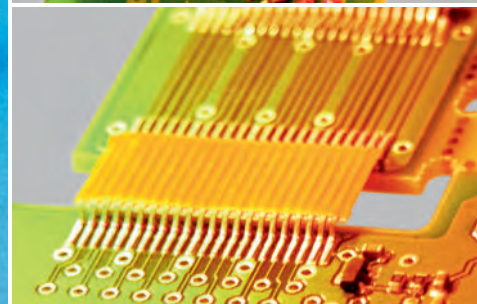
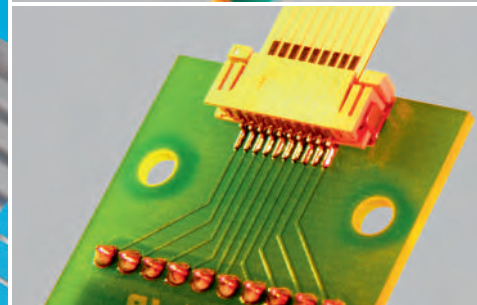
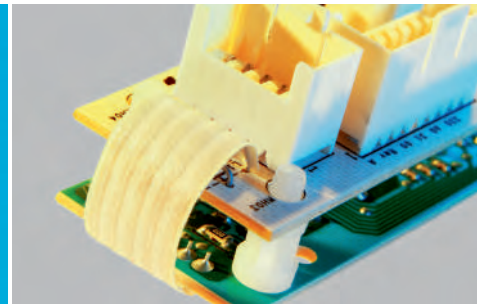
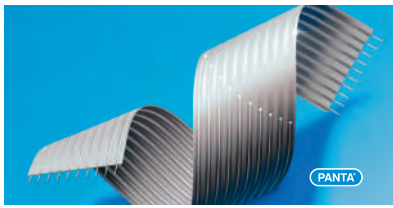
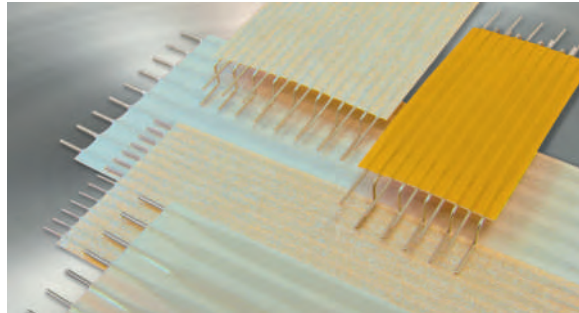


PANTA®





## PANTA FIX JUMPER



### TECHNOLOGY

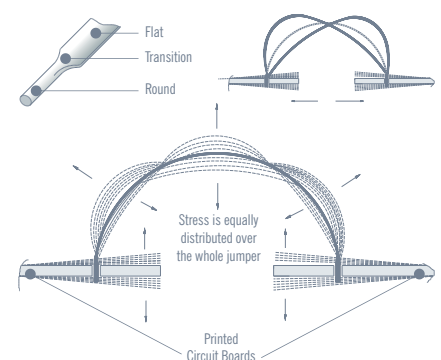
PANTA FIX JUMPERS are highly flexible flat conductor connectors. Solid round conductors ensure fast and safe assembly. The PANTA round-flat-round technology combines both: The copper conductors are rolled flat to a defined geometry in the insulating area. Ensuring the highest standards of vibration and bending resistance. The smooth notch-free transition from round to flat guarantees fracture-safe connection points.

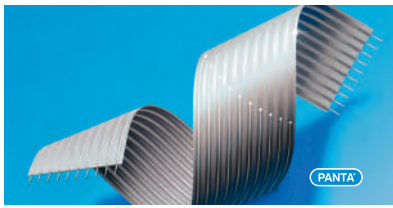
### BENEFITS

- ▶ High vibration and bending resistance
- ▶ Reliable and fracture-safe connection
- ▶ Very easy handling
- ▶ Immediately ready for installation
- ▶ Economizes working time and assembly costs
- ▶ Minimum space required
- ▶ High productivity by simultaneous soldering of all connection points in the solder bath
- ▶ Wiring errors are avoided
- ▶ Choice of various termination styles
- ▶ Allows combination with male connectors
- ▶ High-quality insulation materials (-40°C to +125 °C)
- ▶ Different pitches within one jumper available (MIX)
- ▶ Short insulation lengths also available as wire jumpers (without the flat rolled copper conductor end)

### CHARACTERISTICS

- ▶ High vibration and bending resistance
- ▶ Smooth notch-free transition from flat to round
- ▶ Fracture-safe connection point
- ▶ Compensation of intrinsic vibrations
- ▶ Avoidance of vibration resonances



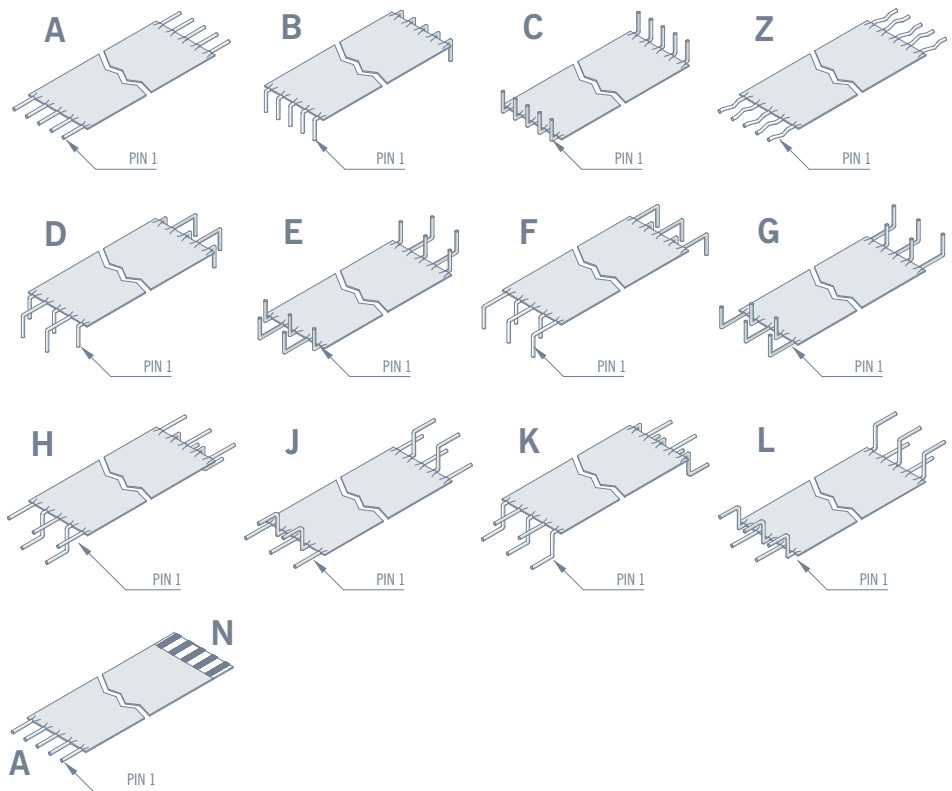


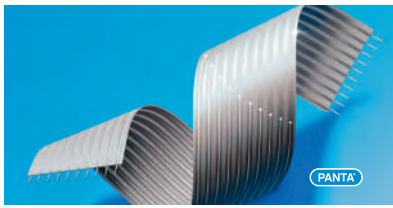
# PANTA FIX JUMPER

## ORDER CODE

Pitch e.g. A=2.54 mm See pitch code	Insulation material e.g. P = Polyester N = Nomex E = PEN K = Polyimide	Termination style e.g. A = identical ends AN = different (see chart, combinations on request)
<b>A 05</b>	<b>- N 051</b>	<b>- A -</b> <input type="checkbox"/>
	Number of pins	Insulation length from 15-999 mm Special lengths on request
		Special designs on request, drawing required

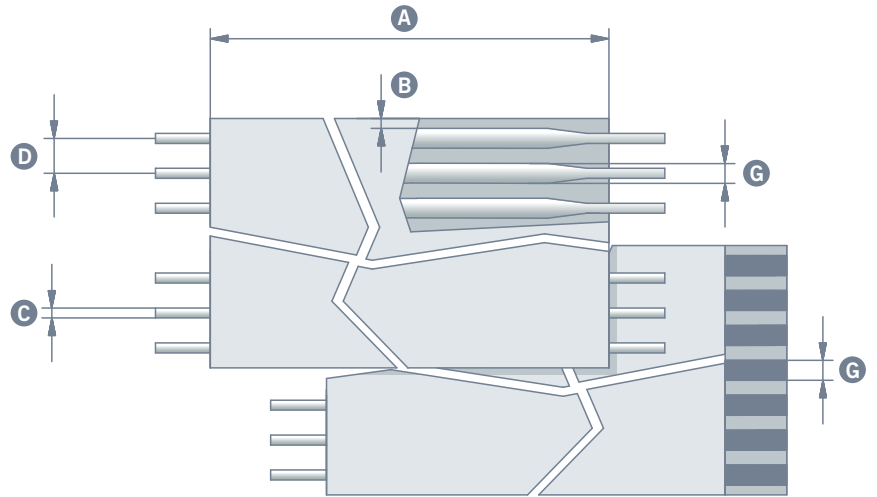
## TERMINATION STYLES





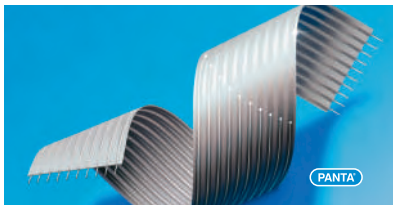
# PANTA FIX JUMPER

## TECHNICAL DATA

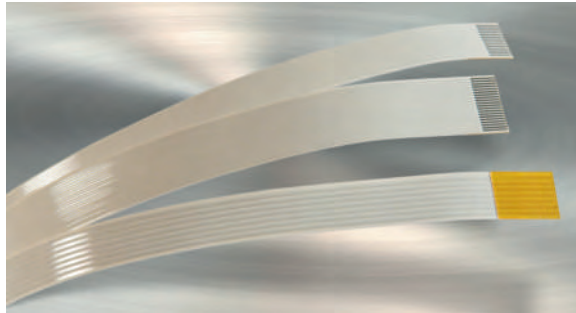


Order code		U	E	G	B	L	D	F	A	Z	P	R	C
<b>D</b> Pitch	mm	0.8	1.00	1.25	1.27	1.90	2.00	2.50	2.54	3.18	3.5	3.81	5.08
Max. number of pins		32	32	32	32	32	32	32	32	25	23	20	16
<b>A</b> Length	mm	15-999											
<b>B</b> Min. margin	mm	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.5	0.5
<b>C</b> Pin diameter	mm	0.254	0.32	0.32	0.32	0.40	0.40	0.51	0.51	0.51	0.51	0.51	0.51
American Wire Gauge	AWG	30	28	28	28	26	26	24	24	24	24	24	24
<b>G</b> Flat conductor width	mm	0.5	0.7	0.75	0.75	1.35	1.35	1.5	1.5	1.5	1.5	1.5	1.5
Flat conductor thickness	$\mu\text{m}$	90	90	100	100	110	110	120	120	120	120	120	120
Conductor material		Cu acc. to DIN 40500; min. 1.5 $\mu\text{m}$ tin-plated						2-3 $\mu\text{m}$ matt tin-plated					
Current rating at 20°C	A	0.5	1.0	1.5	1.5	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.5
Voltage rating	V <sub>DC</sub>	80	200	200	200	200	200	300	300	300	300	300	300
Dielectric strength	V <sub>DC</sub> /min	200	700	1100	1100	1500	1500	1500	1500	1500	1500	1500	1500

Insulation		Polyester	Nomex	PEN	Polyimide
With Pitch	mm	2,54			
American Wire Gauge	AWG	24			
Insulation resistance (grd-sig-grd)	$\Omega$	>10 <sup>10</sup>			
Operating temperature	°C	-40 ... +105	-40 ... +125	-40 ... +125	-40 ... +125
Soldering temperature	°C/sec	250/4	260/5	260/5	260/5



# PANTA ZIF JUMPER

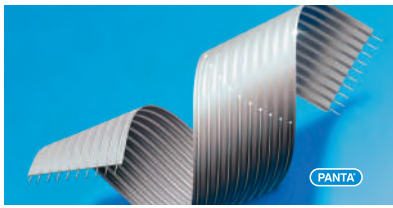


## PRODUCT DESCRIPTION

- ▶ PANTA ZIF JUMPERS are used for connecting printed circuit boards (PCBs)
- ▶ Combinable with ZIF (Zero Insertion Force) or LIF (Low Insertion Force) connectors
- ▶ Defined stripping of insulation and application of stiffener in the contact area provides secure connection to all conventional plugs (e.g. FCI, Molex or Tyco)
- ▶ Minimum dimensions through thin foils and small pitches
- ▶ Fast assembly by simple insertion
- ▶ High flexibility and bending resistance
- ▶ Special versions available, e.g. LIF/ZIF pins can be combined with round solder pins (PANTA FIX) or SMD solderable flat conductors (PANTA FLL)

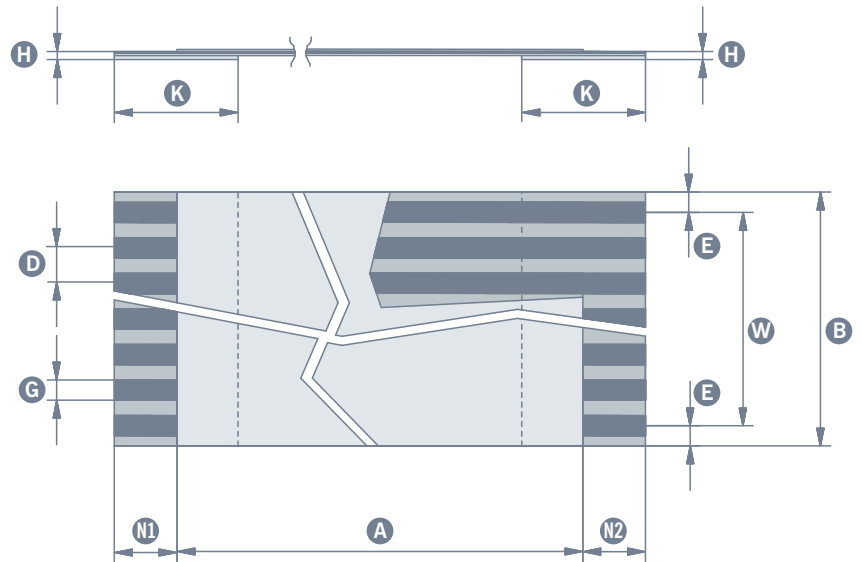
## ORDER CODE

	Pitch e.g. E=1.00 mm See pitch code	Insulation material e.g. P = Polyester E = PEN K = Polyimide	Termination style e.g. N = identical ends NW = different
<b>ZIF - E 10 - P 100 - N - <input type="checkbox"/></b>	Number of pins	Insulation length from 15-999 mm Special lengths on request	Special designs on request, drawing required



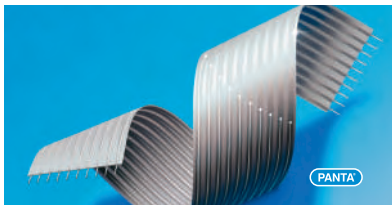
# PANTA ZIF JUMPER

## TECHNICAL DATA

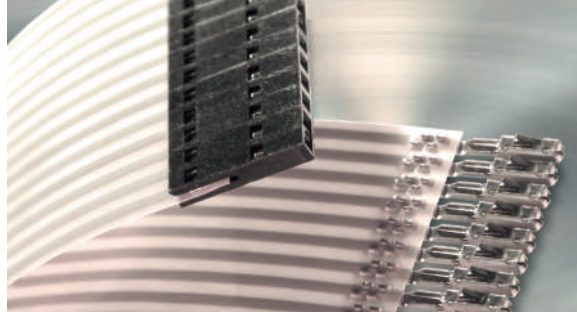


Order code		I	E	G	A
<b>D</b> Pitch	mm	0.5	1.00	1.25	2.54
Max. number of pins	N	50	30	26	24
<b>A</b> Insulation length	mm	20-999			
<b>E</b> Margin	mm	0.35	0.65	0.85	1.04
<b>N</b> Length of stripped insulation Nominal size (standard)	mm	3-5 (4)		3-5 (5)	
<b>K</b> Length of reinforcement Nominal size (standard)	mm	6-10 (8)		6-10 (10)	
Conductor material	μm	Tin-plated Cu			
<b>G</b> Wire material*	mm	0.30 x 0.10	0.70 x 0.10	0.80 x 0.10	1.50 x 0.10
Insulation	μm	Polyester, PEN, Polyimide			
Reinforcing insulation	mm	Polyester			
<b>B</b> Total width	mm	(number of pins + 1) x pitch			
<b>W</b> Pitch width	mm	(number of pins - 1) x pitch			
<b>H</b> Total thickness of contact area	mm	0,3			
Insulation resistance (grd-sig-grd)	Ω	>10 <sup>10</sup>			
Current rating at 20°C	A	0.5	1.0	1.5	3.0
Voltage rating	V <sub>DC</sub>	30	200	200	300
Operating temperature	°C	-40 bis +105			

\* customer specials on request



# PANTA FIX CRIMP

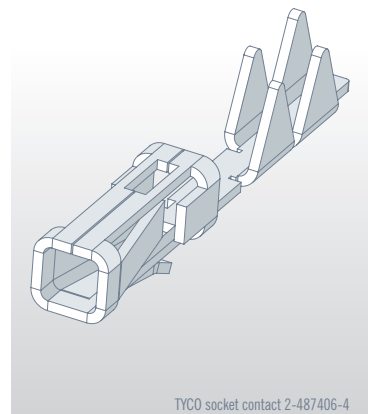


## PRODUCT DESCRIPTION

- ▶ Economical assembly of foil crimp contacts from different manufacturers (e.g. Tyco, Nicomatic) with PANTA FIX JUMPER or PANTA FLEX cables
- ▶ Available pitches: 1.27 and 2.54 mm
- ▶ Secure connection (e.g. housings with locking mechanism and anti-twist safeguard)
- ▶ Disconnectable space-saving connection
- ▶ The contacts are available in different versions:
  - Socket contact
  - Pin contact
  - Solder pin
- ▶ Available with tin- or gold-plated surfaces. All crimp assemblies are special designs.

## CHARACTERISTICS

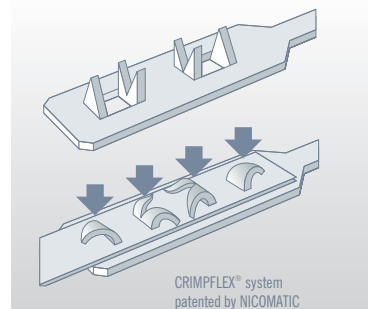
- ▶ **PANTA Crimp with TYCO contacts**
  - **TYCO pin contacts**
    - 88117-x (gold-plated or tin-plated) on request
    - 88976-x (gold-plated or tin-plated) on request
  - **TYCO socket contacts**
    - 2-487406-4 (tin-plated) PREFERRED TYPE
    - 487406-X (gold-plated or tin-plated) on request
  - **TYCO solder pin**
    - 88997-2 (tin-plated) on request



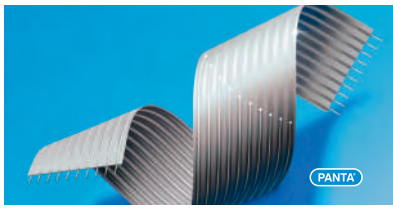
**Diverse HOUSINGS are available on request.**

### PANTA Crimp with Nicomatic contacts

- **Nicomatic socket contacts series 14106**
  - 14106-12 (tin-plated) PREFERRED TYPE
  - 14106-3210 (partially gold-plated) on request
- **Nicomatic pin contacts 0.635mm. Rectangular terminal series 12410**
  - 12410-12 (tin-plated) PREFERRED TYPE
  - 12410-32 (partially gold-plated) on request
  - Diverse housings available



**We will be pleased to advise you.**



# PANTA FIX CRIMP

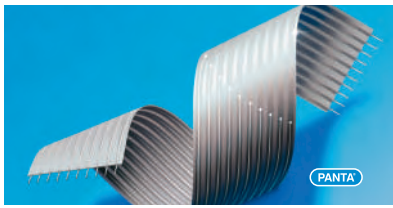
## ORDER CODE

Pitch e.g. A=2.54 mm See pitch code	Insulation material e.g. P = Polyester N = Nomex E = PEN K = Polyimide	Special Drawing required
<b>CRP - A 05 - P 051 - 001</b>		
Number of pins	Insulation length from 15-999 mm Special lengths on request	

## TECHNICAL DATA

Order code	B	A			
Pitch	mm	1.27	2.54		
Compatible crimp contacts		Tyco	Tyco	Tyco MQS	Nicomatic
Preferred type		1-487547-1 (gold-plated)	2-487406-4 (tin-plated)	929387-1 (tin-plated)	14106-12 (tin-plated)
Max. number of pins		32	20	32	32
Length	mm	12 - 999 in steps of 1; special length up to 5000			
Min. margin	mm	0,8			
Pin diameter	mm	0.32	0.40	0.40	0.51
American Wire Gauge	AWG	28	26	26	24
Flat conductor width	mm	0.75	1.35	1.35	1.5
Flat conductor thickness	μm	100	110	110	120
Conductor material	μm	Cu acc. to DIN 40500; tin-plated, 2μm		Cu acc. to DIN 40500; tin-plated, 3μm	
Current rating at 20°C	A	0.5	2.0	2.0	3.0
Voltage rating	V <sub>DC</sub>	80	300		
Dielectric strength	V <sub>DC</sub> /min	200	1500		





## PANTA FIX POWER

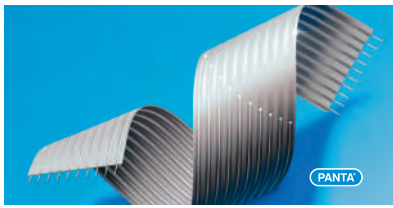


### PRODUCT DESCRIPTION

- ▶ High vibration and bending resistance
- ▶ Reliable and fracture-safe connection
- ▶ Immediately ready for installation
- ▶ Economizes working time and assembly costs
- ▶ High productivity by simultaneous soldering of all connection points in the solder bath
- ▶ Up to 12 amperes

### CHARACTERISTICS

- ▶ PANTA FIX POWER assembled with PANCON connectors
- ▶ MASCON series, Type CEH
  - Pitch 3.96 mm, high power
  - Number of pins: 2-8
  - IDC termination (insulation displacement contact)
  - Wire gauge AWG 19
  - Solid wires
  - Built-in polarization
  - Coding with coding pin
  - Current rating 12.0 A
  - Operating voltage acc. to VDE 0110-1/04.97
  - Operating temperature -55°C to 105°C
- ▶ MASCON series, Type CEP (terminating connector)
  - Pitch 2.54mm
  - Number of pins: 2-8
  - IDC termination (insulation displacement contact)
  - Wire gauge AWG 21
  - Solid wires
  - Coding with coding pin
  - Current rating 8A
  - Operating voltage acc. to VDE 0110-1/04.97
  - Operating temperature -55°C to 105°C

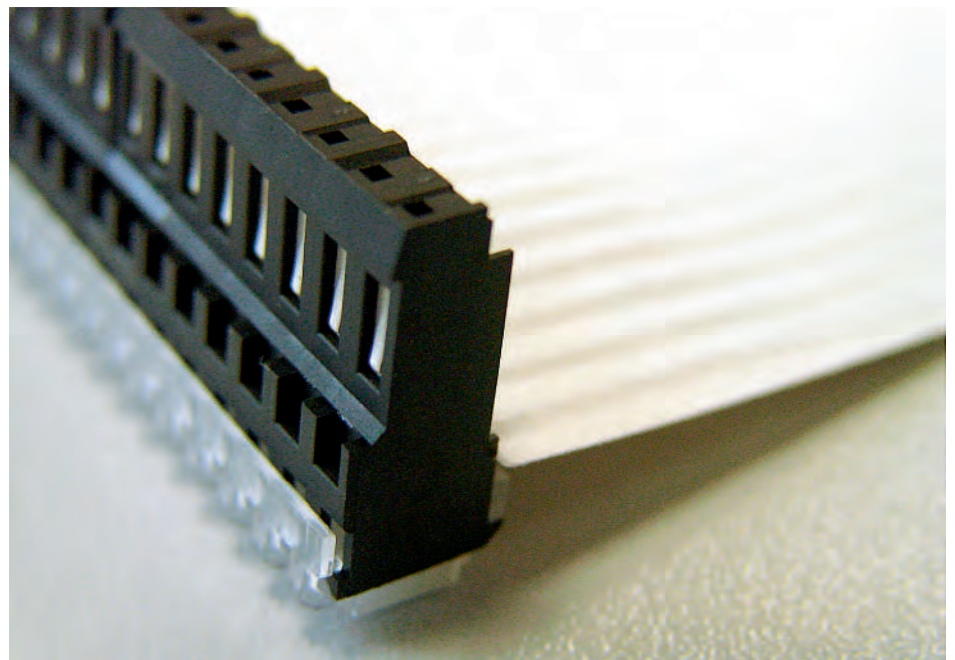
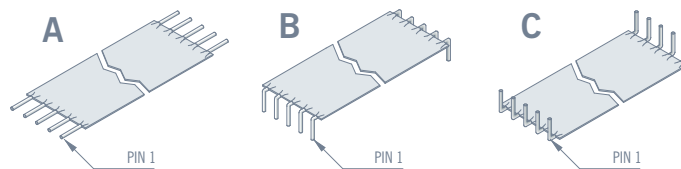


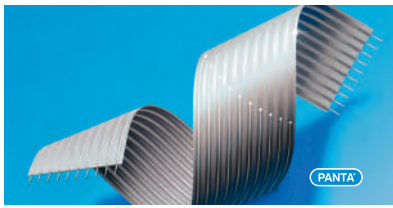
# PANTA FIX POWER

## ORDER CODE

Pitch e.g. A=2.54 mm See pitch code	Insulation material e.g. P = Polyester N = Nomex E = PEN K = Polyimide	Termination style e.g. A = identical ends AB = different (see chart)
<b>05</b>	<b>N</b>	<b>051 - A - 001</b>
<b>POW-A</b>	<b>051</b>	<b>001</b>
	Number of pins	Insulation length from 15-999 mm Special lengths on request
		Special designs on request, drawing required

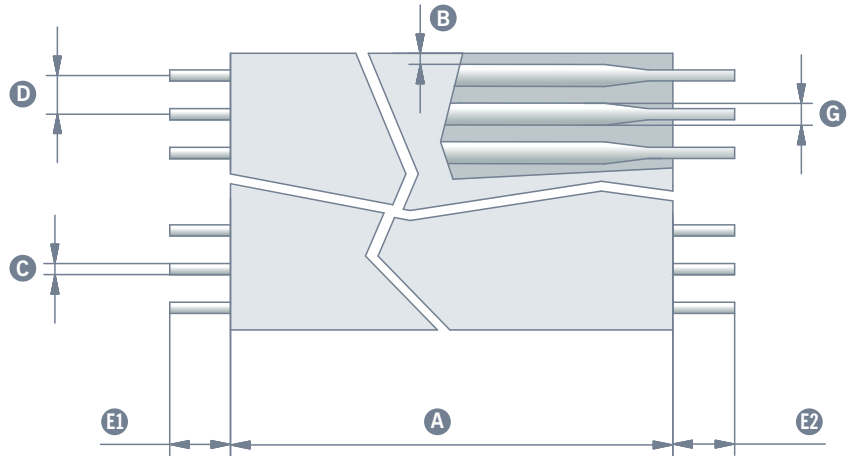
## TERMINATION STYLES





# PANTA FIX POWER

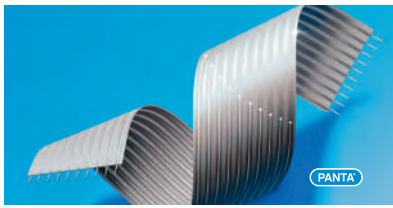
## TECHNICAL DATA



### PANTA FIX POWER JUMPER

Order code		F	A	P	N	M	C	K	J
<b>D</b> Pitch	mm	2.5	2.54	3.5	3.96	5.0	5.08	7.0	7.5
Max. number of pins		8	8	8	8	8	8	8	8
<b>A</b> Length	mm	25-999 in 0.1 steps; special lengths up to 5000							
<b>B</b> Max. margin	mm	selectable up to 10							
<b>B</b> Min. margin	mm	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
<b>C</b> Pin diameter	mm	0.72	0.72	0.91	0.91	0.91	0.91	0.91	0.91
American Wire Gauge	AWG	21	21	19	19	18	18	18	18
<b>G</b> Flat conductor width	mm	2.0	2.0	3.2	3.2	3.2	3.2	3.2	3.2
Flat conductor thickness	$\mu\text{m}$	200							
Conductor material		2-3 $\mu\text{m}$ matt tin-plated							
Current rating at 20°C	A	8	8	12	12	12	12	12	12
Voltage rating	$V_{DC}$	300							
Dielectric strength	$V_{DC}/\text{min}$	1500							





# PANTA FIX POWER

## TECHNICAL DATA

PANTA FIX POWER SYSTEM  
with insulation displacement connector (IDC)

### The POWER Jumper

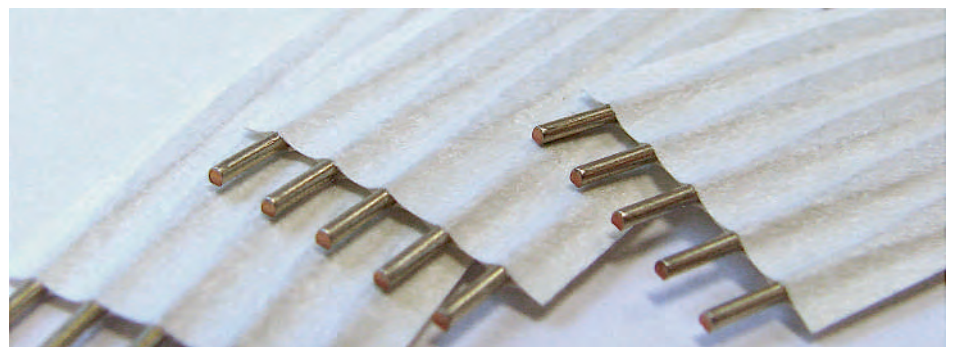
<b>D</b> Pitch	mm	2,54	3,96
Max. number of pins		2-8	2-8
<b>A</b> Length	mm	25 - 999	
<b>E</b> Pin length	mm	2,5 - 10	
Termination styles		A, B or C	
<b>B</b> Min. margin	mm	1,0	1,0
<b>C</b> Pin diameter	mm	0,72	0,912
American Wire Gauge	AWG	21	19
<b>G</b> Flat conductor width	mm	3,2	
Flat conductor thickness	$\mu\text{m}$	200	
Conductor material		tin-plated, 2-3 $\mu\text{m}$	
Current rating at 20°C	A	8	12
Voltage rating	V <sub>DC</sub>	300	
Dielectric strength	V <sub>DC/min</sub>	1500	

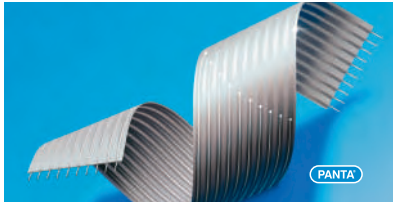
### The HIGH POWER Connector

Pitch	mm	3.96 HI-POWER
Max. number of pins		2-8
Type of connection		IDC
Wire gauge	AWG	19
Conductor type		solid
Polarization		integrated
Coding		by pins
Current rating	A	12.5 A
Operating voltage		VDE 0110 b / 2.79 table 4
Operating temperature	°C	-55 to 105

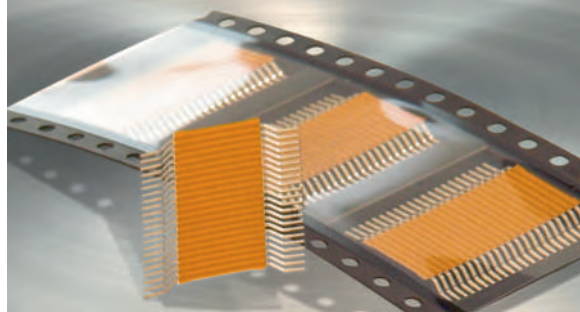
### The POWER Jumper – Insulation materials

Insulation		Polyester	Nomex	PEN	Polyimide
With pitch	mm	3.96			
American Wire Gauge	AWG	19			
Insulation resistance (grd-sig-grd)	$\Omega$	> 10 <sup>10</sup>			
Operating temperature	°C	-40 ... +105	-40 ... +125	-40 ... +125	-40 ... +125
Soldering temperature	°C/sec	250/4	260/5	260/5	260/5





## PANTA SMD



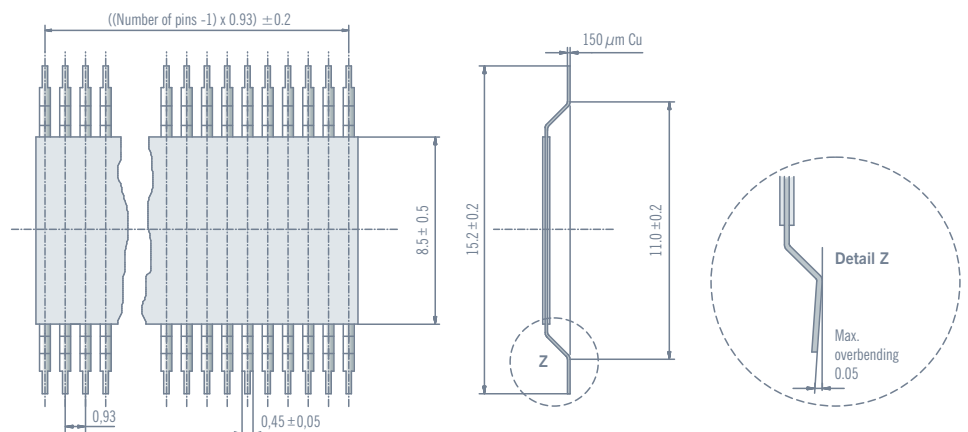
### PRODUCT DESCRIPTION

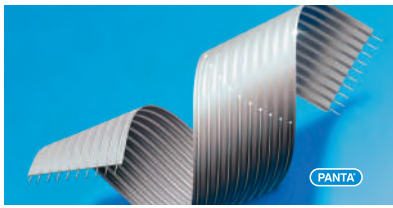
The PANTA SMD jumper has been designed to connect sandwiched PCBs or PCBs positioned at different angles. It offers the user a great variety of possible configurations when designing electronic devices.

- ▶ High flexibility and compensation of tolerances
- ▶ Resistance to high temperatures
- ▶ Placement by SMD assembly machines
- ▶ Can be reflow soldered
- ▶ Best solution to interconnect 90° and 180° SMD boards

### CHARACTERISTICS

- ▶ Available pitch: 0.93 mm
- ▶ Bridge length: 11.2 mm
- ▶ Total length: 15.2 mm
- ▶ Number of pins: 6, 9, 11 and 22
- ▶ Packaging unit: 1500 pcs on returnable reel
- ▶ Special pitches and other pin counts on request
- ▶ Customized SMD solutions available. Tooling costs will be charged.





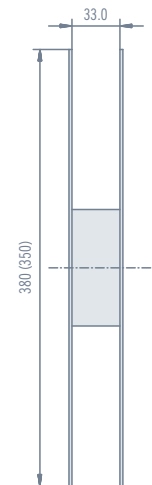
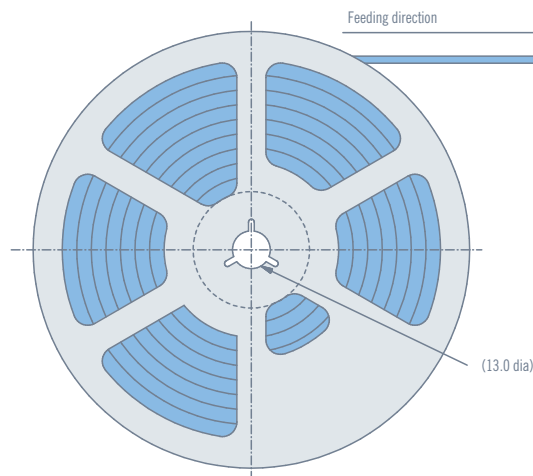
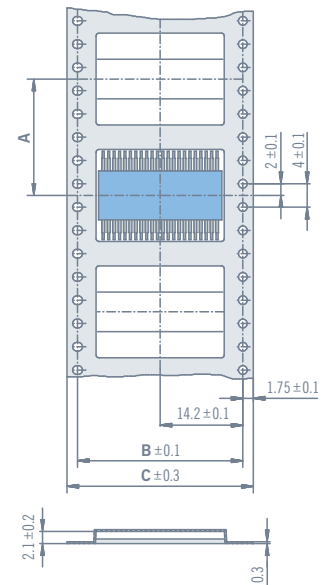
# PANTA SMD

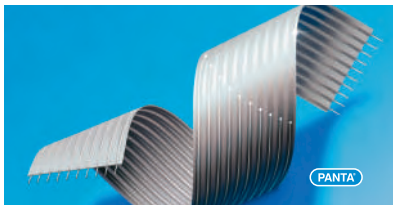
## ORDER CODE

	Number of pins	Pitch E=0.93 mm	Insulation length 8.3 mm
<b>SMD - 22 - 093 - K - 083 -</b>			<input type="checkbox"/>
Insulation material K = Polyimide		Special designs on request, drawing required	

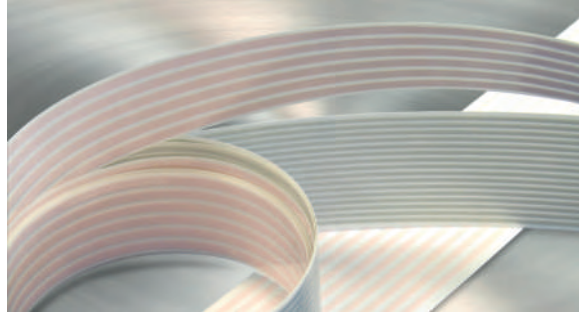
## TECHNICAL DATA

Pitch	mm	0.93
Max. number of pins		6 to 22
Insulation material		Polyimide insulation 25 $\mu$ m + adhesive
Insulation resistance	$\Omega$	$10^8$
Coplanarity	mm	0,15
Min. bending radius	mm	2.0
Max. bending cycle		20 x 135°
Conductor material		Cu 150 $\mu$ m SN
Current rating at 20°C	A	1
Soldering temperature	°C/sec.	260/10 reflow solderable
Operating temperature	°C	-40°C to +125°C





## PANTA FFC



### PRODUCT DESCRIPTION

PANTA FFCs are flat copper conductors of various dimensions laminated with high-quality insulation foils. They guarantee significant competitive advantages as compared with conventional cables.

### BENEFITS

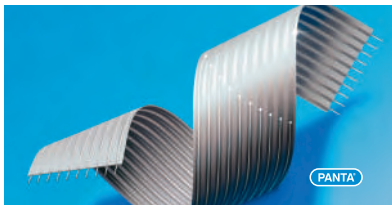
- ▶ Flexibility through flat copper conductors
- ▶ Highly vibration resistant
- ▶ Reliable and fracture-safe connection even under high stress
- ▶ Minimum space required
- ▶ Lightweight construction
- ▶ Versatility in assembly
- ▶ High thermal resistance
- ▶ High chemical resistance (meets automotive requirements)
- ▶ Wiring errors are avoided
- ▶ Corrosion resistance
- ▶ Suitable for safety applications (e.g. air bags)

### CHARACTERISTICS

We offer customized FFCs for the automotive industry. The optimum FFC solution is designed and manufactured according to the customer's performance specification.

- ▶ High-quality insulation foils in various thicknesses
- ▶ Flat copper conductor in thicknesses of 35  $\mu\text{m}$  and more
- ▶ Selection of copper widths use of novel ZZIP® copper strip from Wieland
- ▶ Observance of very tight tolerances by advanced manufacturing technologies
- ▶ Marking of the FFCs according to your specifications
- ▶ Highly precise window technologies
- ▶ Selective stripping of copper conductors by laser processing
- ▶ Matrix connections available
- ▶ Assembly services (resistance welding, crimping, soldering, overmolding, potting)

On request, we can produce the whole assembly for you.

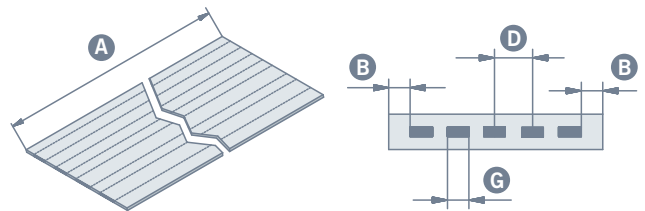


# PANTA FFC

## ORDER CODE

	<b>Pitch</b> e.g. A=2.54 mm See pitch code	<b>Insulation material</b> e.g. P = Polyester N = Nomex E = PEN K = Polyimide	<b>Special</b> Drawing required
<b>FFC - A 05 - P 1500 - 001</b>			
	<b>Number of pins</b>	<b>Insulation length</b> selectable above 15 mm	

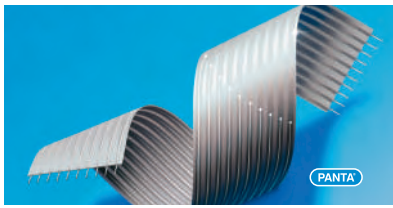
## TECHNICAL DATA



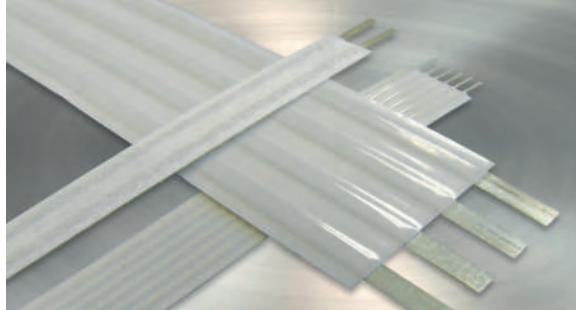
Order code		E	G	B	D	F	A	S	Z	P	R	N	M	C	K	J
<b>D</b> Pitch	mm	1.00	1.25	1.27	2.00	2.50	2.54	2.70	3.18	3.50	3.81	3.96	5.00	5.08	7.00	7.50
Max. number of pins		on request														
<b>A</b> Length	mm	selectable above 15 mm														
<b>B</b> Max. margin	mm	selectable up to 10														
<b>B</b> Min. margin	mm	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
<b>G</b> American Wire Gauge	AWG	30	30	28	26	24	24	24	24	24	24	24	24	24	22	22
<b>G</b> Special wire gauges	AWG	-	-	30	24	26	26	26	22	22	22	22	22	22	-	-
Conductor material		Cu acc. to DIN 40500; min. 1.5 μm tin-plated														
Current rating at 20°C	A	1.0	1.5	1.5	2.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.5	3.5	3.5
Voltage rating	V <sub>DC</sub>	200	200	200	200	300	300	300	300	300	300	300	300	300	300	300
Dielectric strength	V <sub>DC,min</sub>	700	700	700	1000	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500

Insulation		Polyester	Nomex	PEN	Polyimide
With pitch	mm	2.54			
American Wire Gauge	AWG	24			
Insulation resistance (grd-si-grd)	Ω	>10 <sup>10</sup>			
Operating temperature	°C	-40 ... +105	-40 ... +125	-40 ... +125	-40 ... +125
Soldering temperature	°C/sec	250/4	260/5	260/5	260/5





# PANTA FLL



## PRODUCT DESCRIPTION

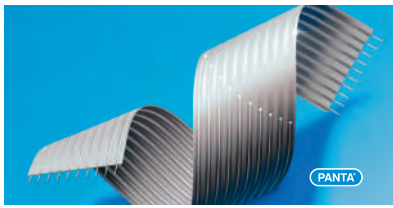
- ▶ Immediately ready for installation
- ▶ High vibration and bending resistance
- ▶ Suitable for SMD soldering (e.g. hot bar soldering)
- ▶ High-quality insulation materials (-40°C to +125°C)
- ▶ Minimum dimensions through thin foils and small pitches
- ▶ Standard contact zone 2.5 mm
- ▶ Short bridging lengths available

## CHARACTERISTICS

- ▶ Compatible with PANTA FIX with round solder pins
- ▶ Compatible with PANTA ZIF connections
- ▶ Special versions of insulation foil (punching of holes or trenches)
- ▶ Customized SMD solutions available
- ▶ Insulation material (NOMEX) suitable for reflow soldering

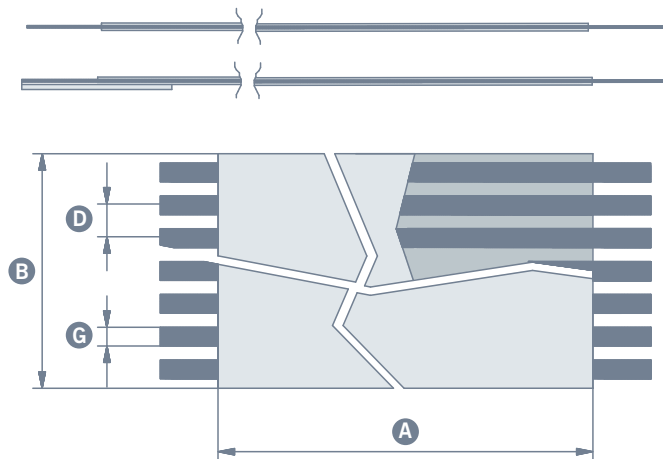
## ORDER CODE

Pitch e.g. A=2.54 mm See pitch code	Insulation material e.g. P = Polyester N = Nomex E = PEN K = Polyimide	Special Drawing required
<b>FLL - A 05 - N 051 - 001</b>		
Number of pins	Insulation length from 15-999 mm Special lengths on request	



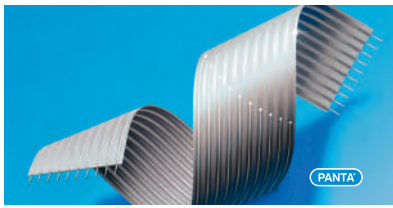
# PANTA FLL

## TECHNICAL DATA



Order code		I	U	E	G	B	D	F	A
<b>D</b> Pitch	mm	0.5	0.8	1.00	1.25	1.27	2.00	2.50	2.54
Max. number of pins		6-50	4-30	4-30	2-30	2-30	2-16	2-16	2-16
<b>A</b> Length	mm	12 - 999; special lengths up to 5000							
<b>B</b> Min. margin	mm	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35
<b>G</b> Flat conductor width	mm	0.3	0.5	0.7	0.8	0.8	1.35	1.5	1.5
Flat conductor thickness	$\mu\text{m}$	100	100	100	100	100	100	127	127
Conductor material		Cu acc. to DIN 40500; min. 1.0 $\mu\text{m}$ tin-plated							
Current rating at 20°C	A	0.5	1.0	1.0	1.5	1.5	2.0	3.0	3.0
Voltage rating	$V_{\text{DC}}$	30	100	200	200	200	200	300	300
Dielectric strength	$V_{\text{DC}/\text{min}}$	100	300	700	1100	1100	1500	1500	1500

Insulation		Polyester	Nomex	PEN	Polyimide
With pitch	mm	0.5 - 2.54			
American Wire Gauge	AWG	24			
Insulation resistance (grd-sig-grd)	$\Omega$	$> 10^{10}$			
Operating temperature	$^{\circ}\text{C}$	-40 ... +105	-40 ... +125	-40 ... +125	-40 ... +125
Soldering temperature	$^{\circ}\text{C}/\text{sec}$	250/4	260/5	260/5	260/5



## PANTA FLEXIBLE MODULES



### PRODUCT DESCRIPTION

PANTA FLEXIBLE MODULES are customized applications.

PANTA FLEXIBLE FLAT CABLES or PANTA FLEXIBLE BOARD CONNECTIONS are assembled with electronic components into a PANTA FLEXIBLE MODULE in our manufacturing process.

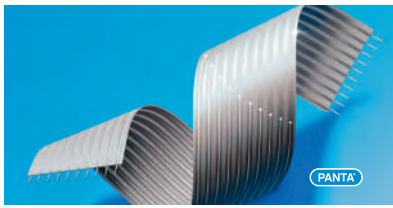
### BENEFITS

- ▶ Customized design
- ▶ Meets customer requirements
- ▶ Know-how of flexible connection technologies
- ▶ Free resources through a competent design partner
- ▶ Combinations of technologies

### ORDER CODE

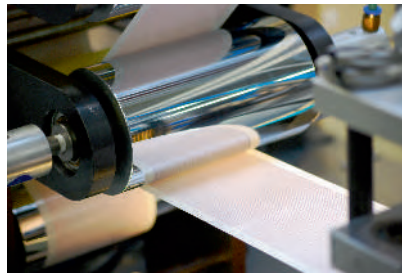
## 4X0 - XXXXX - XX

- 4X0 Main assembly (number defined in order code)
- 41X Sensor assembly
- 42X Components on cable assembly
- 43X Jumper assembly
- 44X Air bag assembly
- 46X Steering assistance assembly
- 47X FFC assembly



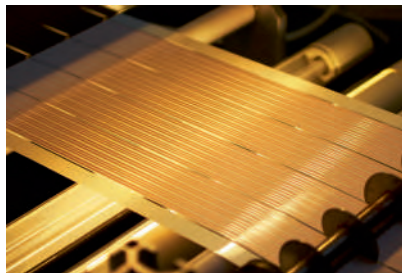
## PANTA FLEXIBLE MODULES

### PANTA - TECHNICAL EQUIPMENT



#### LAMINATION

Laminating is the process used to embed the copper conductor in insulating foil by means of pressure and heat. The foils are coated with adhesive on one side. The copper conductors are parallel to each other. Different pitches can be combined.



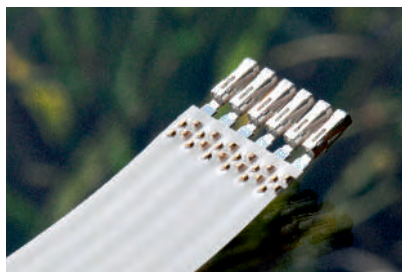
#### CUTTERS

The laminated mother rolls are slit to the final cable width. The cables are then cut across to the required length.



#### STRIPPING

The cable terminations are made in a stripping process. The insulation is stripped off the copper wires using a special cutter. The conductor ends can then be processed further to the required termination style with respective bending tools.



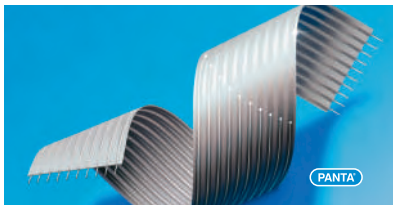
#### CRIMP TECHNOLOGY

Making crimp connections to flat conductors of 1.27 mm and 2.54 mm pitch with the crimping technology from Tyco and Nicomatic. (For further information see PANTA FIX Crimp on page 6)



#### OVERMOLDING

Fully hydraulic injection molding machines overmold the cable ends and FLEXIBLE MODULES. The maximum injection volume is 15 cm<sup>3</sup> with a projected area of max. 75 cm<sup>2</sup>.



## PANTA FLEXIBLE MODULES

### PANTA - TECHNICAL EQUIPMENT



#### POTTING WITH MACROMELT®

Macromelt® excels through clean processability and assuredly does not contain any solvents or other harmful substances. Macromelt® is particularly suitable for applications that require good adhesion to conductor or housing materials at low processing pressure. The molten low-viscosity Macromelt® is injected into the cavities at low pressure. It spreads gently around even the tiniest components, seals and protects them.



#### STIFFENERS

Special equipment places adhesive tapes and reinforcements onto our FPCs and ZIF jumpers.



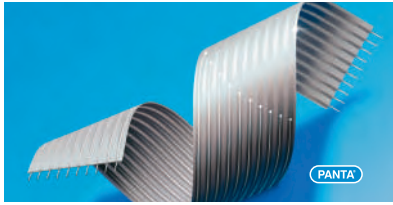
#### LASER PROCESSING

A highly precise powerful 300 W CO<sub>2</sub> laser implements fast and very flexible stripping modes.



#### SOLDERING

Selective soldering systems ensure optimum soldering while minimizing the heat stress for components. For the assembly of SMD components, placement systems and a reflow soldering system are available.



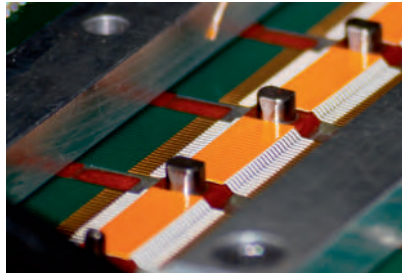
## PANTA FLEXIBLE MODULES

### PANTA - TECHNICAL EQUIPMENT



#### RESISTANCE WELDING

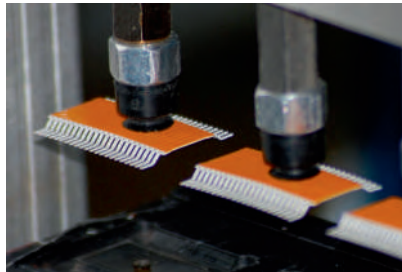
The contact between the components and PANTA cables by means of resistance welding ensures a safe interface of very high quality. Welded flexible modules are later potted or overmolded in order to secure the weld.



#### ASSEMBLY LINES

**FMS** - Flexible assembly systems ensure high-quality modules even for medium-sized series.

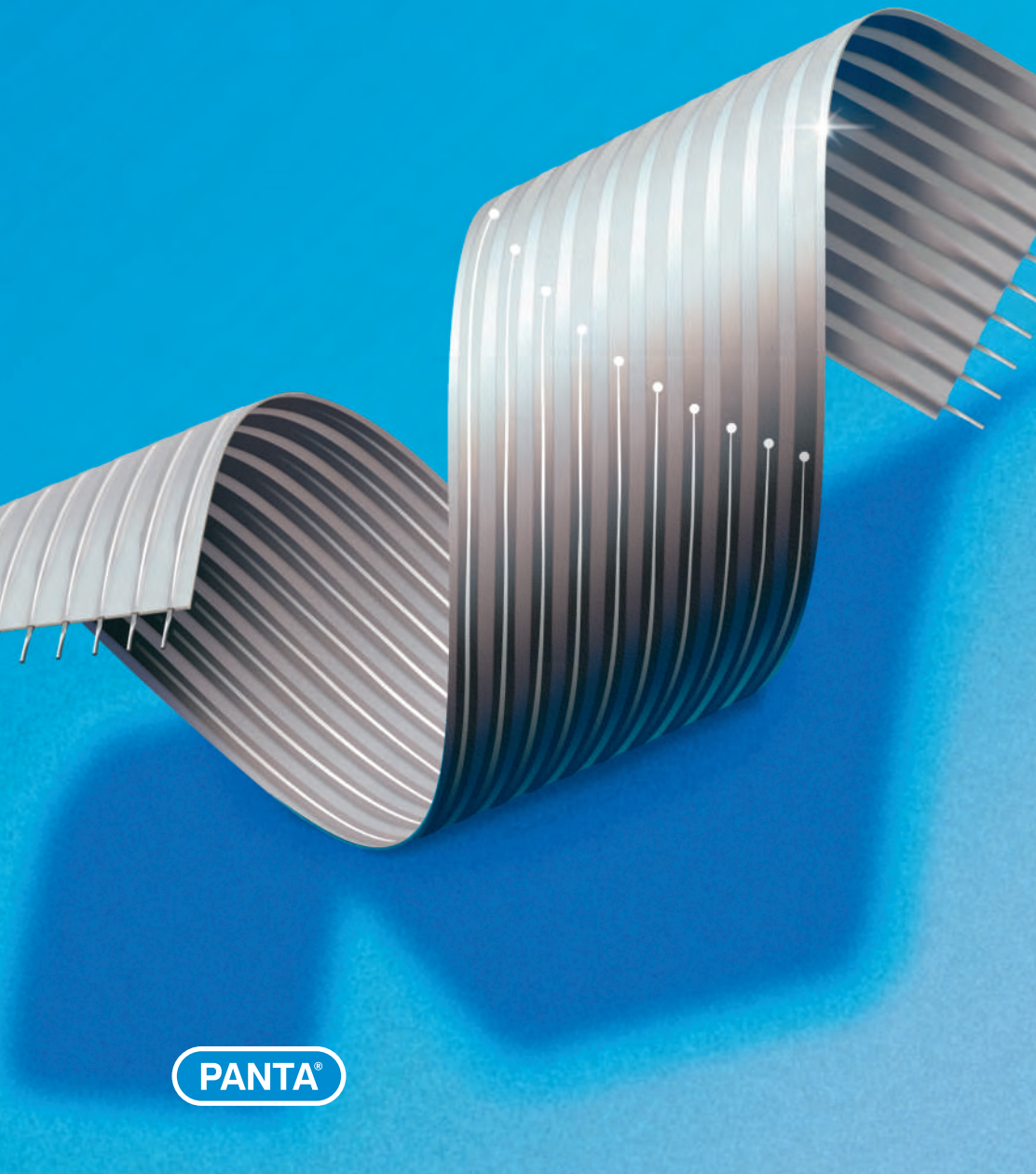
**AMS** - Automatic assembly systems produce large series of customized modules in fully automatic operation.



The best assembly line is selected after a technical and qualitative assessment of the customized module with regard to cost and benefit.

Simple and wage-intensive modules can be produced in our plant in Romania as required.





PANTA®



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