

CERTIFICADO DE VERIFICACIÓN / VERIFICATION *CERTIFICATE*

INNOVATECIS CIA LTDA

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Certificado No. (Certificate #): 64950

Fecha de Recepción (Reception Date): 2026-01-09

Fecha de Verificación (Verification Date): 2026-01-15

Próxima Fecha de Verificación (Verification Due): 2027-01-15

Fecha de Emisión (Emission Date): 2026-01-15

Cliente (Client): AVIANCA - ECUADOR S.A.
Luis Tamayo N24-33 Y Baquerizo Moreno (SEDE PRINCIPAL)

Información del Instrumento (Instrument Information)

Equipo (Instrument):	TOOL KIT, ELECTRICAL SERVICE	Tamaño de contacto: (Measurement Range)	12 a 22 .	Indicación (Readout)	Analógico (Analog)
Marca (Brand):	DMC			Ubicación (Location):	Taller
Modelo (Model):	DMC519	WIRE RANGE	12 - 30	Lugar de Verificación: (Place of Verification):	Lab. Innovatec / Innovatec's Lab.
Serie/Código:	N-A-GYE00000617	CABLE			

Datos de Calibración (Calibration Info)

Procedimiento (Procedure): INN-PC-33

Condiciones Ambientales (Environmental Conditions)

Temperatura (Temp): (20.57 °C a 20.95 °C)

Humedad (Humidity): (58.61 %HR a 58.23 %HR)

Trazabilidad (Traceability Info)

Patrón (Standard)	Marca (Brand)	Cert. #	Última Calibración (Last Cal.)	Período (Period)
Micrómetro	Pantec	55802	2025-04-09	1 año
Pie de Rey	Starret	56647	2025-05-06	2 años
-	-	-	-	-
-	-	-	-	-

Resultados (Results)

Identificación (Identification)	Patrón (Standard)	UBP (UUT)	Error (Error)	Incertidumbre (Uncertainty)
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Ver Resultados en Hoja Adjuntada

See results in attached Sheet

El presente Certificado de Verificación posee la trazabilidad en esta magnitud hacia el Patrón Nacional, a través de la realización de la unidad de medida en el NPL, NIST, u otro Laboratorio Nacional reconocido al Sistema Internacional de Medidas. La verificación fue realizada bajo un Sistema de Gestión de Laboratorio conforme a la Norma ISO/IEC 17025:2017. Los resultados y su incertidumbre reportada con un nivel de confianza de k=2, 95% son relacionados a este instrumento y en el tiempo que se realizó las medidas. Este Laboratorio no se responsabiliza de los perjuicios que pueda ocasionar el uso inadecuado del instrumento Verificado. La reproducción parcial es prohibida, la reproducción total deberá hacerse con la autorización escrita aprobada por INNOVATEC Industrial Solutions. *This Certificate of Verification provides traceability of measurement to the National Standard, through units of measurement realized at the NPL, NIST or other recognized National Standard Laboratories to the International System of Units. The Verification was performed under a Laboratory Management System in accordance with the ISO/IEC 17025:2017 Standard. The results and the reported uncertainty at a confidence level of k=2, 95% are related only to this instrument and at the time of measurement. This Laboratory is not responsible for any damages that may result from improper use of the verified instrument. Partial reproduction is forbidden, the total reproduction must have an approved written authorization by INNOVATEC Industrial Solutions.*

Comentarios: PartN. DMC519 | R6235925
Comments: As Received Condition: In Tolerance with MFG Specification.
Incoming Condition: Good Condition.
As Left Condition: In Tolerance with MFG Specification.
"In Tolerance" condition is based on a Simple Decision Rule and does not take into account Uncertainty Evaluation.

Verificado por: Ing. Isaac Calle
Verified by:

Aprobado por:
Approved by:



Fin de Certificado (End of Certificate)

Certificado No.: 64950
Fecha de Calibración: 2026-01-15

Equipo (Instrument): TOOL KIT, ELECTRICAL SERVICE
Marca (Brand): DMC

AFMS / M22520/2-01 617-1	Patrón (Standard) (mm) ²	Wire Range or Cable	N° Selector	Área (mm) ²	Error (mm) ²	Incertidumbre (Uncertainty)
	0.38	22	4	0.36419	0.01581	± 0.66 mm
K629	0.22	24	3	0.20182	0.01818	± 0.66 mm
SOURIAU	0.15	26	2	0.14639	0.00361	± 0.66 mm
8572-30	0.09	28	1	0.08416	0.00584	± 0.66 mm
K42 - 22SEL	0.38	22	4	0.38906	-0.00906	± 0.66 mm
Basic Tool M22520/2-09	0.22	24	3	0.22426	-0.00426	± 0.66 mm
Use with M22520/2-01	0.15	26	2	0.15049	-0.00049	± 0.66 mm
K42 - 22MSEL	0.22	24	4	0.21786	0.00214	± 0.66 mm
Basic Tool M22520/2-09	0.15	26	3	0.14370	0.00630	± 0.66 mm
Use with M22520/2-01	0.09	28	2	0.11306	-0.02306	± 0.66 mm
K42 - 22DSEL	0.38	22	4	0.38810	-0.00810	± 0.66 mm
Basic Tool M22520/2-09	0.22	24	3	0.23312	-0.01312	± 0.66 mm
Use with M22520/2-01	0.15	26	2	0.15704	-0.00704	± 0.66 mm
	0.09	28	1	0.09603	-0.00603	± 0.66 mm
K267-1	0.38	22	4	0.38213	-0.00213	± 0.66 mm
Basic Tool M22520/2-23	0.22	24	3	0.22113	-0.00113	± 0.66 mm
Use with M22520/2-01	0.15	26	3	0.17190	-0.02190	± 0.66 mm
K41 - 22SEL	0.38	22	4	0.37172	0.00828	± 0.66 mm
Basic Tool M22520/2-06	0.22	24	3	0.23457	-0.01457	± 0.66 mm
Use with M22520/2-01	0.15	26	2	0.13618	0.01382	± 0.66 mm
K41 - 22MSEL	0.22	24	4	0.23125	-0.01125	± 0.66 mm
Basic Tool M22520/2-06	0.15	26	3	0.15465	-0.00465	± 0.66 mm
Use with M22520/2-01	0.09	28	2	0.09057	-0.00057	± 0.66 mm
	0.38	22	4	0.22922	0.15078	± 0.66 mm
K41 - 22DSEL	0.22	24	3	0.15440	0.06560	± 0.66 mm
Basic Tool M22520/2-06	0.15	26	2	0.09770	0.05230	± 0.66 mm
Use with M22520/2-01	0.09	28	1	0.95186	-0.86186	± 0.66 mm
K543	0.38	RG174/U - RG179/U	2	0.38860	-0.00860	± 0.66 mm
SOURIAU						
8522-1-001						
8522-2-001						
	0.38	RG58C	5	0.38903	-0.00903	± 0.66 mm
	0.38	RG223	5	0.38903	-0.00903	± 0.66 mm
	0.38	141 SEMI RIGID	5	0.38903	-0.00903	± 0.66 mm
	0.38	RG180B	5	0.38903	-0.00903	± 0.66 mm
K345	0.38	RG188	5	0.38903	-0.00903	± 0.66 mm
AMP	0.38	RG58C	5	0.38903	-0.00903	± 0.66 mm
	0.38	RG223	5	0.38903	-0.00903	± 0.66 mm
	0.38	RG188	5	0.38903	-0.00903	± 0.66 mm
	0.38	RG58C	5	0.38903	-0.00903	± 0.66 mm
	0.38	141 SEMI RIGID	5	0.38903	-0.00903	± 0.66 mm
	0.15	26	4	0.13813	0.01187	± 0.66 mm
K13-1	0.22	24	5	0.21976	0.00024	± 0.66 mm
Basic Tool M22520/2-08	0.38	22	6	0.38112	-0.00112	± 0.66 mm
Use with M22520/2-01	0.52	20	7	0.81390	-0.29390	± 0.66 mm
K344	0.38	RG188	5	0.37301	0.00699	± 0.66 mm
AMP	0.38	RG58C	5	0.37301	0.00699	± 0.66 mm
	0.38	22	3	0.38212	-0.00212	± 0.66 mm
	0.22	24	2	0.21451	0.00549	± 0.66 mm
K127-2	0.15	26	1	0.14312	0.00688	± 0.66 mm
	0.15	26	3	0.14654	0.00346	± 0.66 mm
	0.09	28	2	0.08512	0.00488	± 0.66 mm
	0.05	30	1	0.04042	0.00958	± 0.66 mm
	0.38	22	3	0.37570	0.00430	± 0.66 mm
K673	0.22	24	2	0.21811	0.00189	± 0.66 mm
P-001104-100-02	0.15	26	1	0.16659	-0.01659	± 0.66 mm
K340	0.52	20	5	0.84126	-0.32126	± 0.66 mm
Basic Tool M22520/2-14	0.38	22	4	0.36946	0.01054	± 0.66 mm
Use with M22520/2-01	0.22	24	3	0.20159	0.01841	± 0.66 mm
	0.52	20	7	0.79466	-0.27466	± 0.66 mm
K1S	0.38	22	6	0.36924	0.01076	± 0.66 mm
Basic Tool M22520/2-02	0.22	24	5	0.21602	0.00398	± 0.66 mm
Use with M22520/2-01	0.15	26	4	0.13555	0.01445	± 0.66 mm
K43	0.52	20	6	0.78523	-0.26523	± 0.66 mm
Basic Tool M22520/2-10	0.38	22	5	0.37352	0.00648	± 0.66 mm
Use with M22520/2-01	0.22	24	4	0.20402	0.01598	± 0.66 mm

AF8 / M22520/1-01 617-2	Patrón (Standard) (mm)^2	Contacs	Color Code	Wire Range Cable	N° Selector	Área (mm)^2	Error (mm)^2	Incertidumbre (Uncertainty)	
TH398S	1.31	8522-1-001	B	RG179B/U	8	1.2825	0.02748	± 0.66 mm	
	1.04	8522-2-001	R		8	1.0701	-0.03012	± 0.66 mm	
	0.52				1	0.7990	-0.27902	± 0.66 mm	
TH1A M22520/1-02	0.52	20-20	R	24	2	0.8010	-0.28102	± 0.66 mm	
	0.52			22	3	0.8150	-0.29501	± 0.66 mm	
	0.52			20	4	0.8041	-0.28412	± 0.66 mm	
	1.31	16-22		26	1	1.2746	0.03537	± 0.66 mm	
	1.31	16-20	B	24	2	1.2782	0.03176	± 0.66 mm	
	1.31			22	3	1.2782	0.03176	± 0.66 mm	
	1.31	16-16	B	20	4	1.2782	0.03176	± 0.66 mm	
	1.31			18	5	1.2782	0.03176	± 0.66 mm	
	1.31			16	6	1.2760	0.03398	± 0.66 mm	
	2.08	12-16	Y	20	4	2.0441	0.03587	± 0.66 mm	
	2.08			18	5	2.0405	0.03954	± 0.66 mm	
	2.08			16	6	2.0583	0.02174	± 0.66 mm	
	2.08	12-12	Y	14	7	2.0302	0.04977	± 0.66 mm	
	2.08			12	8	2.0332	0.04685	± 0.66 mm	
	0.52	-20	R	24	1	0.8121	-0.29213	± 0.66 mm	
	0.52			22	2	0.8090	-0.28902	± 0.66 mm	
	0.52			20	3	0.8263	-0.30626	± 0.66 mm	
	TH163 M22520/1-04	1.31	-16	B	20	4	1.2844	0.02558	± 0.66 mm
1.31		18			5	1.2922	0.01784	± 0.66 mm	
1.31		16			6	1.2946	0.01540	± 0.66 mm	
3.31		-12	Y	14	7	2.0655	1.24451	± 0.66 mm	
3.31				12	8	2.0430	1.26701	± 0.66 mm	
1.31		M24308/10-1 Y M24308/11-1	-	24	-	1.2329	0.07715	± 0.66 mm	
0.33			-	22	-	0.8411	-0.51112	± 0.66 mm	
0.52			-	20	-	0.5201	-0.00013	± 0.66 mm	
TP585			RG141A, 142A, 142B, 178B, 180B, 188, 195A, 196A, 303, 316/U						
		M24308/16 & 17		1	-	1.6262	0.02384	± 0.66 mm	
TP465 M22520/1-11	1.65	M39029/11-12-12	-	12	8	2.0029	0.07714	± 0.66 mm	
	2.08								
	2.08	M39029/12-12-12	-	14	7	2.0005	0.07955	± 0.66 mm	
	1.31	01-0501, 01-0502	G	RG 213/U	8	1.20621	0.10379	± 0.66 mm	
	1.31			RG 214/U	8	1.17426	0.13574	± 0.66 mm	
	1.31			RG 225/U	8	1.18522	0.12478	± 0.66 mm	
	1.31			RG 393/U	8	1.19633	0.11367	± 0.66 mm	
	1.31			RG 142B/U	7	1.25396	0.05604	± 0.66 mm	
	1.31	01-0503	G	RG 400/U	7	1.26786	0.04214	± 0.66 mm	
	1.31			RG 213/U	8	1.28679	0.02321	± 0.66 mm	
	1.31	05-0501, 05-0502		RG 214/U	8	1.28812	0.02188	± 0.66 mm	
	1.31			RG 225/U	8	1.27902	0.03098	± 0.66 mm	
	1.31			RG 393/U	8	1.26906	0.04094	± 0.66 mm	
	TH285 M22520/1-13	1.31	39-0501	B	RG 214/U	8	1.24024	0.06976	± 0.66 mm
		1.31			RG 225/U	8	1.23026	0.07974	± 0.66 mm
		1.31			RG 393/U	8	1.22012	0.08988	± 0.66 mm
		1.31	05-0503, 39-0503		RG 142/U	7	1.25490	0.05510	± 0.66 mm
		1.31			RG 400/U	7	1.25716	0.05284	± 0.66 mm
		1.31			RG 213/U	8	1.15842	0.15158	± 0.66 mm
		1.31			RG 214/U	8	1.20652	0.10348	± 0.66 mm
		1.31			RG 225/U	8	1.25152	0.05848	± 0.66 mm
		1.31	02-0501, 02-0502 02-0511, 02-0512	R	RG 393/U	8	1.17802	0.13198	± 0.66 mm
		1.31			RG 142B/U	7	1.21701	0.09299	± 0.66 mm
1.31		RG 400/U			7	1.22412	0.08588	± 0.66 mm	

HX4 / M22520/5-01 617-3	Patrón (Standard) (mm) ²	Modelo	Cable	Wire Range or Cable	Área (mm) ²	Error (mm) ²	Incertidumbre (Uncertainty)
28	2.08	Y178A	M22520/5-01	26-12	2.0349	0.0451	± 0.66 mm
76	0.82	Y143	M22520/5-45	A, B	0.9190	-0.0990	± 0.66 mm
	1.31		D	A	1.4880	-0.1780	± 0.66 mm
45	0.65	Y586	D	B	0.7180	-0.0680	± 0.66 mm
	0.33		D	C	0.3620	-0.0320	± 0.66 mm
6	2.62	Y587	D	26-12	2.4166	0.2034	± 0.66 mm
36	0.82	Y588	D	26-13	0.8780	-0.0580	± 0.66 mm
	0.41		A	26-14	0.4335	-0.0235	± 0.66 mm
1	0.41	Y197	B	26-15	0.4250	-0.0150	± 0.66 mm
	1.04			20-16	1.0295	0.0105	± 0.66 mm
43	0.52	Y540	M22520/5-103	26-20	0.5120	0.0080	± 0.66 mm
28	0.41	Y216	D	26-12	0.4540	-0.0440	± 0.66 mm
33	0.82	Y212	D	26-12	0.8781	-0.0581	± 0.66 mm
97	1.65	Y539	M22520/5-102	16-12	1.6455	0.0045	± 0.66 mm
DMC-USA	2.08	Y50	M22520/5-100	45270	2.3091	-0.2291	± 0.66 mm
	0.65			26-14	0.6572	-0.0072	± 0.66 mm

DANIELS - USA / SP	Diámetro Exterior	Patrón (Standard)	Área (mm) ²	Error (mm) ²	Incertidumbre (Uncertainty)
CG22	2.304	0.09	0.08801	0.00199	± 0.67 mm
CG20	2.401	0.18	0.17901	0.00099	± 0.67 mm
CG16	3.174	0.226	0.25607	-0.03007	± 0.67 mm
CG12	3.946	0.321	0.33802	-0.01702	± 0.67 mm

M22520/3-1 PIGE DE CONTROLE (DANIELS G125)	N° Selector	Gaging	Color Code	Patrón (Standard)	Área (mm) ²	Error (mm) ²	Incertidumbre (Uncertainty)
M22520/1-01 (AF8)	4	GO	G	0.390	0.3831418542	0.007	± 0.67 mm
M22520/2-01 (AFM8)	8	NO-GO	R	0.440	0.9522318564	-0.512	± 0.67 mm