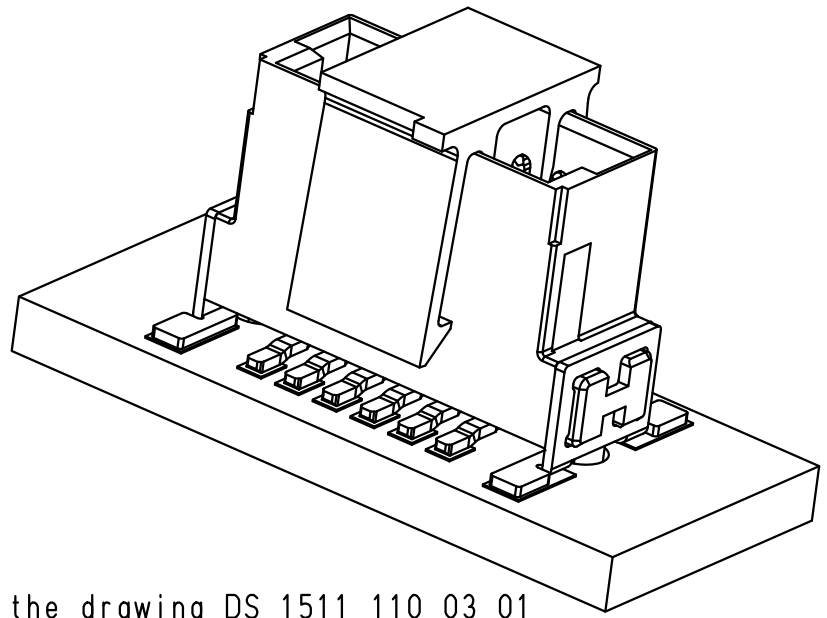
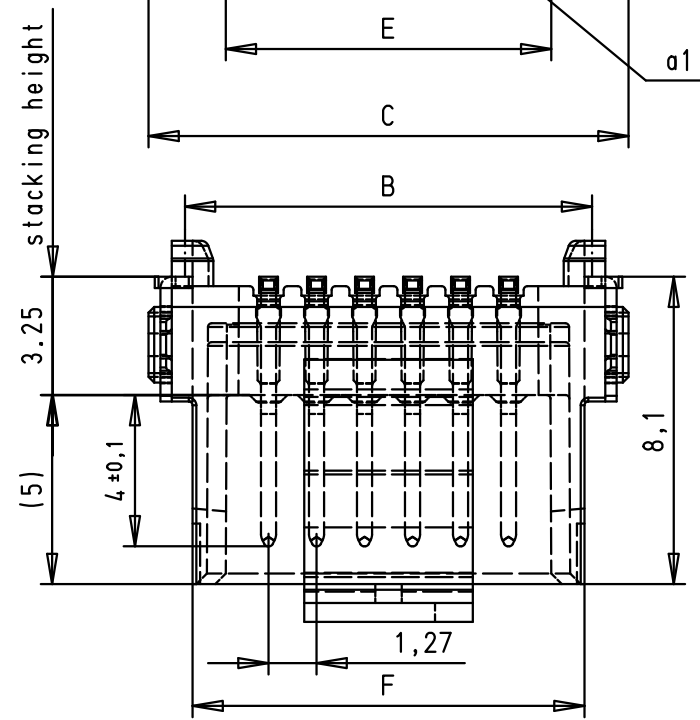
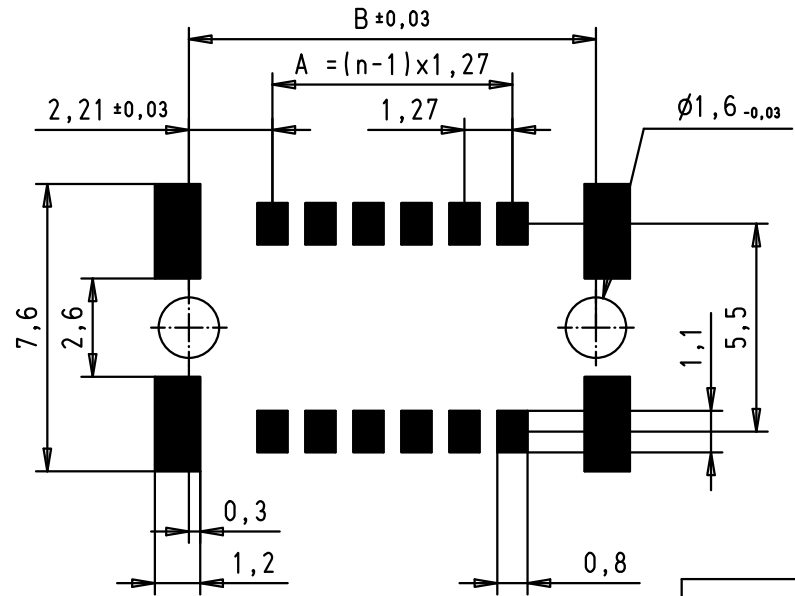
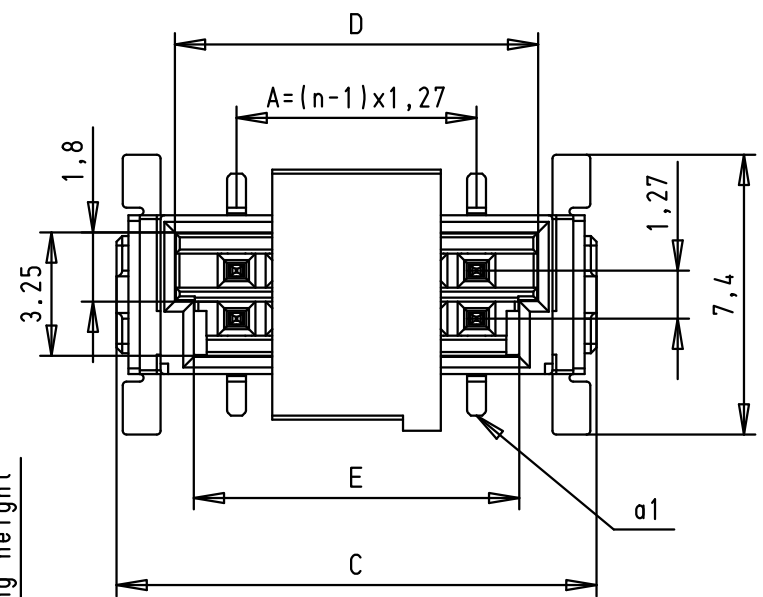
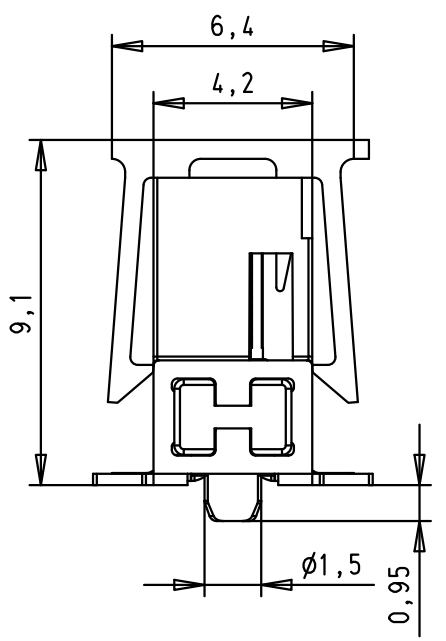
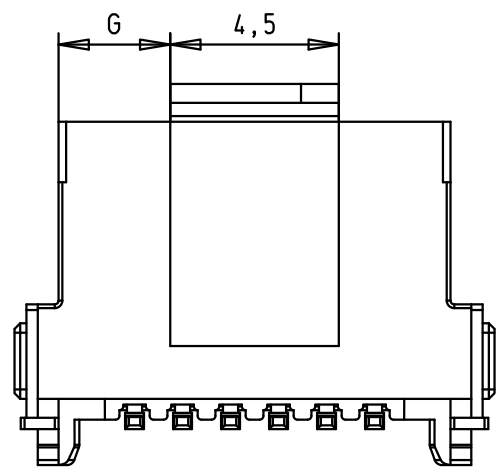


A B C D E F



Performance Level	
PL1 : >500 mating cycles	2
PL2 : >250 mating cycles	6
PLS4 : min 0.06µm Au over 0.7+0.2µm PdNi	5

Packaging	
tape & reel with 280pcs per reel	000
samples	333

	All Dimensions in mm Original Size DIN A 3	
Mod.	Dat.	Name

Techn. Character.		
Dat.	Name	Maßstab/Scale
Detail.	23Aou.2011	JA
Insp.	30Aou.2011	JMV
Stand.		

Nicht tolerierte Maß/Free size tolerances	
har-flex straight male stacking height 3.25mm with vacuum cover	
HARTING	TB1512XXX601.XXX
Sub.	Blatt/page 1/1

Find further technical information on the drawing DS 1511 110 03 01

Part number	nb of cont.	A	B	C	D	E	F	G
15 12 006 x601xxx	006	2.54	6.96	8.89	5.76	4.76	6.56	1.05
15 12 008 x601xxx	008	3.81	8.23	10.16	7.03	6.03	7.83	1.69
15 12 010 x601xxx	010	5.08	9.50	11.43	8.30	7.30	9.10	2.32
15 12 012 x601xxx	012	6.35	10.77	12.70	9.57	8.57	10.37	2.96
15 12 014 x601xxx	014	7.62	12.04	13.97	10.84	9.84	11.64	3.59
15 12 016 x601xxx	016	8.89	13.31	15.24	12.11	11.11	12.91	4.23
15 12 018 x601xxx	018	10.16	14.58	16.51	13.38	12.38	14.18	4.88
15 12 020 x601xxx	020	11.43	15.85	17.78	14.65	13.65	15.45	5.50
15 12 022 x601xxx	022	12.70	17.12	19.05	15.92	14.92	16.72	6.13
15 12 024 x601xxx	024	13.97	18.39	20.32	17.19	16.19	17.99	6.77
15 12 026 x601xxx	026	15.24	19.66	21.59	18.46	17.46	19.26	7.40
15 12 028 x601xxx	028	16.51	20.93	22.86	19.73	18.73	20.53	8.04
15 12 030 x601xxx	030	17.78	22.20	24.13	21.00	20.00	21.80	8.67
15 12 032 x601xxx	032	19.05	23.47	25.40	22.27	21.27	23.07	9.31
15 12 034 x601xxx	034	20.32	24.74	26.67	23.54	22.54	24.34	9.94
15 12 036 x601xxx	036	21.59	26.01	27.94	24.81	23.81	25.61	10.58
15 12 038 x601xxx	038	22.86	27.28	29.21	26.08	25.08	26.88	11.21
15 12 040 x601xxx	040	24.13	28.55	30.48	27.35	26.35	28.15	11.85
15 12 042 x601xxx	042	25.40	29.82	31.75	28.62	27.62	29.42	12.48
15 12 044 x601xxx	044	26.67	31.09	33.02	29.89	28.89	30.69	13.12
15 12 046 x601xxx	046	27.94	32.36	34.29	31.16	30.16	31.96	13.75
15 12 048 x601xxx	048	29.21	33.63	35.56	32.43	31.43	33.23	14.39
15 12 050 x601xxx	050	30.48	34.90	36.83	33.70	32.70	34.50	15.02
15 12 052 x601xxx	052	31.75	36.17	38.10	34.97	33.97	35.77	15.66
15 12 054 x601xxx	054	33.02	37.44	39.37	36.24	35.24	37.04	16.29
15 12 056 x601xxx	056	34.29	38.71	40.64	37.51	36.51	38.31	16.93
15 12 058 x601xxx	058	35.56	39.98	41.91	38.78	37.78	39.58	17.56
15 12 060 x601xxx	060	36.83	41.25	43.18	40.05	39.05	40.85	18.20
15 12 062 x601xxx	062	38.10	42.52	44.45	41.32	40.32	42.12	18.83
15 12 064 x601xxx	064	39.37	43.79	45.72	42.59	41.59	43.39	19.47
15 12 066 x601xxx	066	40.64	45.06	46.99	43.86	42.86	44.66	20.10
15 12 068 x601xxx	068	41.91	46.33	48.26	45.13	44.13	45.93	20.74
15 12 070 x601xxx	070	43.18	47.60	49.53	46.40	45.40	47.20	21.37
15 12 072 x601xxx	072	44.45	48.87	50.80	47.67	46.67	48.47	22.01
15 12 074 x601xxx	074	45.72	50.14	52.07	48.94	47.94	49.74	22.64
15 12 076 x601xxx	076	46.99	51.41	53.34	50.21	49.21	51.01	23.28
15 12 078 x601xxx	078	48.26	52.68	54.61	51.48	50.48	52.28	23.91
15 12 080 x601xxx	080	49.53	53.95	55.88	52.75	51.75	53.55	24.55
15 12 082 x601xxx	082	50.80	55.22	57.15	54.02	53.02	54.82	25.18
15 12 084 x601xxx	084	52.07	56.49	58.42	55.29	54.29	56.09	25.82
15 12 086 x601xxx	086	53.34	57.76	59.69	56.56	55.56	57.36	26.45
15 12 088 x601xxx	088	54.61	59.03	60.96	57.83	56.83	58.63	27.09
15 12 090 x601xxx	090	55.88	60.30	62.23	59.10	58.10	59.90	27.72
15 12 092 x601xxx	092	57.15	61.57	63.50	60.37	59.37	61.17	28.36
15 12 094 x601xxx	094	58.42	62.84	64.77	61.64	60.64	62.44	28.99
15 12 096 x601xxx	096	59.69	64.11	66.04	62.91	61.91	63.71	29.63
15 12 098 x601xxx	098	60.96	65.38	67.31	64.18	63.18	64.98	30.26
15 12 100 x601xxx	100	62.23	66.65	68.58	65.45	64.45	66.25	30.90



# har-flex straight male connector



## General information

Design	Mezzanine connector	
No. of contacts	from 6 to 100poles	
Contact spacing	1,27mm x 1,27mm [0,050"x0,050"]	
Test voltage	500 V	
Contact resistance	< 25 mOhm	
Insulation resistance	> 1x10 <sup>7</sup> Ohm	
Working current acc. to IEC 60512, @70°C, 80% derating	6 poles : 1,2A	68poles : 0,75A
	32 poles : 0,8A	100 poles : 0,7A
Temperature range	-55°C ... +125°C	
Termination technology	SMT	
Reflow processing temperature	2min. @ 220°C	
Clearance & creepage distance	0,4mm min.	
Insertion force (depending on mating PCB)	approximately 0,5N/contact	
Withdrawal force (depending on mating PCB)	approximately 0,5N/contact	
Mating cycles	PL1 : 500 mating cycles	
	PL2 : 250 mating cycles	
RoHS - compliant	Yes	
Leadfree	Yes	

## Insulator material

Material	LCP (liquid crystalline polymer)
Color	black
UL classification	UL 94-V0
Material group acc. IEC 60664-1	IIIa (175 ≤ CTI < 400)

## Contact material

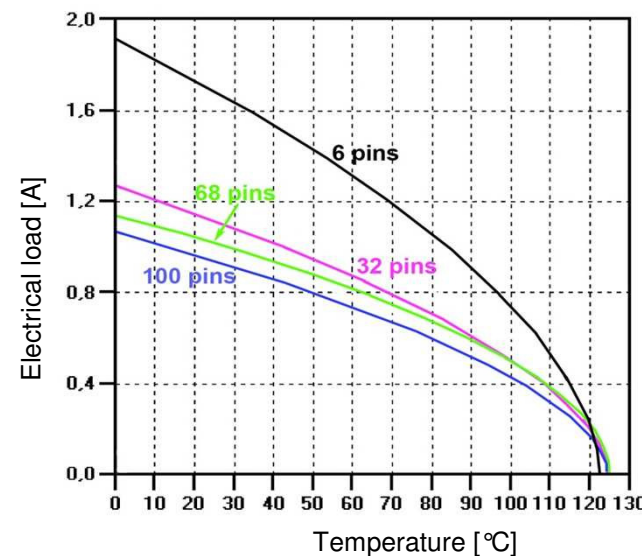
Contact material	Copper alloy
Plating termination zone	Sn
Plating contact zone	Au over PdNi (acc.to Performnce Level)

## Derating diagram acc. to IEC 60512-5 (Current carrying capacity)

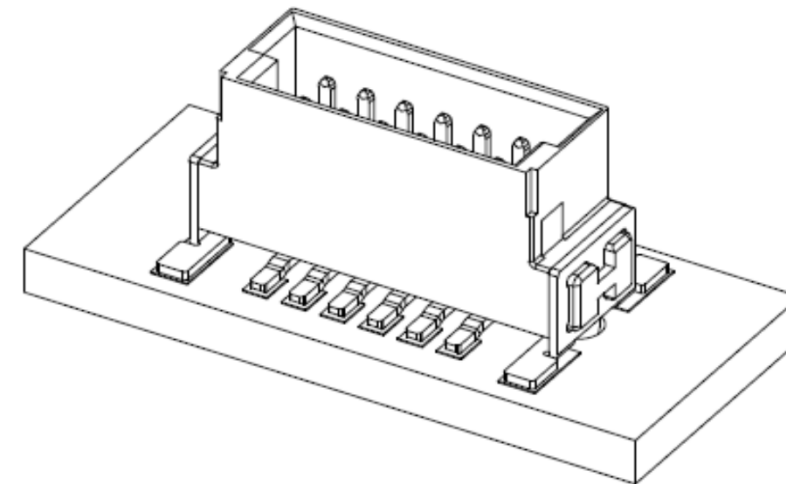
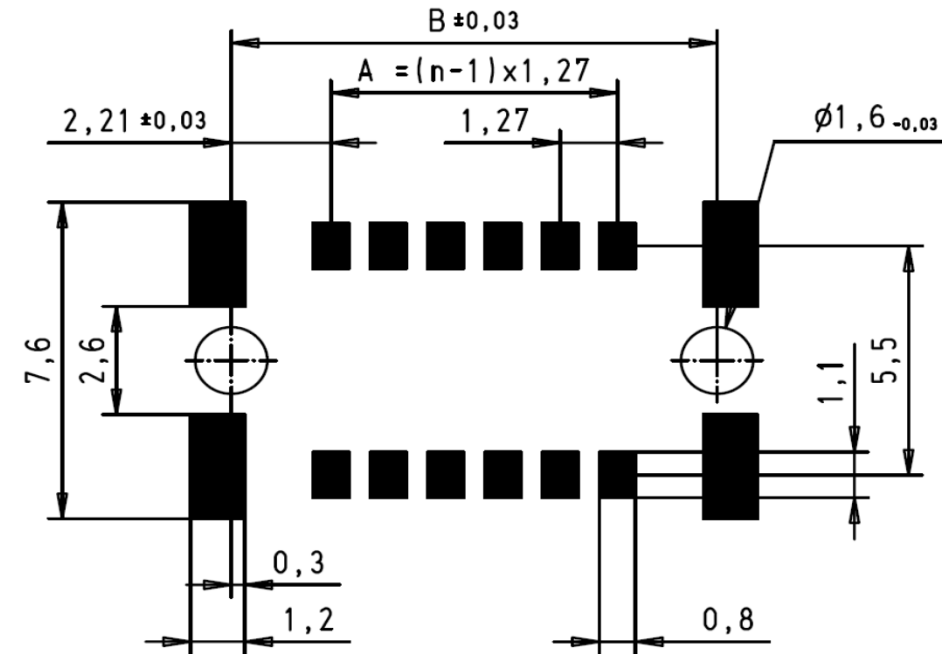
The current carrying capacity is limited by maximum temperature of materials for inserts and contacts including terminals.  
The current capacity curve is valid for continuous, non interrupted current loaded contacts of connectors when simultaneous power on all contacts is given, without exceeding the maximum temperature.

Control and test procedures according to DIN IEC 60512-5

derating curve at I<sub>max</sub>\*0,8 (IEC 60512-5-2)



## Recommended layout



Pole number	A	B
006	2,54	6,96
008	3,81	8,23
010	5,08	9,50
012	6,35	10,77
014	7,62	12,04
016	8,89	13,31
018	10,16	14,58
020	11,43	15,85
022	12,70	17,12
024	13,97	18,39
026	15,24	19,66
028	16,51	20,93
030	17,78	22,20
032	19,05	23,47
034	20,32	24,74
036	21,59	26,01
038	22,86	27,28
040	24,13	28,55
042	25,40	29,82
044	26,67	31,09
046	27,94	32,36
048	29,21	33,63
050	30,48	34,90
052	31,75	36,17
054	33,02	37,44
056	34,29	38,71
058	35,56	39,98
060	36,83	41,25
062	38,10	42,52
064	39,37	43,79
066	40,64	45,06
068	41,91	46,33
070	43,18	47,60
072	44,45	48,87
074	45,72	50,14
076	46,99	51,41
078	48,26	52,68
080	49,53	53,95
082	50,80	55,22
084	52,07	56,49
086	53,34	57,76
088	54,61	59,03
090	55,88	60,30
092	57,15	61,57
094	58,42	62,84
096	59,69	64,11
098	60,96	65,38
100	62,23	66,65

			Date	Name
			Detail.	29aou11 JA
			Inspec.	30aou11 JMV
			Stand.	
Mod.	Date	Name	HARTING Electronics GmbH & Co. KG	



## Technical data sheet

har flex male stacking height 1,75 and 3,25 mm

DS 15 11 110 03 01

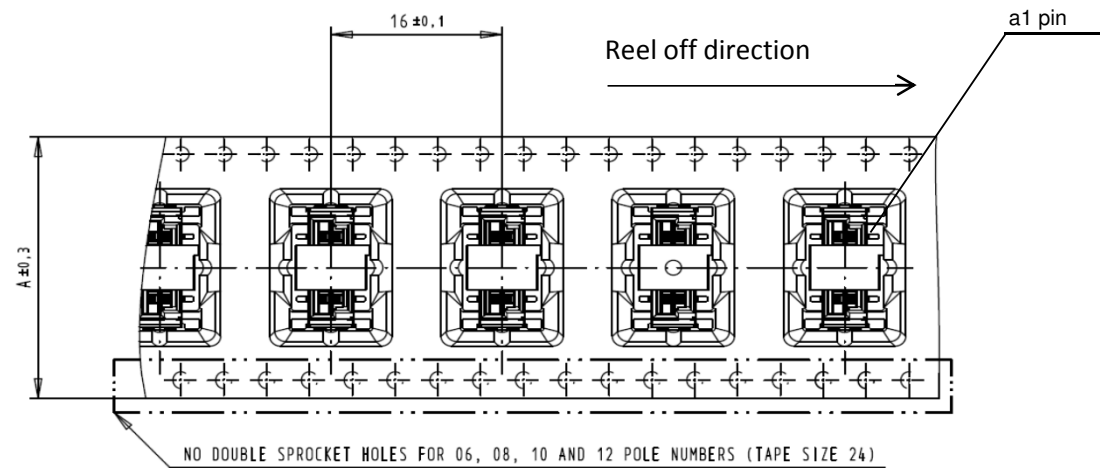


# har-flex straight male connector



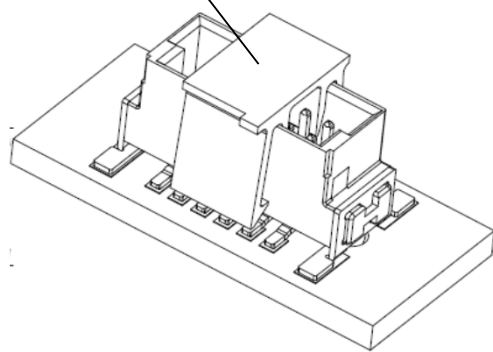
## Tape layout & packaging

Tape acc. to IEC 60286-3

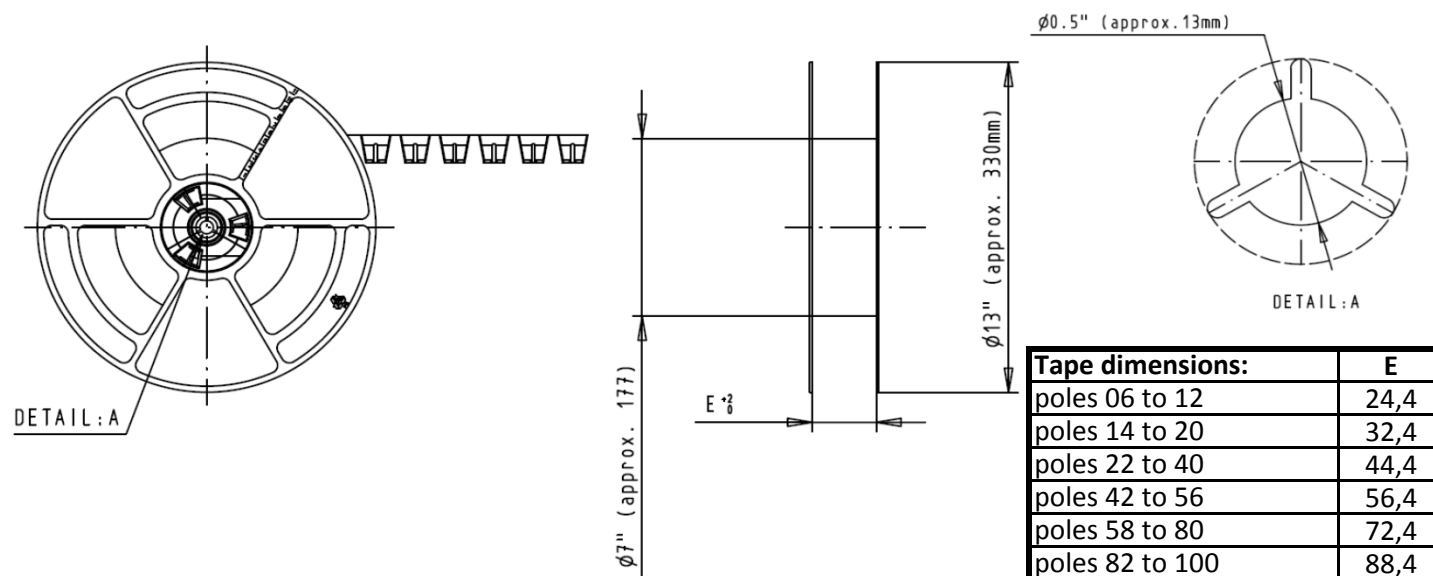


Tape dimensions:	A
poles 06 to 12	24,0
poles 14 to 20	32,0
poles 22 to 40	44,0
poles 42 to 56	56,0
poles 58 to 80	72,0
poles 82 to 100	88,0

Pick & place pad 6,4 ± 0,1 x 4,5 ± 0,1



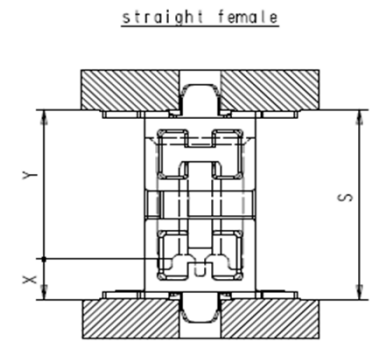
## Reel dimensions



Tape dimensions:	E
poles 06 to 12	24,4
poles 14 to 20	32,4
poles 22 to 40	44,4
poles 42 to 56	56,4
poles 58 to 80	72,4
poles 82 to 100	88,4

## Application information

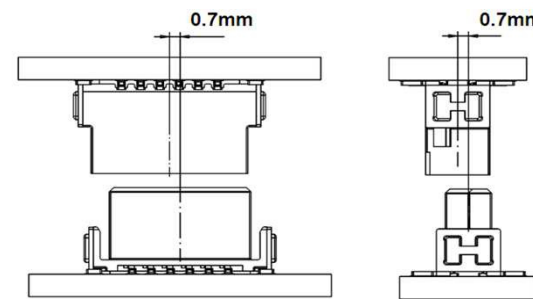
S	14mm				
	13mm				
S	12mm				
	11mm				
S	10mm				
	9mm				
S	8mm				
X & Y	stacking heights	male 1.75mm female 6.25mm	male 3.25mm female 6.25mm	male 1.75mm female 9.05mm	male 3.25mm female 9.05mm
	PCB distance	8mm - 9.5mm	9.5mm - 11mm	10.8mm - 12.3mm	12.3mm - 13.8mm
S	part numbers	15 11 ... 15 21 ...	15 12 ... 15 21 ...	15 11 ... 15 22 ...	15 12 ... 15 22 ...



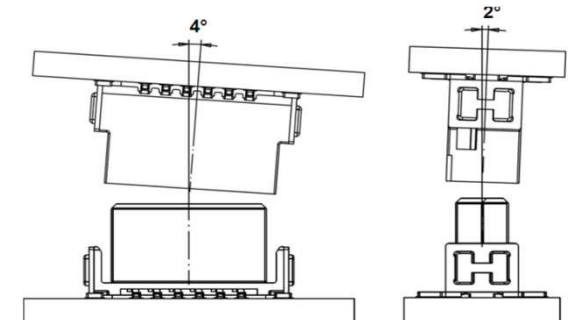
straight male			
X	Y	S <sub>min</sub>	S <sub>max</sub>
3.25	9.05	12.3	13.8
1.75	9.05	10.8	12.3
3.25	6.25	9.5	11
1.75	6.25	8	9.5

\* S<sub>max</sub> = S<sub>min</sub> + 1.5 wiping length with additional contact overlap security

## Admissible inclination



## Admissible mismatching



Mod.	Date	Name	Date	Name
			29aou11	JA
			30aou11	JMV
HARTING Electronics GmbH & Co. KG				



Technical data sheet	
har flex male stacking height 1,75 and 3,25 mm	
DS 15 11 110 03 01	