

## Intrinsically Safe Safety Ohm Meter Type 1681

The 1681 Safety Ohm Meter is a rugged highly portable intrinsically safe instrument for use in Potentially Explosive Atmospheres. The instrument is CE marked and is approved under the Atex Directive 94/9/EC  $\langle \widehat{k} \rangle$  II 2G Ex ib IIC T4 Gb (-20°C  $\leq$  Ta  $\leq$  +40°C) Baseefa 03ATEX0284.

In addition to the measurement of the quality of electrical bonds the tester is ideally suited to continuity testing in equipment with semiconductor devices having low breakdown voltage.





Model Ref.   1681   Battery Life:   1 Year, non operational.   Sh Durs continuous at 20°C.     Tester Body:   Precision sand-cast aluminium alloy case with integral battery compartment.   Sh Durs continuous at 20°C.   Battery Life:   Sh Durs continuous at 20°C.     Tester Weight:   24g Excluding carrying case.   Battery State Check:   Low battery condition annuciator incorporated in the LCD display indicates when approximately 20% of battery lie is consumed.     Depth:   200mm excluding controls. 220mm including range witch.   36 digit LCD incorporating a battery condition annuciator incorporate height 127mm High Rel grade display with wide temperature range fluid.   Test Leads   Standard set of test leads supplied     Page:   0000 to 1999mQ (resolution = 0.01Q) 0000 to 1999MQ (r	SPECIFICATION	NSN 6625-99-950-2497			
Inster Precision sand-cast auminium alloy case with incorrectly. Battery Protection: Series diode protects equipment against incorrectly.   Tester Weight: 2½ Excluding carrying case. Battery compartment. Magnesium content less than 1%. Battery State Check: Low battery condition anunciator incorporated in the LCD display indicates when approximately 90% of battery life is consumed.   Tester Dimensions: 199 x 70mm (front Panel). Battery Condition anunciator incorporating a page swith. Battery condition anunciator incorporated in the LCD display indicates when approximately 90% of battery life is consumed.   Finish: Golden Helow Semi Gloss Enamel BS381C Tint annuciator Character height: 127mm High Rel grade display with wide temperature range fluid. Test Leads Standard set of test leads supplied Calibration Period: Test Leads   Ranges: 0000 to 19999mQ (resolution = 0.01mQ) 0000 to 19999mQ (resolution = 0.01Q) 0000 to 19999Q (resolution = 0.01Q) 0000 to 19999Q (resolution = 0.01Q) 0000 to 1999QQ (resolution = 10Q) 0000 to 1999QQ (resolution = 0.01Q) 0000 to 1999QQ (resolution = 0.01Q) 0000 to 1999QQ (resolution = 10Q) 0000 to 1999QQ (resolution = 0.01Q) 0000 to 1999QQ (resolution = 0.01Q) 0000 to 1999QQ (resolution = 0.01Q) 0000 to 1999QQ (resolution = 10Q) 0000 to 1999QQ (resolution = 0.01Q) 0000 to 10000 to 1999QQ (resolution = 0.01Q) 0000 to 1000 to 19	Model Ref:	1681		Battery Life:	
Tester Weight 2kg bedluding carrying case. incorrectly.   Tester Casing: Precision sand-cast aluminium case with integral battery compartment. Magnesium content less than 1%. Battery State Check: Low battery condition annunciator incorporated in the LCD display indicates when approximately 90% of battery life is consumed.   Depth: 200mm excluding controls 220mm including range switch. Tester Weight: 3k gaptox including carrying case and test leads when approximately 90% of battery life is consumed.   Pinish: Golden Yellow Semi Gloss Enamel BS381C Tint 356 stoved to DEF 1059. Test Leads Standard set of test leads supplied   Gallbartion Comporating a battery condition annunciator. Character height: 12.7mm High Rel grade display with wide temperature range fluid. Standard set of test leads supplied   Ranges: 0000 to 1999mΩ (resolution = 0.01Ω) 0000 to 1999mΩ (resolution = 0.01Ω) 0000 to 1999mΩ (resolution = 10Ω) 10000 to 1999mΩ (resolution = 10Ω) 20000 to 1999mΩ (resolution = 10Ω) 2000	Tester Body:			Battery Protection:	Series diode protects equipment against
Tester Casing:Precision sand-cast aluminium case with integral battery compartment. Magnesium content less than 1%.Battery State Check:Low battery condition annunciator incorporated in the LCD display indicates when approximately 90% of battery tile is consumed.Tester Dimensions:190 x 70mm (front Panel). 20mm excluding controls 220mm including range switch.Battery State Check:Low battery condition annunciator incorporated in the LCD display indicates when approximately 90% of battery tile is consumed.Finish:Golden Yellow Semi Gloss Fnamel BS381C Tint 356 stoxed to DEF 1059.Test LeadsStandard set of test leads supplied Calibration Period:Display:3.3 digit LCD incorporating a battery condition annunciator Character height: L27mm High Rel grade display with wide temperature range fluidTest LeadsStandard set of test leads suppliedRanges:0000 to 1999Q (resolution = 0.001Q) 0000 to 1999Q (resolution = 0.01Q) 0000 to 1999Q (resolution = 0.02) 0000 to 1999Q (resolution = 1.02) 0000 to 1999Q (resolution = 0.01Q) 0000 to 1999Q (re	Tester Weight:	2kg Excluding carrying case.			
Dept:200mm excluding controls 220mm including range switch.Display: </td <td>Tester Casing:</td> <td colspan="2">integral battery compartment. Magnesium</td> <td>Battery State Check:</td> <td>Low battery condition annunciator incorporated in the LCD display indicates when approximately</td>	Tester Casing:	integral battery compartment. Magnesium		Battery State Check:	Low battery condition annunciator incorporated in the LCD display indicates when approximately
Dept:200mm excluding controls. 220mm including range switch.Reliability:MTB > 4000 hours (calculated) Source ref. MIL HDDK 217E Ground Mobile, Part stress analysis.Finish:Golden Yellow Semi Gloss Enamel BS381C Tint 	Tester Dimensions:	190 × 70mm (Front Panel).		Tester Weight:	3Kg approx including carrying case and test leads
356 stoved to DEF 1059.Test LeadsStandard set of test leads suppliedDisplay:3.5 digit LCD incorporating a battery condition anunciator. Character height; 12.7mm High Rel grade display with wide temperature range fluid.Test LeadsStandard set of test leads suppliedRanges:0000 to 1999mΩ (resolution = 0.01Ω) 0000 to 1999Ω (resolution = 0.02) (resolution = 0.0		range switch.		Reliability:	MTBF > 4000 hours (calculated) Source ref; MIL HDBK 217E Ground Mobile,
Display: 3.5 digit LCD incorporating a battery condition annunciator: Character height: 12/7mm High Rel grade display with wide temperature range fluid. Galibration Period: 12 Months.   Ranges: 0000 to 1999:00 (resolution = 0.1mΩ) 0000 to 1999:00 (resolution = 0.01Ω) 0000 to 1999:00 (resolution = 0.01Ω) 0000 to 1999:00 (resolution = 0.01Ω) 0000 to 1999:02 (resolution = 10.02) 0000 to 1999:02 (resolution = 10.02) Desice national set of test reads supplied 0 to 20Ω   Measurement Accuracy: 0 to 20Ω ±1% of reading ±1 digit 0 to 20Ω ±1% of reading ±1 digit 0 to 20Ω Dieso NATO F-54   Warm-up Time: Instantaneous Seconds Displacing fluid PX-24 NATO C-634   Measurement Frequency: 10Hz OH15 Disporpanol ALI NATO S-735   Max Test Voltage: 1V peak with Test Leads open circuit 35µA rms on 0000 to 1999:02 range. 35µA rms on 0000 to 1999:02 range. 035µA rms on 00000 to 1999:02 range. 35µA rms on 0000 to	Finish:				,
annunciator Character height 12.7mm High Rel grade display with wide temperature range fluid.Constant of HorosRanges:0000 to 1999 mQ (resolution = 0.1mQ) 0000 to 1999 Q (resolution = 0.01Q) 0000 to 1999 Q 0000 to 1999 Q (resolution = 0.01Q) 0000 to 1999 Q 0000 to 1999 Q (resolution = 0.01Q) 0000 to 1999 Q 0000 to 1999 Q (resolution = 0.01Q) 0000 to 1999 Q (resolution = 1.0Q) 0000 to 1999 kQ (resolution = 1.0Q) 0000 to 1999 kQ range. 35µA rms on 0000 to 1999 Q range. 0035µA rms on 0000 to 1999 Q ran	Disalara	3.5 digit LCD incorporating a battery condition annunciator. Character height; 12.7mm High			
Ranges:Rel grade display with wide temperature range fluid.Contaminants: Strage Temp Range: $-20  {\rm C}$ to $\pm 60  {\rm C}$ .Ranges:0000 to $1999\Omega$ (resolution = 0.1mQ) 0.000 to $1999\Omega$ (resolution = 0.01 $\Omega$ ) 0.000 to $1999\Omega$ (resolution = 0.01 $\Omega$ ) 0.000 to $1999\Omega$ (resolution = 1.0 $\Omega$ ) 0.015Other of contantinatic subsciection (Contantination (Contantination)) 0.000 to $1999\Omega$ (resolution = 1.0 $\Omega$ ) 0.015Other of contantination (Contantination) 0.000 to $1999\Omega$ (resolution = 1.0 $\Omega$ ) 0.015Other of contantination (Contantination) 0.000 to $1999\Omega$ (resolution = 1.0 $\Omega$ ) 0.015Other of contantination (Contantination) 0.000 to $1999\Omega$ (resolution = 1.0 $\Omega$ ) 0.015Other of contantination (Contantination) 0.000 to $1999\Omega$ (resolution = 1.0 $\Omega$ ) 0.000 to $1999\Omega$ (resolution) 0.000 to $1999\Omega$ (resolut	Display:				
Ranges:0000 to 1999mΩ 0000 to 1999Ω 0000 to 1999Ω (resolution = 0.01Ω) 0000 to 1999Ω 0000 to 1999Ω (resolution = 0.1Ω) 0000 to 1999Ω 0000 to 1999Ω (resolution = 0.1Ω) 0000 to 1999Ω (resolution = 1.0Ω) 0000 to 1999Ω range. 35µA rms on 0000 to 1999Ω range. 35µA rms on 0000 to 1999Ω range. 035µA rms on 0000 to 1999Ω range. 0005µA rms on 0000 to 1999Ω range. 0005µA range no 1999Ω range. 0005µA rms on 0000 to 1999Ω range. 0005µA rms on 0000 to 1999Ω range. 0005µA range no 1999Ω range. 000					,
NameNameNormalianNSN 6350-99-341-5048. Replaced at calibration intervals. $0.000 to 1.999\Omega$ $0.000 to 1.999\Omega$ $1.5\% of reading \pm 1 digit0 to 20\Omega\pm 1.5\% of reading \pm 1 digit0 to 20\Omega\pm 2\% of reading \pm 3 digitNSN 6350-99-341-5048.Replaced at calibration intervals.Measurement Accuracy:0 to 20\Omega\pm 1.5\% of reading \pm 1 digit0 to 20\Omega\pm 2\% of reading \pm 3 digitNSN 6350-99-341-5048.Replaced at calibration intervals.Zero Adjustment:Response Time:0 to 20\Omega\pm 1.5\% of reading \pm 1 digit0 to 20\Omega\pm 2\% of reading \pm 1 digit0 to 20\Omega\pm 2\%\pm 2\% of reading \pm 1 digit0 to 20\Omega\pm 2\% of reading \pm 1 digit0 to 20\Omega\pm 2\%\pm 2\%$		0		0 1 0	
Notice to 19.992 (resolution = 0.012)Replaced at calibration intervals.0000 to 19.991k2 (resolution = 1.02) 0.000 to 19.991k2 	Ranges:			Desiccant:	
000.0 to 1999Ω 0.000 to 1999Ω 1 to 2LQ 0 to					
Measurement Accuracy: $0.000 \text{ to } 1999 k\Omega$ (resolution = 10 $\Omega$ )Resistant to accidental damage from accidental contact with the following: Trichloroethane (Inhibisol)Measurement Accuracy:0 to $20\Omega\Omega$ $\pm 1/5\%$ of reading $\pm 1$ digit 0 to $20\Omega\Omega$ $\pm 1/5\%$ of reading $\pm 3$ digitResistant to accidental damage from accidental contact with the following: Trichloroethane (Inhibisol)Zero Adjustment:Screwdriver slot adjustment on the front panel.Resistant to accidental damage from accidental contact with the following: Trichloroethane (Inhibisol)Zero Adjustment:Screwdriver slot adjustment on the front panel.Natto F-44 Avcat NATO F-50Dieso NATO F-54 Avcat NATO F-43Warm-up Time:InstantaneousInstantaneousDe-icing fluid PX-24 NATO C-634Warm frequency:IOHzDe-icing fluid AL5 NATO S-735Voltage Across Sample:ImV at FSDNATO H515Isopropanol AL11 NATO S-747Max Test Voltage:3 smA rms on 00:00 to 1999: $\Omega$ range. 35µA rms on 00:00 to 1999: $\Omega$ range. 0:35µA				Contaminants:	.F
Measurement Accuracy:0 to $200\Omega$ $\pm 1\%$ of reading $\pm 1$ digit 0 to $2k\Omega$ Avcat NATO F-43Dieso NATO F-54Zero Adjustment:Screwdriver slot adjustment on the front panel.Avcat NATO F-43General Purpose UK K(MT) DiesoResponse Time:3 secondsOils:Warm-up Time:InstantaneousOPE215Displacing fluid PX-24 NATO C-634Warm-up Time:InstantaneousOPE215Displacing fluid PX-24 NATO S-735Measurement Frequency:IOHzImV at FSDNATO H515Sopropanol AL11 NATO S-747Voltage:INV at FSDINV peak with Test Leads open circuitNATO H515Methylethylketone (MEK)Applied Test Currents:3.5mA rms on 00.00 to 199.9m Ω range. 35µA rms on 0.000 to 199.9m Ω range. 0.35µA rms on 0.000 to 199.9m Ω range. 0.035µA rms on 0.000 to 199.9m Ω range. <b< td=""><td>0.000 to 1.999k<math>\Omega</math> (n</td><td colspan="2"></td></b<>		0.000 to 1.999k $\Omega$ (n			
Treasurement Recturally.O to 2082 $\pm 1/3^{\circ}$ of reading: $\pm 1$ digit 0 to 2kQAvcat NATO F-44General Purpose UK K(MT) DiesoVision $0$ to 2kQ $\pm 2\%$ of reading: $\pm 1$ digit 0 to 20kQ $\pm 2\%$ of reading: $\pm 1$ digit 0 to 20kQAvcat NATO F-44General Purpose UK K(MT) DiesoZero Adjustment:Screwdriver slot adjustment on the front panel. $OPE215$ Displacing fluid PX-24 NATO C-634Response Time:3 seconds $OPE215$ De-icing fluid AL5 NATO S-735Warm-up Time:Instantaneous $OPE215$ De-icing fluid AL5 NATO S-737Measurement Frequency: $10Hz$ $OM15$ De-icing fluid AL5 NATO S-747Voltage Across Sample:ImV at FSDNATO U-123NATO U-149Methanol AL14 NATO S-747Max Test Voltage: $3.5mA$ rms on 00.00 to 199.9mQ range. $35\muA$ rms on 00.00 to 199.9Q range. $0.35\muA$ rms on 00.00 to 19.99Q range. $0.035\muA$ rms on 00.00 to 19.99Q range. $0.035\muA$ rms on 00.00 to 19.99Q range. $0.035\muA$ rms on 00.00 to 19.99 $\Omega$ range. $0.035\muA$ rms on 00.00		(			
Zero Adjustment:Screwdriver slot adjustment on the front panel.Oils: OPE:15Response Time:3 seconds $OHIS$ De-icing fluid PX-24 NATO C-634Warm-up Time:Instantaneous $OHIS$ De-icing fluid ALS NATO S-735Measurement Frequency: $IOHZ$ $IOHZ$ NATO H515Isopropanol AL11 NATO S-747Voltage Across Sample:ImV at FSDImV at FSDEMC:Max Test Voltage:IV peak with Test Leads open circuit $3.5mA$ rms on 0000 to 199.9 $\Omega$ range. $35\muA$ rms on 0000 to 199.9 $\Omega$ range. $0.35\muA$ rms on 0000 to 199.9 $\Omega$ range. $0.35\muA$ rms on 0000 to 19.99 $\Omega$ range. $0.35\muA$ rms	Measurement Accuracy:	0 to 2k $\Omega$ ±	1.5% of reading; ±1 digit	Avcat NATO F-44 Cirgas NATO F-50	
Response Time:3 secondsOM15De-icing fluid AL5 NATO S-735Warm-up Time:InstantaneousNATO H515Isopropanol AL11 NATO S-737Measurement Frequency:10HzNATO H515Isopropanol AL11 NATO S-747Voltage Across Sample:ImV at FSDOM16 OX 38Methanol AL14 NATO S-747Max Test Voltage:IV peak with Test Leads open circuit3.5mA rms on 0000 to 199.9mQ range. 35µA rms on 0000 to 199.9Q range. 0.35µA rms on 0000 to 19.99Q range. 0.35µA rms on 0000 to 19.99Q range. 	Zero Adjustment:	8 8			Direlation Anial DV 24 NATO C (24
Warm-up Time:InstantaneousNATO H515Isopropanol AL11 NATO S-737Measurement Frequency:10HzNATO H515Isopropanol AL11 NATO S-747Voltage Across Sample:ImV at FSDImV at FSDMethylethylketone (MEK)Max Test Voltage:IV peak with Test Leads open circuitSimA ms on 0000 to 1999.9m range. 35 $\mu$ A ms on 0000 to 1999.9m range. 35 $\mu$ A ms on 0000 to 1999.9m range. 0.35 $\mu$ A ms on 0.000 to 199.9m range. 	Response Time:	,			
Voltage Across Sample:ImV at FSDOMD 160 $\times$ 38Methylethylketone (MEK)Max Test Voltage:ImV at FSDOMD 160 $\times$ 38Methylethylketone (MEK)Max Test Voltage:IV peak with Test Leads open circuit3.5mA rms on 000.0 to 199.9mQ range. 35µA rms on 0.000 to 19.99Q range. 0.35µA rms on 0.000 to 19.99Q range. 0.035µA rms on 0.000 to 19.99Q range. 0.0	Warm-up Time:	Instantaneous			
Voltage Across Sample:ImV at FSDMax Test Voltage:IV peak with Test Leads open circuitApplied Test Currents:IV peak with Test Leads open circuitApplied Test Currents:Som Arms on 000.0 to 199.9m $\Omega$ range. 35µA rms on 0000 to 199.9m 2 range. 0.35µA rms on 0000 to 19.99% 2 range. ELED. (4 off), Red Operated by momentary action switch. Four AA size batteries Manganese AlkalineEMC: Designed to be immune to interference. Safety Classification: Basefa 03ATEX 0284 CE 1108. Carrying Case: Black padded, flame retardant, antistatic nylon carrying case with shoulder strap for Tester. Test leads and Operators Handbook Internal dividers separate the Test Leads, Handbook and Tester from each other.	Measurement Frequency:	IOHz			
Max Test Voltage:IV peak with Test Leads open circuitDesigned to be immune to interference from other service equipment and to emit minimal electromagnetic interference.Applied Test Currents: $3.5mA$ rms on 0000 to $1999.9m\Omega$ range. $35\muA$ rms on 0000 to $1999.9\Omega$ range. $0.35\muA$ rms on 0000 to $199.9\Omega$ range. $0.35\muA$ rms on 0000 to $1.99.9\Omega$ range. $0.35\muA$ rms	Voltage Across Sample:	ImV at FSD			Methylethylketone (MEK)
Applied Test Currents:3.5mA rms on 000.0 to 199.9m $\Omega$ range. 350µA rms on 0.000 to 1.999 $\Omega$ range. 35µA rms on 000.0 to 1.999 $\Omega$ range. 0.35µA rms on 000.0 to 199.9 $\Omega$ range. 0.35µA rms on 0000 to 1.999 $\Omega$ range. 0.35µA rms on 0.000 to 1.999 $\Omega$ range. DPM Back-Lighting: Four AA size batteries Manganese Alkalineto emit minimal electromagnetic interference. Designed to DEF STAN 59-41 (Part 1). Class A requirement. Safety Classification: (© II 2G Ex ib 11C T4 Gb (-20°C $\leq$ Ta $\leq$ +40°C) Baseefa 03ATEX 0284 CE 1108. Carrying Case: Black padded, flame retardant, antistatic nylon carrying case with shoulder strap for Tester. Test leads and Operators Handbook. Internal dividers separate the Test Leads, Handbook and Tester from each other.	Max Test Voltage:	IV peak with Test Leads open circuit			
$\begin{array}{llllllllllllllllllllllllllllllllllll$	Applied Test Currents:	350μA rms on 0.000 to 1.999Ω range. 35μA rms on 00.00 to 19.99Ω range. 3.5μA rms on 000.0 to 199.9Ω range. 0.35μA rms on 0.000 to 1.999kΩ range			
$\begin{array}{llllllllllllllllllllllllllllllllllll$				Designed to DEF STAN 59-41 (Part 1). Class A requirement.	
0.35μA rms on 0.000 to 1.999kΩ range 0.035μA rms on 00.00 to 1.999kΩ range Baseefa 03ATEX 0284 CE 1108.   DPM Back-Lighting: L.E.D. (4 off), Red Operated by momentary action switch. Carrying Case: Black padded, flame retardant, antistatic nylon carrying case with shoulder strap for Tester, Test leads and Operators Handbook. Internal dividers separate the Test Leads, Handbook and Tester from each other.					
DPM Back-Lighting: L.E.D. (4 off), Ked   Operated by momentary action switch. Black padded, flame retardant, antistatic nylon carrying case with shoulder strap for Tester, Test leads and Operators Handbook. Internal dividers separate the Test Leads, Handbook and Tester from each other.   Power Requirement: Four AA size batteries Manganese Alkaline Black padded, flame retardant, antistatic nylon carrying case with shoulder strap for Tester, Test leads and Operators Handbook. Internal dividers separate the Test Leads, Handbook and Tester from each other.				Baseefa 03ATEX 0284 CE 1108.	
Power Requirement: Four AA size batteries Manganese Alkaline Separate the Test Leads and Operator's Handbook Internal divider's Separate the Test Leads, Handbook and Tester from each other.	DPM Back-Lighting:			Black padded, flame retardant, antistatic nylon carrying case with shoulder	
	Power Requirement:	Manganese Alkaline			

This publication is not intended to form the basis of a contract

About AGI

Sales leaflet SOM Type 1681 Issue E

AGI is backed by over 30 years of experience in the design, development, manufacture and installation of defence systems and provides full Integrated Logistic Support services, training, installation and documentation.

AGI is accredited to International Quality Standards ISO 9001/BS5750 Part I and Tick-IT software procedures.



## Aeronautical & General Instruments Ltd