

SmartPlugs

The robust, easy to use **SmartPlug** range is designed to give the operator greater speed of use, unmatched measuring accuracy and superb repeatability, especially in harsh shop - floor environments. Advanced hand held ergonomics allied to an ingenious mechanical / electronic system render SmartPlugs the easiest to operate Bowers bore gauging system to date. The flexible nature of Bowers SmartPlugs range means that they can be supplied fitted with easy to read electronic indicators (ideal for automatic data collection), conventional analogue indicators, or transducer probes linked to remote digital readout units.

WiFi

see p251 for wireless options

RS232



Features

- Range 6 - 280mm
- Tough, robust construction
- Easy-to-use
- Long life
- High accuracy dedicated plug-gauges
- Flexible, modular
- Hand-held measurement
- Can be incorporated into automated measuring systems (in-series)
- Cost-effective
- Short delivery times
- High visibility display
- Protective indicator shroud (with some indicators)
- All setting rings supplied as standard with UKAS calibration certificates
- Coverplates as standard on all SmartPlugs
- Specials (e.g. blind bore) on request
- Repeatability $\leq 1 \mu\text{m}$
- Setting by means of a setting ring
- Quick and reliable measurement
- 2 - point measurement as standard
- Blind bore available on request
- Depth-stops available
- Extensions available for deeper bores
- Guide chamfer for easy entry into bore
- High durability, long-life plugs and contacts
- Easy to clean
- Plug body coatings: Hard-chrome (standard), T.i.N., Plain steel
- Measuring contacts: Tungsten carbide, (standard), hard-chrome, ruby, ceramic

SmartPlugs

Indicators



Type A
Waterproof MIni
Indicator with Shroud
Preset value maximum
130mm



Type B
Mechanical
Dial Gauge



Type C
Standard Digital
Indicator
also available
with shroud



P10
Transducer
Probe



P2B
Transducer probe

Holders



SMA001M
M6 Holder



SMA002M
M6 Holder



SMA003
M6 - 100mm
Extension



SMA004
M6 Probe
Holder



SMA008
M10 Probe
Holder



SMA007
M10 - 100mm
Extension



SMA006M
M10
Holder



SMA005M
M10
Holder



SMA028
M6 - M10
Adapter



SMPDS00-09
Depth Stop



SMPDS00-09
Depth Stop

SmartPlugs

M6 THREAD RANGE 6 – 20mm
Please state size to be measured



M10 THREAD RANGE 15 – 280mm
Please state size to be measured



Contact Options: Tungsten Carbide (standard), Hard Chrome, Ruby, Ceramic
Plug-Body options: Hard Chrome Plated (standard), Titanium Nitride, Plain Steel

SmartPlugs

SmartPlug Applications & Options



SmartPlug with TiN coated body



SmartPlug with ruby contacts



SmartPlug with ceramic contacts



SmartPlug for blind bore measurement



SmartPlug with depth stop



SmartPlug with extension



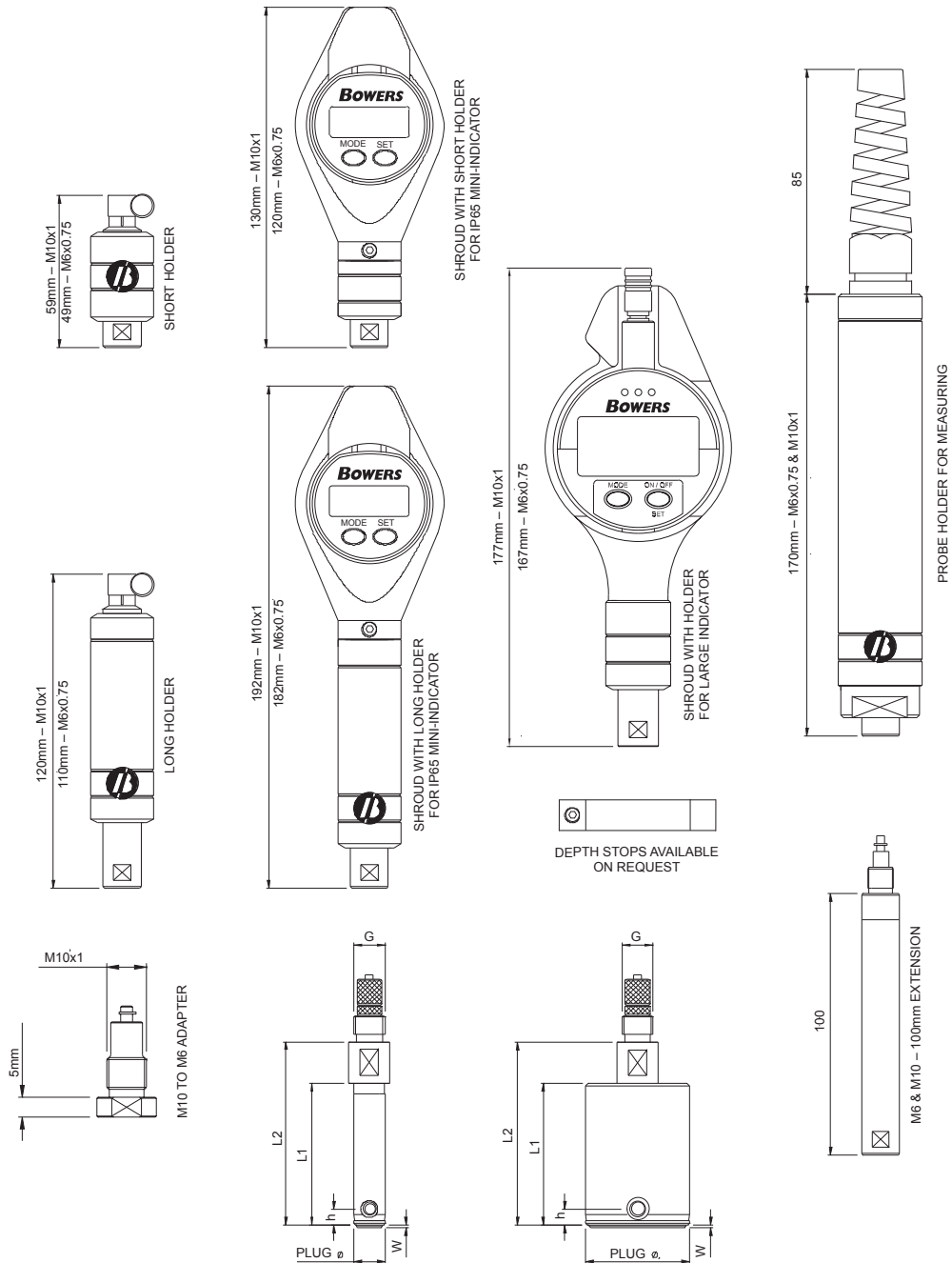
SmartPlug with transducer holder and standalone display



SmartPlug for large diameters (up to 280mm)

SmartPlugs

SmartPlug Technical Detail



SMARTPLUGS

Size (mm)	Range	h	L1	L2	W	G
6 - 7.8*	0.15	3	27	35	0.5	M6x0.75
7.9 - 20	0.15	3	27	35	0.5	M6x0.75
15 - 45	0.2	3.5	28	43.5	1	M10x1
45.1 - 70	0.2	4	28	44	1.5	M10x1
70.1 - 280	0.2	4	35	44	1.5	M10x1

* max measuring depth 27mm between 6 and 7.8mm

SmartPlugs

SMARTPLUGS

SmartPlug Standard	Bore diameters	Connecting thread	Price (£)	
SMP010	>6 - 20mm / 0.236" - 0.787"	M6x0.75	£248.00	I
SMP012	>15 - 25mm / 0.590" - 0.984"	M10x1	£259.50	I
SMP014	>25 - 35mm / 0.984" - 1.378"	M10x1	£276.00	I
SMP016	>35 - 45mm / 1.378" - 1.772"	M10x1	£286.50	I
SMP018	>45 - 60mm / 1.772" - 2.362"	M10x1	£319.00	I
SMP020	>60 - 80mm / 2.362" - 3.150"	M10x1	£353.00	I
SMP022	>80 - 100mm / 3.150" - 3.937"	M10x1	£397.00	I
SMP024	>100 - 125mm / 3.937" - 4.921"	M10x1	£474.50	I
SMP026	>125 - 150mm / 4.921" - 5.906"	M10x1	£595.50	I
SMP028	>150 - 175mm / 5.906" - 6.890"	M10x1	£700.50	I
SMP030	>175 - 200mm / 6.890" - 7.874"	M10x1	£810.50	I
SMP032	>200 - 225mm / 7.874" - 8.858"	M10x1	£871.50	I
SMP034	>225 - 250mm / 8.858" - 9.843"	M10x1	£910.50	I
SMP036	>250 - 280mm / 9.843" - 11.025"	M10x1	£953.50	I

SmartPlug Blind-bore

SMP010BB	>6 - 20mm / 0.236" - 0.787"	M6x0.75	£298.00	I
SMP012BB	>15 - 25mm / 0.590" - 0.984"	M10x1	£304.00	I
SMP014BB	>25 - 35mm / 0.984" - 1.378"	M10x1	£323.50	I
SMP016BB	>35 - 45mm / 1.378" - 1.772"	M10x1	£337.00	I
SMP018BB	>45 - 60mm / 1.772" - 2.362"	M10x1	£370.50	I
SMP020BB	>60 - 80mm / 2.362" - 3.150"	M10x1	£404.50	I
SMP022BB	>80 - 100mm / 3.150" - 3.937"	M10x1	£446.50	I
SMP024BB	>100 - 125mm / 3.937" - 4.921"	M10x1	£474.50	I
SMP026BB	>125 - 150mm / 4.921" - 5.906"	M10x1	£555.00	I

Sizes above 150mm on request

SMARTPLUG ACCESSORIES

Accessories – M6 thread		Price (£)	
SMA001M	M6 Holder short 8mm stem	£50.50	C
SMA002M	M6 Holder long 8mm stem	£73.50	C
SMA003	M6 100mm extension	£40.00	C
SMA004	M6 Probe holder 8mm stem	£114.50	C
SMA009M	*Type A Mini indicator with shroud & M6 short holder 8mm stem*	£227.50	C
SMA011M	*Type A Mini indicator with shroud & M6 long holder 8mm stem	£252.00	C
SMA013	Type C Indicator with shroud & M6 holder 8mm stem	£432.50	C
SMA028	M6-M10 Adapter (to use M10 holders with M6 plugs)	£17.00	C

Accessories – M10 thread			
SMA005M	M10 Holder short 8mm	£50.50	C
SMA006M	M10 Holder long 8mm stem	£73.50	C
SMA007	M10 100mm extension	£40.00	C
SMA008	M10 Probe holder 8mm stem	£114.50	C
SMA015M	*Type A Mini indicator with shroud & M10 short holder 8mm stem	£227.50	C
SMA017M	*Type A Mini indicator with shroud & M10 long holder 8mm stem	£252.00	C
SMA019	Type C Indicator with shroud & M10 holder 8mm stem	£432.50	C

Indicating Units

SMA021	*Type 'A' digital Mini indicator. Res. 0.001mm	£217.50	C
SMA022	Type 'B' mechanical dial-gauge. 0.001mm graduation	£165.50	C
SMA023	Type 'C' digital indicator. Res. 0.001mm	£360.00	C
30-900-0994	Transducer probe P2B	£270.50	I
30-804-1050	D50S digital readout 0.001 / 0.0001mm Res.	£524.00	I
30-804-1080	D80S digital readout unit 0.001 / 0.0001mm Res.	EPOA	
30-804-1101	D100S digital readout unit 0.001 / 0.0001mm Res.	EPOA	

* Type A Mini indicators preset values up to 130mm only.

TiN coated body

Ceramic contacts

Ruby contacts

WiFi

see p251 for wireless options

RS232



SmartPlug Setting Rings

- Complete with UKAS Calibration Certificates

SETTING RINGS. GRADE NOMINAL

(+/- 0.005mm and marked to actual size)

Code No		Price (£)	
SPR002N	1.5 - 2mm	£153.50	
SPR003N	2 - 3mm	£119.50	
SPR004N	3 - 4mm	£103.00	
SPR005N	4 - 5mm	£94.50	
SPR006N	5 - 6mm	£94.50	
SPR010N	6 - 10mm	£94.50	
SPR020N	10 - 20mm	£88.00	
SPR025N	20 - 25mm	£89.50	
SPR030N	25 - 30mm	£94.50	
SPR040N	30 - 40mm	£98.50	
SPR050N	40 - 50mm	£103.00	
SPR060N	50 - 60mm	£118.50	
SPR070N	60 - 70mm	£151.00	
SPR080N	70 - 80mm	£158.50	
SPR090N	80 - 90mm	£168.00	
SPR100N	90 - 100mm	£173.50	
SPR115N	100 - 115mm	£226.00	
SPR130N	115 - 130mm	£243.50	
SPR145N	130 - 145mm	£291.00	
SPR160N	145 - 160mm	£320.50	
SPR170N	160 - 170mm	£342.50	
SPR180N	170 - 180mm	£403.00	
SPR190N	180 - 190mm	£483.00	
SPR200N	190 - 200mm	£530.50	
SPR210N	200 - 210mm	£672.00	
SPR220N	210 - 220mm	£672.00	
SPR230N	220 - 230mm	£763.50	
SPR240N	230 - 240mm	£763.50	
SPR250N	240 - 250mm	£763.50	
SPR260N	250 - 260mm	£872.50	
SPR270N	260 - 270mm	£872.50	
SPR280N	270 - 280mm	£872.50	

SETTING RINGS. GRADE "X"

Code No		Price (£)	
SPR002X	1.5 - 2mm	£157.50	
SPR003X	2 - 3mm	£123.00	
SPR004X	3 - 4mm	£105.00	
SPR005X	4 - 5mm	£96.50	
SPR006X	5 - 6mm	£96.50	
SPR010X	6 - 10mm	£96.50	
SPR020X	10 - 20mm	£90.50	
SPR025X	20 - 25mm	£91.50	
SPR030X	25 - 30mm	£96.50	
SPR040X	30 - 40mm	£101.00	
SPR050X	40 - 50mm	£105.00	
SPR060X	50 - 60mm	£122.00	
SPR070X	60 - 70mm	£155.50	
SPR080X	70 - 80mm	£163.00	
SPR090X	80 - 90mm	£173.50	
SPR100X	90 - 100mm	£178.50	
SPR115X	100 - 115mm	£232.00	
SPR130X	115 - 130mm	£250.00	
SPR145X	130 - 145mm	£299.50	
SPR160X	145 - 160mm	£329.50	
SPR170X	160 - 170mm	£353.00	
SPR180X	170 - 180mm	£415.00	
SPR190X	180 - 190mm	£497.50	
SPR200X	190 - 200mm	£546.00	
SPR210X	200 - 210mm	POA	
SPR220X	210 - 220mm	POA	
SPR230X	220 - 230mm	POA	
SPR240X	230 - 240mm	POA	
SPR250X	240 - 250mm	POA	
SPR260X	250 - 260mm	POA	
SPR270X	260 - 270mm	POA	
SPR280X	270 - 280mm	POA	

SETTING RINGS. GRADE "XX"

Code No		Price (£)	
SPR002XX	1.5 - 2mm	£197.50	
SPR003XX	2 - 3mm	£155.50	
SPR004XX	3 - 4mm	£132.50	
SPR005XX	4 - 5mm	£121.00	
SPR006XX	5 - 6mm	£121.00	
SPR010XX	6 - 10mm	£119.50	
SPR020XX	10 - 20mm	£113.50	
SPR025XX	20 - 25mm	£115.50	
SPR030XX	25 - 30mm	£122.00	
SPR040XX	30 - 40mm	£128.00	
SPR050XX	40 - 50mm	£121.00	
SPR060XX	50 - 60mm	£156.50	
SPR070XX	60 - 70mm	£198.50	
SPR080XX	70 - 80mm	£208.00	
SPR090XX	80 - 90mm	£221.50	
SPR100XX	90 - 100mm	£242.50	
SPR115XX	100 - 115mm	£297.00	
SPR130XX	115 - 130mm	£327.50	
SPR145XX	130 - 145mm	£380.00	
SPR160XX	145 - 160mm	£419.00	
SPR170XX	160 - 170mm	£453.50	
SPR180XX	170 - 180mm	£571.00	
SPR190XX	180 - 190mm	£637.50	
SPR200XX	190 - 200mm	£700.50	
SPR210XX	200 - 210mm	POA	
SPR220XX	210 - 220mm	POA	
SPR230XX	220 - 230mm	POA	
SPR240XX	230 - 240mm	POA	
SPR250XX	240 - 250mm	POA	
SPR260XX	250 - 260mm	POA	
SPR270XX	260 - 270mm	POA	
SPR280XX	270 - 280mm	POA	



DEPTH STOPS

Code No	Diameter range	Price (£)	
SMPDS00	below 6mm	£29.50	
SMPDS01	6 - 8.5mm	£29.50	
SMPDS02	8.5 - 13mm	£29.50	
SMPDS03	13 - 17.5mm	£41.00	
SMPDS04	17.5 - 25mm	£47.50	
SMPDS05	25 - 32.5mm	£47.50	
SMPDS06	32.5 - 40mm	£47.50	
SMPDS07	40 - 47.5mm	£47.50	
SMPDS08	47.5 - 55mm	£95.50	
SMPDS09	55 - 62.5mm	£95.50	
SMPDS10	62.5 - 70mm	£95.50	
SMPDS11	70 - 77.5mm	£95.50	
SMPDS12	77.5 - 85mm	£95.50	
SMPDS13	85 - 92.5mm	£95.50	
SMPDS14	92.5 - 100mm	£95.50	