

General Specifications	
Adapter connection	Connects to male 'D' type adapter interface connector on 3000 Series front panel
Connections	1 x 9 way male 'D' type connector
	1 x Neutral (copper) industry standard thermocouple plug
Connection to Calibrator	Via supplied 9 Way male to female serial lead (straight through connection)
Output impedance	10 Ohms

Thermocouple Type	Range	90 Day1 Rel. (°C)	180 Year1 Rel. (°C)	1 Year1 Rel. (°C)	2 Year1 Rel. (°C)
J	-180°C to 150°C	0.04	0.045	0.05	0.07
	150°C to 750°C	0.24	0.27	0.3	0.42
K	-140°C to 200°C	0.08	0.09	0.1	0.14
	200°C to 1340°C	0.28	0.315	0.35	0.49
T	-250°C to 400°C	0.16	0.18	0.2	0.28
R	-50°C to 500°C	0.16	0.18	0.2	0.28
	500°C to 1700°C	0.8	0.9	1	1.4
S	-50°C to 1200°C	0.48	0.54	0.6	0.84
	1200°C to 1700°C	1.28	1.44	1.6	2.24
B	0°C to 1200°C	0.08	0.09	0.1	0.14
	1200°C to 1820°C	1.04	1.17	1.3	1.82
N	-270°C to 260°C	0.08	0.09	0.1	0.14
	260°C to 1300°C	0.32	0.36	0.4	0.56

All thermocouple simulation specifications $\pm 2\mu\text{V}$.

Note 1 : Does not include cold junction compensation errors

Specifications apply between 17°C and 27°C.

Outside this range an allowance of 0.18 x 1 Year Spec. per °C should be added.

General Specifications	
Adapter Connection	4x 4mm safety sockets mounted on the rear of the unit
Colour	Cream
Connection to Calibrator	Via adapter interface & adapter lead set (supplied)
Coil Configuration	2 Turn (LHS) : 10 Turn (RHS) : 50 Turn (CENTRE)
Coil Type	High accuracy balanced configuration
Min. internal jaw dimensions	10mm (2 Turn & 10 Turn) : 25mm (50 Turn)
Maximum Current	30A
Maximum RMS voltage	4V
Frequency Range	DC to 500Hz
Construction	Loose wound coil (for heat dissipation) in moulded ABS enclosure
Durability	Fully enclosed coil for maximum protection from mechanical damage
Compatibility	Designed for use with Transmille 3000 Series calibrators and ProCal Software

2 Turn Coil Accuracy (Input 0 to 30A : Freq. DC - 30Hz to 60Hz : Effective Output 0 to 60A)								
	90 Day Rel.		180 Day Rel.		1 Year Rel.		2 Year Rel.	
	%	A	%	A	%	A	%	A
Effective accuracy - Coil only (wound clamps)	0.35	+ 0.008	0.35	+ 0.008	0.35	+ 0.008	0.35	+ 0.008
Effective accuracy - Coil only (hall effect clamps)	0.48	+ 0.07	0.48	+ 0.07	0.48	+ 0.07	0.48	+ 0.07
Total uncertainty with 3050 (All clamps)	0.51	+ 0.09	0.51	+ 0.09	0.52	+ 0.09	0.56	+ 0.10
Total uncertainty with 3041 (wound clamps)	0.36	+ 0.028	0.36	+ 0.028	0.36	+ 0.028	0.38	+ 0.036
Total uncertainty with 3041 (hall effect clamps)	0.49	+ 0.090	0.49	+ 0.090	0.49	+ 0.090	0.50	+ 0.098
Total uncertainty with 3010 calibrator (wound clamps)	0.36	+ 0.010	0.36	+ 0.010	0.36	+ 0.010	0.37	+ 0.010
Total uncertainty with 3010 (hall effect clamps)	0.48	+ 0.072	0.49	+ 0.072	0.49	+ 0.072	0.49	+ 0.072

10 Turn Coil Accuracy (Input 0 to 30A : Freq. DC - 30Hz to 60Hz : Effective Output 0 to 300A)								
	90 Day Rel.		180 Day Rel.		1 Year Rel.		2 Year Rel.	
	%	A	%	A	%	A	%	A
Effective accuracy - Coil only (wound clamps)	0.41	+ 0.01	0.41	+ 0.01	0.41	+ 0.01	0.41	+ 0.01
Effective accuracy - Coil only (hall effect clamps)	0.59	+ 0.11	0.59	+ 0.11	0.59	+ 0.11	0.59	+ 0.11
Total uncertainty with 3050 (All clamps)	0.61	+ 0.13	0.62	+ 0.13	0.62	+ 0.13	0.65	+ 0.14
Total uncertainty with 3041 (wound clamps)	0.42	+ 0.03	0.42	+ 0.03	0.42	+ 0.03	0.43	+ 0.04
Total uncertainty with 3041 (hall effect clamps)	0.60	+ 0.13	0.60	+ 0.13	0.60	+ 0.13	0.61	+ 0.14
Total uncertainty with 3010 calibrator (wound clamps)	0.41	+ 0.012	0.42	+ 0.012	0.42	+ 0.012	0.42	+ 0.012
Total uncertainty with 3010 (hall effect clamps)	0.59	+ 0.112	0.59	+ 0.112	0.60	+ 0.112	0.60	+ 0.112

50 Turn Coil Accuracy (Input 0 to 30A : Freq. DC - 30Hz to 60Hz : Effective Output 0 to 1500A)								
	90 Day Rel.		180 Day Rel.		1 Year Rel.		2 Year Rel.	
	%	A	%	A	%	A	%	A
Effective accuracy - Coil only (wound clamps)	0.24	+ 0.04	0.24	+ 0.04	0.24	+ 0.04	0.24	+ 0.04
Effective accuracy - Coil only (hall effect clamps)	0.45	+ 0.42	0.45	+ 0.42	0.45	+ 0.42	0.45	+ 0.42
Total uncertainty with 3050 (All clamps)	0.48	+ 0.44	0.48	+ 0.44	0.49	+ 0.44	0.53	+ 0.45
Total uncertainty with 3041 (wound clamps)	0.25	+ 0.06	0.26	+ 0.06	0.26	+ 0.06	0.28	+ 0.07
Total uncertainty with 3041 (hall effect clamps)	0.46	+ 0.44	0.46	+ 0.44	0.46	+ 0.44	0.47	+ 0.45
Total uncertainty with 3010 calibrator (wound clamps)	0.25	+ 0.042	0.25	+ 0.042	0.25	+ 0.042	0.26	+ 0.042
Total uncertainty with 3010 (hall effect clamps)	0.45	+ 0.42	0.46	+ 0.42	0.46	+ 0.42	0.46	+ 0.42

Accuracy is dependant on proper alignment of the clamp meter within the coil

Certain clamp meters have alignment marks which should be aligned with the centre of the coil.

Certain types of clamp meter may have additional errors, or be outside the range which can be driven by the 3041/3010 directly

Uncertainty calculated as the square root of the square of coil accuracy + square of calibrator accuracy

using empirical data obtained for both wound & hall effect instruments from a wide range of manufacturers

Clamp coil adaptor built into EA015 workstation adapter

DC Resistance	
At Coil	0.09Ω
With Connection Leads	0.1Ω

Duty Cycle	
10A	Continuous
20A	2mins on ~ 5mins off
30A	30secs on ~ 5mins off

Inductance	
Coil Only	120uH
Coil with typical clamp meter on 50 Turn coil	200uH
Coil with typical clamp meter on 10 Turn coil	50uH
Coil with typical clamp meter on 2 Turn coil	5uH

Specifications apply between 17°C and 27°C.

Outside this range an allowance of 0.18 x 1 Year Spec. per °C should be added.

General Specifications	
Adaptor connection	Connects to male 'D' type adapter interface connector on 3000 Series front panel
Indicators	Incorporates red 8mm 20° Spread Ultra bright LED mounted in the adaptor case
Brightness	1000mcd (wavelength 660nm)
Duty cycle	20% (5:1)
Connections	1 x 9 way male 'D' type connector
Connection to Calibrator	Via supplied 9 Way male to female serial lead (straight through connection)

Optical Tachometer Adaptor Accuracy				
Range	Resolution	180 Day Rel. %	1 Year Rel. %	2 Year Rel. %
240 to 60,000 RPM	6 RPM	0.0029	0.0030	0.0036

Frequency Input	RPM Simulation
40	240
100	600
200	1200
400	2400
600	3600
800	4800
1000	6000
2000	12000
4000	24000
8000	32000
10000	60000

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General Specifications	
Adaptor connection	Connects to male 'D' type adapter interface connector on 3000 Series front panel
Indicators	Active terminals indication

Insulation Resistance				
Range	Resolution	180 Day Rel. %	1 Year Rel. %	2 Year Rel. %
0 Ohms to 5 MOhm	10kOhm	0.190	0.200	0.240
5.01 MOhms to 2 GOhms	10kOhm	2.850	3.000	3.600

Maximum insulation resistance voltage input 1000V

Insulation Test Voltage Measurement				
Ranges	Resolution	180 Day Rel. % ± mV	1 Year Rel. % ± mV	2 Year Rel. % ± mV
50V	10mV	0.475 ± 19	0.5 ± 20	0.6 ± 24
100V				
250V				
500V				
1kV				

Continuity Resistance				
Ranges	Resolution	180 Day Rel. % mOhms	1 Year Rel. % mOhms	2 Year Rel. % mOhms
1.9 Ohms	1mR	0.19 ± 47.5	0.2 ± 50	0.24 ± 60
10 Ohms	1mR			
19 Ohms	10mR			
190 Ohms	100mR			
1 kOhm	10mR			

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General Specifications	
Adapter Connection	Connects to male 'D' type adapter interface connector on 3000 Series front panel
Indicators	Active terminals indication

Voltage Measurement							
Ranges	Resolution	180 Day Rel.		1 Year Rel.		2 Year Rel.	
		%	mV	%	mV	%	mV
100mV	10uV	0.019	± 0.019	0.02	± 0.02	0.024	± 0.024
1V	10uV	0.019	± 0.19	0.02	± 0.2	0.024	± 0.24
30V	100uV	0.019	± 0.95	0.02	± 1	0.024	± 1.2

Current Measurement							
Ranges	Resolution	180 Day Rel.		1 Year Rel.		2 Year Rel.	
		%	uA	%	uA	%	uA
30mA	1uA	0.029	± 4.75	0.03	± 5	0.036	± 6

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