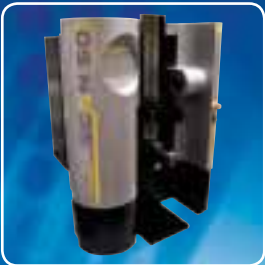




**BOWERS GROUP**

THE ESSENTIAL METROLOGY CATALOGUE **16/17**



Partners in Precision

Levelling

## ISO 9001:2015 – Quality Guaranteed

In 2016 Bowers achieved the latest **ISO 9001:2015** Quality Management Systems Standard at its Bradford manufacturing facility. This prestigious certification is a true testament to Bowers' dedication to the highest levels of quality management and customer satisfaction. ISO 9001:2015 is the newest update to the quality management system standard, which provides an integrated approach to quality management and continual improvement. This, in conjunction with Bowers' existing UKAS accreditation to ISO/IEC 17025:2005, ensures its customers can have complete confidence that the Bowers range of products is designed and manufactured to the highest standard.





**BOWERS GROUP**

## **Bowers Group**

As a leading supplier of quality metrology instruments to organisations throughout the world, Bowers Group has developed into a respected global leader in the field of measurement. Our first-class reputation has been built on the continuing Group ethos of striving for excellence in both the comprehensive range of products that we supply and the many quality services that we provide to our customers. The Group's aim is to build on its hard-won reputation and continue to exceed customers' expectations.

Reflecting the all-inclusive nature of our products and services, Bowers UK provides British industry with the widest choice of cost effective, quality measuring instruments currently available. Supplementing Bowers' own famous range of gauges, our enviable 'sole UK agent' status means that we can offer superior products from many pre-eminent metrology companies, such as Trimos, Sylvac, Gagemaker, Innovatest, ACCRETECH and Wyler. Bowers' diverse range of quality measuring instruments allows us to offer cost effective solutions to UK industries' measuring challenges. Helping in the decision making process, our network of skilled Sales Engineers is happy to give on-site demonstrations of our full product range.



## **Baty International**

Baty International is one of the world's leading manufacturers of Optical Profile Projectors, Co-ordinate Measuring Systems and Gauging Products. Baty's product range includes two dimensional (profile measuring) equipment and full 3 dimensional (coordinate measuring) systems. Baty also services and calibrates contact and non contact dimensional measuring equipment. Baty products are for industrial, manufacturing and professional use, on the shop-floor, in tool rooms, and in other areas where precision measurement is critical.



## **Moore & Wright**

Founded in 1906 by innovative young engineer Frank Moore, Moore & Wright has been designing, manufacturing and supplying precision measuring equipment to global industry for over 100 years. With roots fixed firmly in Sheffield, the company began by manufacturing a range of calipers, screwdrivers, punches and other engineer's tools.

Now part of Bowers Group, Moore & Wright continues its commitment to supplying industry with high quality, affordable products. Its ongoing pledge to research and development ensures that Moore & Wright remains at the forefront of global innovation.



## **CV Instruments**

With the largest selection of portable and bench hardness testers currently available within the UK, the CV arm of Bowers Group has evolved into an all-inclusive material testing quality instrument supplier, with cost effective solutions to coating thickness, surface finish and many other disciplines now available.

**Bowers is also exclusive UK reseller for the following leading metrology brands:**



EUROPE





# Digital Mini-Mag Level 570 Series

## Features

- Measuring range 360° (4 x 90°)
- Embedded magnets on two sides
- Resolution 0.05°
- Accuracy +/- 0.2°
- Standard 9V battery
- Dimensions: L60mm x H60mm x W35mm



### DIGITAL MINI-MAG LEVEL

Code No	Description
MW570-01	Mini-Mag Level

# Digital Level 580 Series

## Features

- Precision navigational level sensor
- CNC machined super flat edge
- Heavy duty aluminium alloy body, chrome finish
- Laser accurately extends level capabilities
- Strong magnets on underside
- Measuring: 4x90°
- Resolution: 0.05°
- Battery: standard 9V
- Accuracy ± 0.2°



### DIGITAL LEVEL

Code No	Size	Resolution
MW580-01	150mm / 6"	0.05°
MW580-02	225mm / 9"	0.05°
MW580-03	600mm / 24"	0.05°

## WYLER Bubble Spirit Levels

A wide range of WYLER Bubble Spirit Levels are available, designed to be fitted onto machines and other applications where a clear visual indication of levelling is required.



### Adjustable Micrometer Spirit Level No. 68

Used to measure the flatness of surfaces, inclinations, taper or concentricity. With prismatic base, hardened and ground for measuring shafts and flat surfaces. The micrometer has a knurled knob for setting zero. Height 80mm, length 150mm and sensitivity 0.02mm/m.

Code No	Sensitivity (mm/m)
60-6242	0.02



### Micrometric Spirit Level No. 53

For measurement of irregular plane surfaces. Permits direct reading of the inclination in 0.001" on the scale of the micrometer. Finer displacements are obtainable from the displacement of the bubble. Support at each end means that uneven surfaces are bridged.

Code No	Sensitivity (mm/m)
60-6243	0.02
60-6244	0.05



### Shaft Spirit Level No. A63. Prismatic base. Size 30 x 35mm. Wide viewing slots.

Code No	Size of Base (mm)	Code No	Size of Base (mm)	Code No	Size of Base (mm)	Sensitivity (mm/m)
60-6290	100	60-6292	150	60-6294	200	0.05
60-6290A	100	60-6292A	150	60-6294A	200	0.1
60-6290B	100	60-6292B	150	60-6294B	200	0.3
60-6291	100	60-6293	150	60-6295	200	1.0



### Tubular Spirit Level No. 59. With flat base, 80 x 9 (16mm dia), 100 x 10 (20mm dia), 150 x 10 (20mm dia.) and 200 x 11 ( 22mm dia.)

Code No	Size of Base (mm)	Code No	Size of Base (mm)	Code No	Size of Base (mm)	Code No	Size of Base (mm)	Sensitivity (mm/m)
				60-62109	150	60-62111	200	0.05
60-62105	80	60-62107	100	60-62109A	150	60-62111A	200	0.1
60-62105A	80	60-62107A	100	60-62109B	150	60-62111B	200	0.3
60-62106	80	60-62108	100	60-62110	150	60-62112	200	1.0



### Cross Level No. 78

Code No	Diameter (mm)	Code No	Diameter (mm)	Sensitivity (mm/m)
		60-62167	100	0.02
		60-62168	100	0.05
60-62166	80	60-62169	100	0.1
60-62166A	80	60-62169A	100	0.3



**Circular Level No. 76.** The Cross Spirit Level 76 is specially designed for the simultaneous measuring or levelling of surfaces on machines, apparatus, etc. The main advantage of this spirit level is that the inclination of both axis (X- and Y-axis) is visualised at the same time. This enables a quick levelling of a measuring object in a very easy way.

Code No	Diameter (mm)	Code No	Diameter (mm)	Code No	Diameter (mm)	Code No	Diameter (mm)	Sensitivity (mm/m)
60-62170	40	60-62170A	50	60-62170B	60	60-62170C	80	2.5
		60-62171	50	60-62173	60	60-62175	80	1.0
				60-62172	60	60-62174	80	0.3



Note: Other models available, see [www.wylerag.com](http://www.wylerag.com) for more information

For more information visit [www.machine-dro.co.uk](http://www.machine-dro.co.uk)



## WYLER Spirit Levels - 58S/55S Series

WYLER Conventional Spirit Levels are manufactured to the highest of standards using artificially aged materials. With precise prismatic bases the new "Spirit" branded models offer an especially rigid vial adjustment system.



### Frame Spirit Level No. 58S

With two prismatic and two flat base surfaces for checking horizontal and vertical surfaces, plane or cylindrical.

Magnetic inserts available.



#### LEVEL NO. 58S

Code No	Size of Base (mm)	Code No	Size of Base (mm)	Code No	Size of Base (mm)	Code No	Size of Base (mm)	Code No	Size of Base (mm)	Sensitivity (mm/m)
60-6207	100	60-6212	150	60-6217	200	60-6222	250	60-6227	300	0.02
60-6208	100	60-6213	150	60-6218	200	60-6223	250	60-6228	300	0.05
60-6209	100	60-6214	150	60-6219	200	60-6224	250	60-6229	300	0.1

### Horizontal Spirit Level No. 55S

With prismatic base for checking horizontal surfaces, plane and cylindrical.

Magnetic inserts available.



#### LEVEL SENSITIVITIES

2 seconds	0.0001" in 10" or 0.01mm/m.
4 seconds	0.0002" in 10" or 0.02mm/m.
10 seconds	0.0005" in 10" or 0.05mm/m.
20 seconds	0.001" in 10" or 0.10mm/m.

#### LEVEL NO. 55S

Code No	Size of Base (mm)	Code No	Size of Base (mm)	Code No	Size of Base (mm)	Code No	Size of Base (mm)	Code No	Size of Base (mm)	Code No	Size of Base (mm)	Sensitivity (mm/m)
60-6252	100	60-6257	150	60-6262	200	60-6267	250	60-6272	300	60-6277	500	0.02
60-6253	100	60-6258	150	60-6263	200	60-6268	250	60-6273	300	60-6278	500	0.05
60-6254	100	60-6259	150	60-6264	200	60-6269	250	60-6274	300	60-6279	500	0.1

## Frame Angular Levels

These levels are ideal for checking both horizontal and vertical surfaces. Their prismatic base makes them suitable for both cylindrical and flat surfaces.

### Magnetic Spirit Level No. A48

This level has strong magnetic inserts in its 150mm long vertical base. They provide a positive hold on both flat and cylindrical vertical surfaces.

Magnetic inserts in horizontal base available.

#### MAGNETIC SPIRIT LEVEL NO. A48

Code No	Sensitivity (mm/m)	Size of Base (mm)
60-6201	0.02	150
60-6201B	0.05	150
60-6201C	0.1	150





## WYLER nivelSWISS - Electronic Analogue Level

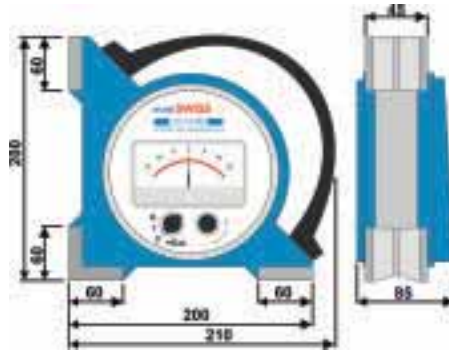
The functional range of WYLER nivelSWISS precision levels employs the accurate inductive pendulum principle. Precision prismatic bases make the range particularly useful for measurement on both plane or cylindrical work pieces, whilst the easy to read analogue display aids ease of use.



### nivelswiss 50W with angular base

Suitable for measuring both horizontal and vertical surfaces.

Code No	Description
60-6164	nivelSWISS 50W with angular base



### nivelswiss 50H with horizontal base

Suitable for measuring only horizontal surfaces. This model can have a choice of screw on granite bases in either 200mm, 250mm or 500mm lengths.

Code No	Description
60-6165	nivelSWISS 50H with horizontal base



The nivelSWISS has two measuring ranges, reversible:

- a  $\pm 0.0075'' / 10''$ ,  $\pm 0.75\text{mm/m}$ ,  $\pm 150$  sec.  
and one division equals  $0.0005''$  in  $10'' / 0.05\text{mm/m} / 10$  sec.
- b  $\pm 0.0015'' / 10''$ ,  $\pm 0.15\text{mm/m}$ ,  $\pm 30$  sec.  
and one division equals  $0.0001''$  in  $10'' / 0.01\text{mm/m} / 2$  sec.

## WYLER nivelSWISS-D - Digital Level

Battery powered electronic inclinometer nivelSWISS-D with digital display. A remarkable stability of the zero-point makes this instrument particularly suitable for long lasting measuring tasks and for adjustment or alignment works on large guideways. The functional range of WYLER nivelSWISS-D precision levels employs the accurate inductive pendulum principle. Precision prismatic bases make the range particularly useful for measurement on both plane or cylindrical work pieces, whilst the easy to read analogue display aids ease of use. The nivelSWISS is mounted in a bold body of carefully treated cast iron.



### WYLER NIVELSWISS-D - DIGITAL LEVEL

Code No	Description
60-6164D	nivelSWISS-D with angular prismatic base
60-6165D	nivelSWISS-D with horizontal base











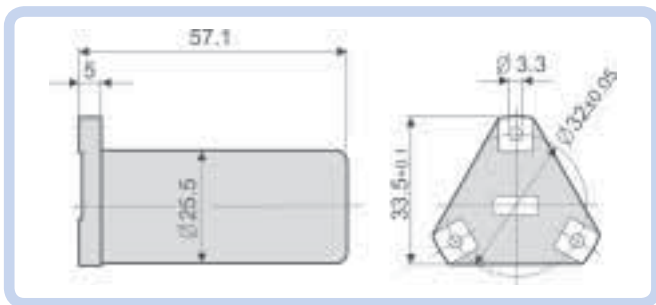
## WYLER Zerotronic - Digital Inclinometer Sensors



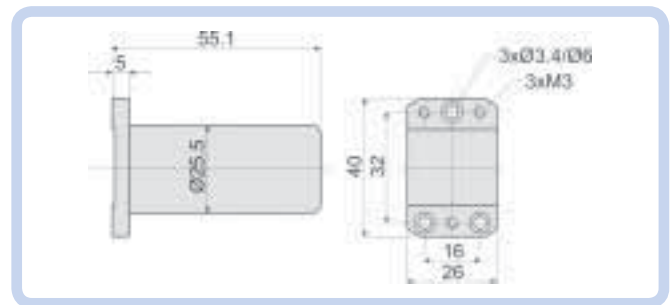
### TECHNICAL SPECIFICATION - ZEROTRONIC SENSOR

		ZEROTRONIC-sensor Type 3	ZEROTRONIC-sensor Type C
Power consumption ZEROTRONIC-sensors		ca. 70 mW	ca. 100 mW
Power supply	Sensor	5 V ± 10 %	5V ± 10 %
External power supply	System T/C	12 ... 48 V	
Digital output		RS485 / asynchr. , 7 DataBits, 2 StopBits, no parity	
	Baudrate (automatic adjustment)	2'400 ... 115'000	9'600 ... 57'600
Analog output PWM		0.5 V ... 2.5 V ... 4.5 V @ 5 V Supply	
Temperature range	Operating	- 40°C to + 85°C	
	Storage	- 55°C to + 95°C	
Net weight sensor		118gr	100gr
Shock resistance		practically indestructible	

### Dimensions Zerotronic Sensor



ZEROTRONIC-sensor with triangular mounting surface



ZEROTRONIC-sensor with rectangular mounting surface

### ZEROTRONIC Type 3

- High resolution, high precision for inclinations up to 30°
- Excellent signal-to-noise ratio
- Excellent repeatability
- Excellent linearity
- Excellent temperature stability

Some typical applications for the ZEROTRONIC Type 3 include those applications in which high precision and high resolution is first priority, and where only small inclinations are measured:

- Adjustment of machines (e.g. pitch and roll)
- Precise adjustment of absolute zero
- Precise measurement of small inclinations in a heavy duty environment; e.g. exposure to outside temperature

### ZEROTRONIC Type C

- Excellent precision for inclinations between 10° and 60°
- Excellent repeatability
- Excellent long-term stability in inclined position
- Excellent linearity
- Excellent temperature stability

Some typical applications for the ZEROTRONIC Type C include:

- Larger inclinations
- Applications in which the sensor remains in inclined position over a longer period of time

### ZEROTRONIC SENSORS

Code No	Description	Range
60-6510	Zerotronic 0.5	Type 3 +/- 0.5°
60-6511	Zerotronic 1	Type 3 +/- 1°
60-6513	Zerotronic 10	Type 3 +/- 10°
60-6514	Zerotronic 30	Type 3 +/- 30°
60-6513C	Zerotronic 10	Type C +/- 10°
60-6514C	Zerotronic 30	Type C +/- 30°
60-6515C	Zerotronic 60	Type C +/- 60°





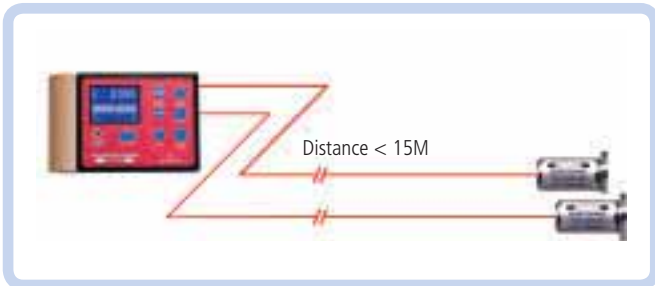
# WYLER Zerotronic - Digital Inclinometer Sensors



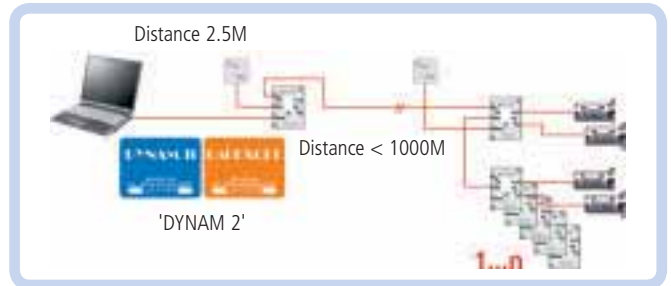
Standard configuration for ZEROTRONIC sensors. The customer can view and record the sensor output signal using their own in-house software.



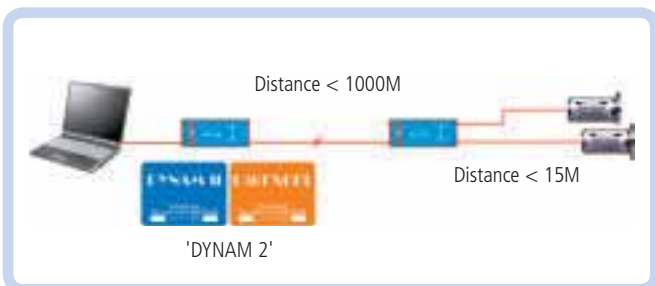
Connection to a PC/laptop through a T/C (Transceiver/Converter)



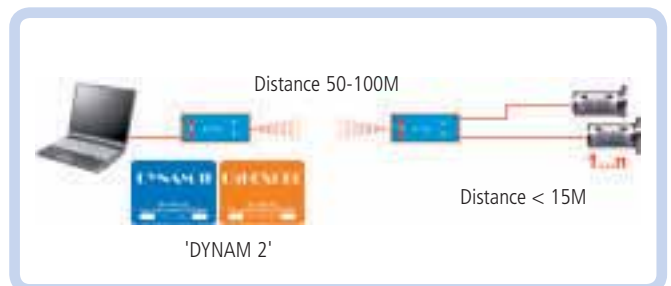
ZEROTRONIC sensors connected to a BlueMETER



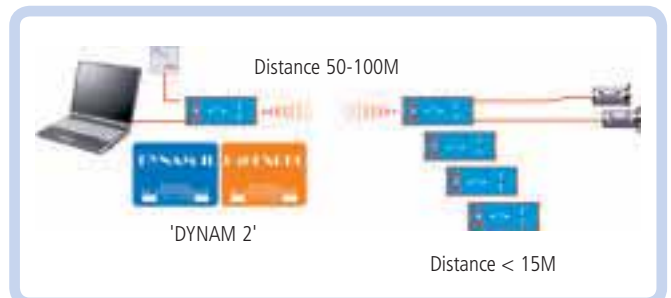
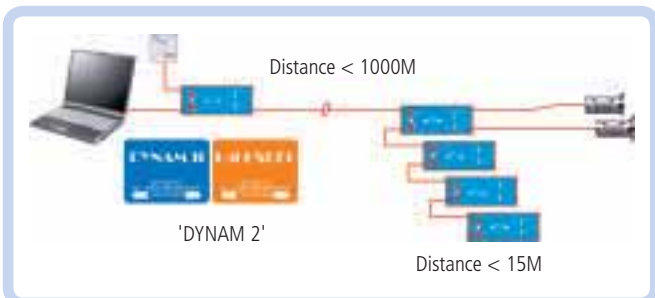
ZEROTRONIC sensors connected to a PC/laptop on RS485-Bus through one or more Transceiver/Converters (T/C). Analysis of measuring results using DYNAM 2 or LabEXCEL software. External power supply via Transceiver/Converter.



Data transmission through cables



Data transmission through a wireless connection



The BlueTC is used as an interface for data transmission through a cable or wireless connection. To each BlueTC up to eight sensors may be connected. In total, the system can handle 64 units. Because every TC also uses one address, a total of 56 sensors can be connected (64 minus 8 BlueTC addresses). Analysis of measuring results utilising LabEXCEL software.



**BOWERS GROUP**



**baty**



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