AA series   AB series   GB series

KA series   EB series   HA series

active gauge length in mm

gauge resistance in ohms

backing material

gauge types

gauge-grid and solder-tab geometry

working temperature. limit

gauge S.T. C. or E. M. C. numbers

gauge creep code

solder-tab & wiring

B F 350 - 3 AA 80 (23) M6 - X

X : sealed, standard wire
D : sealed, tined solder dot
C : naked solder pad
U : naked with copper wire
F : naked without wire
X** : sealed, round lead
    ** stand for lead length
BX** : sealed, flat ribbon
    ** stand for lead length
Q** : sealed, enamel insulated
    copper wire
    ** stand for wire length
G** : sealed, PTFE wire
    **stand for wire length
P** : sealed, PVC wire
    **stand for wire length

B : foil type
T : special purpose
Z : Kama alloy

S. T. C. or E. M. C.

9 : TITANIUM

11 : Steel alloy

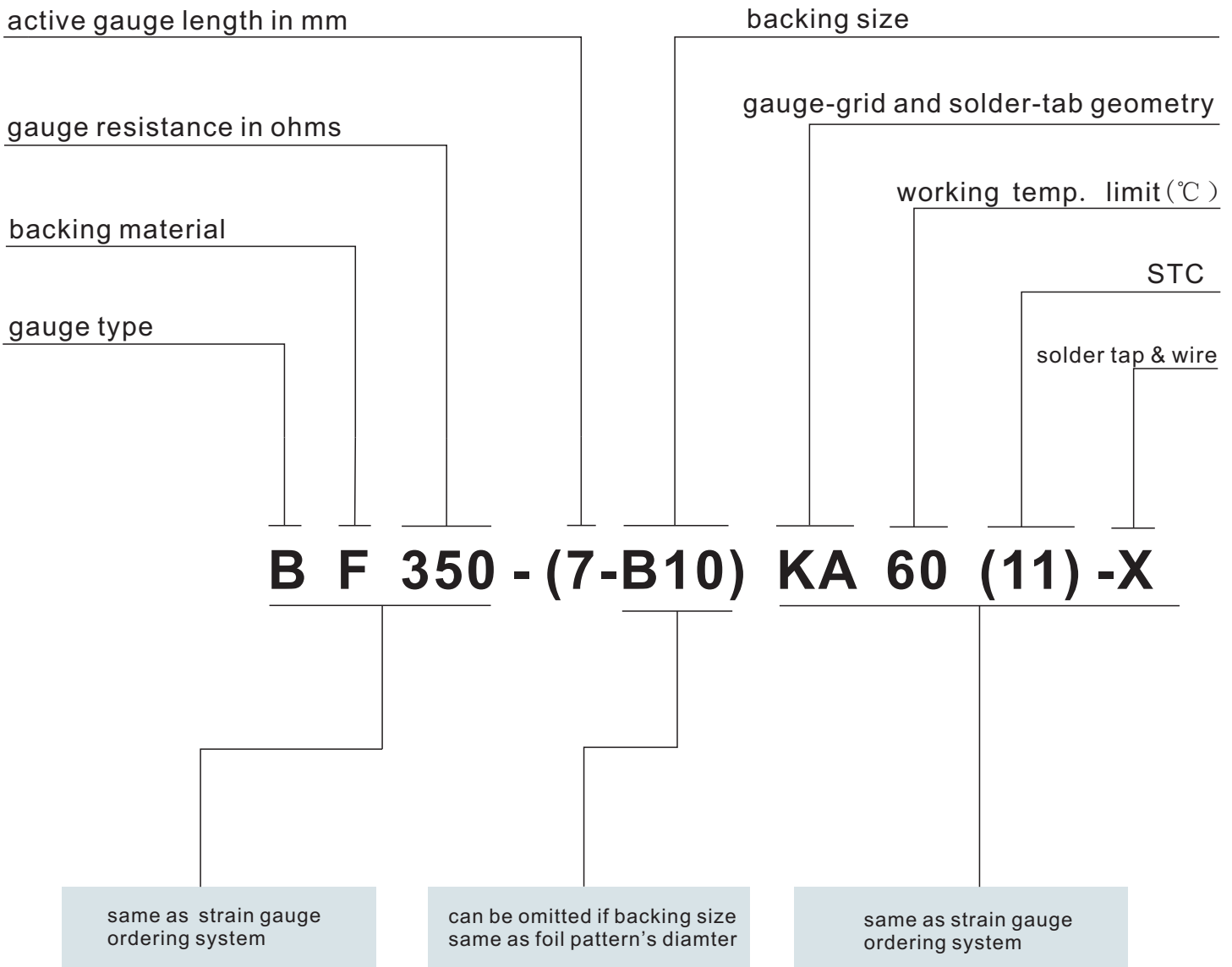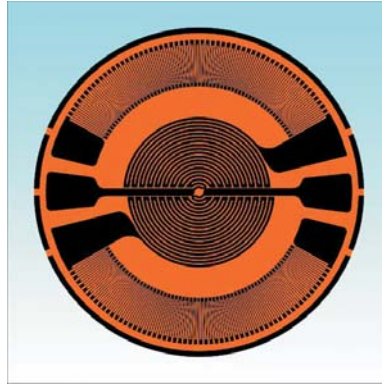16 : stainless steel

23 : aluminum alloy

27 : magnesium alloy

B : glass fibre reinforced polyimide
F : modified phenolic resin
A : polyimide resin
E : phenolic acetal resin
Q : paper-based acetal resin

creep code :

M9, M8, M7, M6, M5, M4, M3, M2, M1,
O1, O2, O3, O4, O5, O6, O7, O8, O9

Coding System of KA Series Strain Gauges

active gauge length in mm

backing size

gauge resistance in ohms

gauge-grid and solder-tab geometry

backing material

working temp. limit(℃)

STC

gauge type

solder tap & wire

B F 350 - (7-B10) KA 60 (11) -X

same as strain gauge ordering system

can be omitted if backing size same as foil pattern's diamter

same as strain gauge ordering system

M9>M8>M7>M6>M5>M4>M3>M2>M1>O1>O2>O3>O4>O5>O6>O7>O8>O9

⟵——————————————— **creep** ———————————————⟶

∗: the difference in creep is 0. 01~0. 015%FS/30min between any two adjacent creep codes.

Strain Gauges For Transducers Application

BF series

modified phenolic resin backing, constantan alloy, encapsulated gauges with temperature compensation and creep compensation; high accuracy, good stability , for manufacturing precision transducers（0. 02%FS）
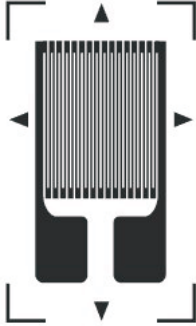
ZF series

modified phenolic resin backing, karma alloy, encapsulated gauges with temperature compensation and creep compensation(or modulus compensation)；high accuracy, good stability, high resistance, small power loss, for manufacturing 0.02%FS accuracy transducers.

BA series

polyamide resin, constantan alloy, encapsulated gauges with temperature compensation, high elongation, wider operating temperature range, suitable for stress analysis under 150℃ andbuilding 0.05%FS accuracy transducers.

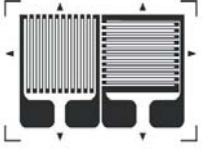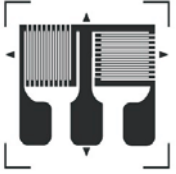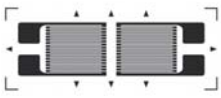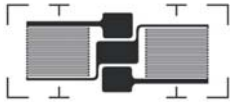| specification	BF series	BA series	ZF series
nominal resistance(Ω)	350,650,1000	350,650,1000	350,650,1000
tolerance of resistance	<±0.1%	<±0.1%	<±0.1%
gauge factor	2.00~2.20	1.86~2.20	1.86~2.40
gauge factor resistance	<±1%	<±1%	<±1%
strain limit	2.0%	2.0%	2.0%
fatigue life	$>10^7$	$>10^7$	$>10^8$
effective modulus compensation	not available	not available	aluminum(23)
metal foil	constantan alloy	karma alloy	constantan alloy
creep compensation	available	available	available
working temperature range	-30~+80℃	-30~+150℃	-30~+80℃
temperature compensation	titanium(9), mild steel(11), stainless steel(16), aluminium(23), magnesium(27), plexiglass(65)		
curing temperature	135℃(curing process) 165℃(post curing process)		
bonding adhesives	H-610	H-610	H-610
soldering pad finishing	C, X,D,F,U,X**, BX**,Q**,G**	X, C,D,F,U,X**, BX**,Q**,G**	C, X,D,F,U,X**, BX**,Q**,G**
standard lead types	1. for strain gauges of BQ, BA, ZF series and patter of KA,BA,CA,BC,CB,CC,FD,AA-W,HA-W, the lead wire is round lead wire & length is 30±3mm. 2. for strain gauges of BE, BF, RNF, RBF series (except HA patter type), the lead wire is flat ribbon wire, and length is 30±3mm(for HA patter type,the wire length is 30±3mm). 3. if the user has special request for wire types and length, please indicate the code of wire type by referring to the ordering system.		

Strain Gauges For Transducers Application

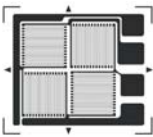| Gauge Pattern	Gauge Model	Gauge Grid(mm) Dimensions(L×M)	Gauge Backing(mm) Dimensions(L×M)	Gauge Creep Code	Grid Distance (mm)
	BF120-3AA(**)N*	2.8×2.0	6.4×3.5	M3,M2,M6,M5,M4	
	BF240-3AA(**)N*	3.2×3.06	7.4×4.4	M3	
	BF175-3AA(**)N*	4.0×2.2	8.0×3.6	M3	
	BF(BA)200-4AA(**)	2.8×2.0	6.4×3.5		
	BF(BA)200-6AA(**)	6.0×2.3	10.7×4.8		
	ZF(BA)300-1AA(**)	1.1×1.3	3.6×2.2		
	BF(BA)300-3AA(**)	2.9×1.8	5.5×2.5		
	BF(BA)350-1AA(**)N*	1.5×2.5	4.5×3.5	M6,M4,M3,M2,M1,O1, O2,O3,O4,O5,O6	
	BF(BA)350-2AA-A(**)	2.4×3.0	4.9×4.0		
	ZF350-2AA(**)N*	1.9×2.8	5.6×3.9	O5,O4,O2,M3,M2,M1,M5,M4	
	BF(BA)350-2AA-P(**)N*	2.0×2.4	5.0×3.5	M4,O1,O2,O3,O4,O5,O6	
	BF(BA)350-2AA(**)N* ZF1000-2AA(**)N*	2.5×3.3	6.5×4.5	M9,M8,M7,M6,M5,M4,M3,M2 M1,O1,O2,O3,O4,O5,O6	
	BF700-3AA(**)T*	3.2×3.06	7.4×4.4		
	ZF1000-3AA-B(**)N* ZF350-3AA-B(**)N*	3.0×3.1	14.3×4.5	M8,M6,M7,M6,O1,M5, O5,M4,O6,O2,O3	
	BF350-3AA-A(**)N*	3.2×1.57	6.9×3.1	M3,M2	
	BF(BA)350-3AA(**)N* ZF1000-3AA(**)N*	3.2×3.1 / 3.2×3.2	7.4×4.4 / 7.4×4.5	M9,M8,M7,M6,M5,M4,M3,M2, M1,M0,O1,O2,O3,O4,O5	
	ZF350-3AA(**)N*	3.1×2.62	7.4×4.0	O4,O2,M2,M7,M1,M6,O1,M5,M4	
	BF(BA)350-4AA(**)N* ZF1000-4AA(**)N*	3.8×2.7	8.2×4.2	M9,M8,M7,M6,M5,M4,M3,M2, M1,O1,O2,O3,O4,O5,O6	
	ZF1500-3AA(**)N*	3.2×3.16	7.4×4.5	O4,M3	
	BF(BA)350-5AA(**)N* ZF1000-5AA(**)N*	5.0×2.9	9.3×4.5		
	BF(BA)350-6AA(**)	6.1×3.1	10.4×5.4		
	BF(BA)500-4AA(**)	4.0×3.3	7.9×4.6		
	BF(BA)600-4AA(**)	4.2×4.0	8.6×5.8		
	BF(BA)650-4AA(**)	4.0×4.4	8.6×6.0		
	BF(BA)650-5AA(**)	5.0×3.9	9.0×5.6		
	BF(BA)650-6AA(**)	5.8×4.4	10.4×6.4		
	ZF1000-1.5AA(**)T*	1.5×4.0	4.9×5.2	O6	
	ZF1000-1.5AA-A(**)N*	1.5×2.5	4.5×3.1	O6	
	BF1000-2AA(**)N*	2.2×4.6	5.8×5.8	M4,M2,O5,O6	
	ZF1000-2AA-A(**)T*	2.1×3.3	5.8×4.5	O6	
	BF(BA)1000-3AA(**)T*	3.0×5.3	6.7×6.5	M6,M5,M3,M2,M1,O2,O3,O5	
	BF(BA)1000-4AA(**)N*	4.0×4.3	7.7×5.5	M6,M5,M3,M2,M1,O2,O3,O5	
	BF(BA)1000-6AA(**)	6.0×4.0	9.9×5.4		
	ZF2000-2AA(**)N*	2.0×3.0	5.6×4.5	O5	
	ZF2000-2AA-A(**)T*	2.1×4.2	5.4×5.2	O5	
	ZF2000-3AA(**)T*	3.2×4.0	7.4×5.3	O4	
	ZF2500-3AA(**)N*	3.2×3.2	7.4×4.5	M4,M3,M2,M1,O1,O2,O3 O4,O5,O6	
	ZF3000-5AA(**)N*	5.2×4.0	8.7×5.2	M2	
	ZF3000-6AA(**)T*	6.1×3.9	9.8×5.2	O4	
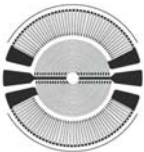
Strain Gauges For Transducers Application

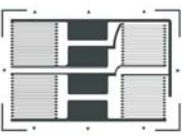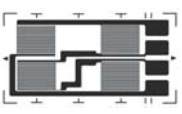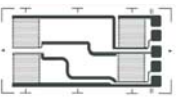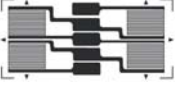| Gauge Pattern	Gauge Model	Gauge Grid(mm) Dimensions(L×M)	Gauge Backing(mm) Dimensions(L×M)	Gauge Creep Code	Grid Distance (mm)
	BF(BA)350-2HA-D(**)	2.0×3.8	8.8×5.6		
	BF(BA)350-3HA-D(**)N*	3.0×5.2	8.8×6.8	M3,M1,O2,O4,O6	
	BF(BA)350-4HA-D(**)N*	4.0×6.5	6.9×8.2		
	ZF700-4HA(**)T*	3.8×6.1	7.5×7.5	O2	
	BF350-2HA-E(**)	2.0×3.8	8.8×5.6		
	BF(BA)350-3HA-E(**)N*	3.0×5.2	8.8×6.8	M3,M1,O2,O4,O6	
	BF(BA)350-4HA-E(**)N*	4.0×6.5	6.9×8.2		
	BF(BA)350-6HA-E(**)	6.0×10.0	11.0×10.5	O2	
	ZF700-4HA-E(**)T*	3.8×6.1	7.5×7.5		
	BF(BA)350-2HA(**)N*	2.0×3.7	9.0×5.6		
	BF(BA)350-3HA(**)N*	3.1×5.5	9.4×6.7		
	ZF1000-3HA(**)N*	3.1×5.5	9.4×6.7	M3,M1,O1,O2,O4,O6	
	BF(BA)350-4HA(**)N*	3.8×6.0	9.0×7.8		
	ZF1000-4HA(**)N*	3.8×6.0	9.0×7.8		
	BF(BA)350-6HA(**)	5.8×9.1	10.5×10.8		
	BF1000-3HA(**)N*	3.0×6.2	9.7×6.2	M3,M1,O2,O3	
	BF(BA)350-2HA-A(**)N*	2.0×3.7	9.0×5.6		
	BF(BA)350-3HA-A(**)N* ZF1000-3HA-A(**)N*	3.1×5.5	9.4×6.7		
	BF350-4HA-A(**)N*	3.8×6.0	9.0×7.8	M3,M2,M1,O1,O2,O4,O6	
	ZF1000-4HA-A(**)N*	3.8×6.0	9.0×7.8		
	BF(BA)350-6HA-A(**)	5.8×9.1	10.5×10.8		
	BF350-2HA-B(**)N*	2.0×3.7	9.5×5.6		
	BF350-3HA-B(**)N*	3.0×5.5	9.4×6.7		
	BF350-5HA-B(**)N*	4.7×8.1	15.7×9.6	M1	
	BF350-2HA-C(**)N*	2.0×4.9	7.2×6.3	M1,O4,O2,O6	
	BF350-3HA-C(**)N*	3.0×6.5	9.4×7.7	M3,M2,M1,O1,O2,O4	
	BF1000-3HA-C(**)N*	3.0×6.6	10.7×7.8		
	BF60-3AB(**)T*	3.0×3.0	8.2×5.1	O2	
	BF175-2AB(**)T*	2.0×2.0	6.7×3.7	O2	
	BF175-2AB	3.0×3.0	8.2×5.1	M3	
	BF(BA)350-3AB(**)	4.2×4.0	8.2×5.1		
	ZF1000-3AB(**)	4.2×4.0	8.2×5.1		
	BF(BA)350-4AB(**)	5.6×4.4	9.1×5.8		
	ZF1000-4AB(**)	5.6×4.4	9.1×5.8		
	BF(BA)350-6AB-(**)	6.0×6.0	12.0×8.3		
	BF(BA)350-2FB(**)	2.0×2.8	6.4×7.6		
	BF(BA)350-3FB(**)N*	3.2×2.8	7.4×7.4	M4,O1,O2	
	BF(BA)350-3FB(**)	2.9×2.6	7.4×7.2		
	BF(BA)350-4FB(**)	4.0×2.4	8.2×6.8		
	BF(BA)350-6FB(**)	5.2×4.0	9.8×7.3		
	BF350-3AB-C(**)	3.0×3.0	8.2×5.1	O5	

Strain Gauges For Transducers Application

Gauge Pattern	Gauge Model	Gauge Grid(mm) Dimensions(L×M)	Gauge Backing(mm) Dimensions(L×M)	Gauge Creep Code	Grid Distance (mm)
	BF(BA)350-2BB(**)	2.2×2.8	8.0×6.0		
	BF(BA)350-3BB(**)	3.0×3.4	8.6×6.6		
	ZF1000-3BB(**)	3.0×3.4	8.6×6.6		
	BF(BA)350-4BB(**)	4.0×4.1	9.7×7.7		
	BF(BA)350-6BB(**)	5.8×6.5	14.4×10.0		
	BF(BA)600-4BB(**)	3.9×4.1	9.7×9.7		
	BF(BA)650-4BB(**)	4.0×4.5	7.9×10.3		
	BF(BA)350-2BB-A(**)	2.1×2.6	6.9×5.9		
	ZF350-2BB-A(**)	1.8×2.2	5.4×6.4		
	BF(BA)350-3BB-A(**)	3.0×3.4	9.8×6.8		
	ZF1000-3BB-A(**)	3.0×3.4	9.8×6.8		
	BF(BA)350-4BB-A(**)	4.0×4.2	10.0×7.8		
	BF(BA)350-6BB-A(**)	6.0×6.1	14.4×10.0		
	BF(BA)600-5BB-A(**)	4.9×3.2	9.6×9.8	O2	
	BF(BA)700-5BB-A(**)	4.9×3.2	9.6×9.8	O2	
	BF(BA)350-2GB(**)	2.1×3.0	10.8×4.4		
	BF(BA)350-3GB(**)	3.1×2.8	12.4×4.4		
	BF(BA)350-4GB(**)	4.0×3.7	16.8×5.8		
	BF(BA)350-3GB-AL0(**)	2.9×3.0	15.4×4.1		
	BF(BA)500-2GB-AL6(**)	2.1×5.0	9.8×6.0		
	ZF1000-3GB-AL0(**)	3.3×3.0	15.4×4.4		
	BF(BA)350-1GB(**)N*	1.5×2.5	13.8×3.8	M4,M3,M2,M1,O1,O2	10.5
	ZF350-1GB-AL*-M23-N*	1.5×3.0	(L1+3.0)×4.2	M4,M2,O1,O2	6.8,8.0
	BF(BA)350-2GB-A(**)	2.0×3.0	10.8×4.4	M4,M2,O1,O2	7.0
	BF(BA)750-3GB-AL*(**)N*	3.0×3.5	(L1+4.8)×4.3	M4,O2	10.5,12.0 14.0
	ZF1000-1.5GB-AL9(*)-T(**)	1.5×4.0	12.0×5.2	O3,O4	
	ZF1000-1.6GB-AL0-M23-N*	1.6×3.9	14.0×5.2	M4,M2,O1,O2,O4	10.5
	ZF1000-2GB-AL0(**)T*	2.5×3.3	14.7×4.5	O3,O4	
	ZF1000-2GB-AL6(**)T*	2.0×2.8	9.4×3.8	M4,O1,O2,O4	6.0
	BF500-2GB-BL8-T0	2.1×5.3	11.3×8.3		8.0
	BF500-3GB(**)N*	3.0×4.1	12.0×5.4	M2	7.0
	ZF1000-2GB-BL6-M23-N*	2.1×4.1	9.7×5.5	O1,O2,O5	6.0
	BF1000-3GB-BL7(**)-N*	3.0×5.5	11.6×6.5		7.0
	ZF1000-2GB-BL7-M23-N6	2.1×4.1	10.7×5.5		7.0
	ZF2000-2GB-BL7-T0	2.1×5.4	10.8×6.4		7.0
	BF350-(9)KA(**)	Ø9.0	Ø10.0		
	BF350-(10)KA(**)	Ø9.0	Ø10.0		
	ZF1000-(10)KA(**)	Ø9.0	Ø10.0		
	BF350-(15)KA(**)	Ø14.0	Ø15.0		
	ZF1000-(15)KA(**)	Ø14.0	Ø15.0		
	BF350-(20)KA(**)	Ø19.0	Ø20.0		
	ZF1000-(20)AA(**)	Ø19.0	Ø20.0		

Strain Gauges For Transducers Application

Gauge Pattern	Gauge Model	Gauge Grid(mm) Dimensions(L×M)	Gauge Backing(mm) Dimensions(L×M)	Gauge Creep Code	Grid Distance (mm)
	ZF350-(20)KA(**)	Ø19.0	Ø20.0		
	ZF1000-(7)KA(**)	Ø7.0	Ø9.9		
	ZF1000-(13)KA(**)	Ø12.0	Ø13.0		
	ZF1000-(13)KA(**)-D	Ø9.4	Ø13.0		
	ZF1000-(14)KA(**)	Ø13.0	Ø14.0		
	ZF1000-(14)KA(**)-D	Ø12.8	Ø14.0		
	ZF1650-(13)KA(11)-D	Ø9.8	Ø13.0		
	ZF2000-(14)KA(11)-D	Ø13.6	Ø14.0		
	ZF2000-(17)KA(**)	Ø16.8	Ø17.0		
	ZF1500-(10)KA(**)	Ø9.0	Ø10.0		
	ZF1500-(11)KA(**)	Ø9.0	Ø11.0		
	ZF2000-(18)KA(**)	Ø17.8	Ø18.0		
	ZF350-(6)KA-B(**)	Ø5.3	Ø6.0		
	ZF1000-(10)-B(**)	Ø9.0	Ø10.0		
	ZF500-(6)KA-B(**)	Ø5.3	Ø6.0		
	ZF2000-(12)KA-B(**)	Ø11.8	Ø12.0		
	ZF1500-(16)KA-C(**)	Ø13.5	Ø16.0		
	ZF350-(20)KA-C(**)	Ø19.0	Ø20.0		
	ZF1000-(20)KA-C(**)	Ø19.0	Ø20.0		
	BF350-(20)KA-C(**)	Ø19.0	Ø20.0		
	ZF2000-(13-B16)KA-C(**)	Ø13.5	Ø16.0		
	BF350-2EB-B(**)	2.3×2.7	8.6×7.4		
	ZF1000-2EB-B(**)	2.3×2.7	8.6×7.4		
	ZF300-2EB(**)	1.8×2.2	8.5×7.3		
	BF350-2EB(**)	2.3×2.7	8.6×7.1		
	ZF1000-2EB(**)	2.3×2.7	8.6×7.1		
	BF350-1FG-BL0(**)-T*	1.5×2.8	13.5×6.2		10.5
	ZF350-1FG-BL*M23-N*	1.5×2.3	(L1+3.8)×6.2		6.0
	ZF1000-1.5FG-BL0-T*	1.5×2.8	14.1×6.9		10.5
	ZF1000-2FG-BL*-M23-N*	2.1×2.8	(L1+4.3)×6.9	M4,M3,M2,M1,O1,O2, O3,O4,O5,O6	10.5
	BF350-3FG-BL0(**)-T*	3.1×2.8	15.3×6.8		6.0,10.5
	ZF1000-3FG-BL0-M23-T*	3.1×2.8	15.3×6.8		10.5
	ZF2000-2FG-BL0-M23-T*	2.0×3.3	14.6×7.8		10.5
	ZF350-1FG-L0-(**)-T*	1.5×2.4	14.4×6.4		10.5
	BF350-2FG-L0-(**)-T*	2.0×2.7	14.6×6.9	M4,M3,M2,M1,O1,O2, O3,O4,O5,O6	10.5
	ZF350-2FG-L*-(**)-T*	2.0×2.5	(L1+4.5)×6.4		7.0,8.8 10.5
	ZF1000-3FG-L*-M(**)-N*	3.0×2.5	(L1+7.1)×6.6		10.5,12.0
	BF350-3FG-AL4(**)-N*	3.0×2.1	20.5×6.8	M2,O5	14.0
	ZF1000-3FG-AL4(**)-N*	3.0×2.1	20.5×6.8	M2,O5	14.0

Strain Gauges For Transducers Application

Gauge Pattern	Gauge Model	Gauge Grid(mm) Dimensions(L×M)	Gauge Backing(mm) Dimensions(L×M)	Gauge Creep Code	Grid Distance (mm)
	BF350-3FG-CL0(**)-T*	3.1×2.6	15.4×7.0	O1,O3,O4	10.5
	ZF1000-3FG-CL0(**)-T*	3.1×2.6	15.4×7.0	O1,O3,O4	10.5
	ZF350-1FG-CL*-M(**)-N*	1.5×2.3	(L1+3.1)×6.2		6.8,10.5
	ZF1000-(13)KA(**)-D	Ø9.4	Ø13.0		

explanation：

1. the code "N∗, T∗" in gauge part number is creep code，different code for different creep.

2. the code "L∗" is grid center distance code，for example，"L10.5" means the grid center distance is 10. 5mm, and "L6" means the grid center distance is 6. 0mm.

3. For gauge part number like "BF(BA)350-3AA(**)", this stands for two series strain gauges,one is "BF350-3AA(**)", another is "BA350−3AA(**)".

4. For encapsulated strain gauges with parttern types of"HA−D""HA−E", we only provide strain gauges with lead wires.

5. For strain gauges with pattern type of "KA":

if nominal resistance=350Ω, then resistance range: nominal value Ω, the difference in resistance is ≤ 0. 8Ω between any two grids for one strain gauge.

if nominal resistance=1000Ω，then resistance range: nominal value Ω, the difference in resistance is≤ 1. 0Ω between any two grids for one strain gauge.

if nominal resistance≥1500Ω时，then resistance range：nominal value Ω, the difference in resistance is≤0. 1% of nominal value.