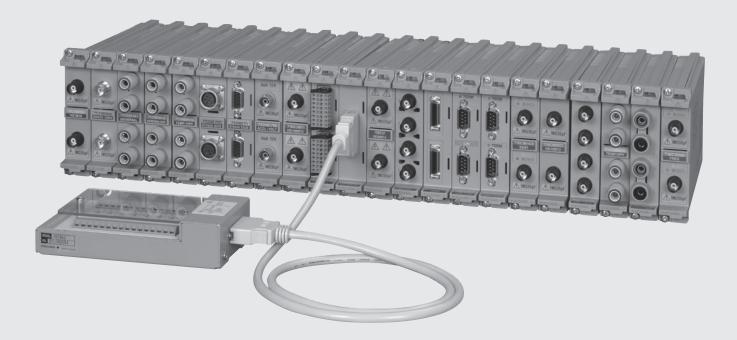
Test&Measurement





Plug-in modules specifications

ScopeCorder series DL950/SL2000/DL850E/DL850EV/DL350/SL1000

Precision Making

Bulletin DL950-02EN

Module Selection^{*1}

Input	Model No.	Sample rate	Resolution	Bandwidth	Number of channels	Isolation	Maximum measurement voltage ^{*11} (DC + ACpeak)	DC accuracy	Note
	720212'9	200 MS/s	14 bit	40 MHz	2	Isolated	1000 V°2, 200 V°5	±0.5%	High speed, high voltage, isolated
	720211'9	100 MS/s	12 bit	20 MHz	2	Isolated	1000 V°2, 200 V°5	±0.5%	High speed, high voltage, isolated
	720250	10 MS/s	12 bit	3 MHz	2	Isolated	800 V°2, 200 V°5	±0.5%	High noise immunity
	701251	1 MS/s	16 bit	300 kHz	2	Isolated	600 V ² , 140 V ⁵	±0.25%	High sensitivity range (1 mV/div), low noise ($\pm 100 \ \mu$ Vtyp.), and high noise immunity
Analog	720256	10 MS/s	16 bit	3 MHz	4	Isolated	600 V ² , 200 V ⁵	±0.25%	4 CH BNC input low noise, high noise immunity
Voltage .	720254	1 MS/s	16 bit	300 kHz	4	Isolated	600 V ² , 200 V ⁵	±0.25%	4 CH BNC inputlow noise, high noise immunity
	701255	10 MS/s	12 bit	3 MHz	2	Non-Isolated	600 V ^{·4} , 200 V ^{·3}	±0.5%	High speed, non-isolated
	720268	1 MS/s	16 bit	300 kHz	2	Isolated	1000 V ^{*10}	±0.25%	With AAF, RMS, and high noise immunity
	720220	200 kS/s	16 bit	5 kHz	16	Isolated (GND-terminal) non-isolated (CH-CH)	20 V ⁻³	±0.3%	16 CH voltage measurement (Scan-type)
	701261	100 kS/s (Voltage), 500 S/s (Temperature)	16 bit (Voltage), 0.1°C (Temperature)	40 kHz (Voltage), 100 Hz (Temperature)	2	Isolated	42 V	±0.25% (Voltage)	Thermocouple (K, E, J, T, L, U, N, R, S, B, W, KP/AuFe)
	701262	100 kS/s (Voltage), 500 S/s (Temperature)	16 bit (Voltage), 0.1°C (Temperature)	40 kHz (Voltage), 100 Hz (Temperature)	2	Isolated	42 V	±0.25% (Voltage)	Thermocouple (K, E, J, T, L, U, N, R, S, B, W, KP/AuFe), with AAF
Analog Voltage &	701265	500 S/s (Voltage), 500 S/s (Temperature)	16 bit (Voltage), 0.1°C (Temperature)	100 Hz	2	Isolated	42 V	±0.08 (Voltage)	Thermocouple (K, E, J, T, L, U, N, R, S, B, W, KP/AuFe), high sensitivity range (0.1 mV/div)
Temperature "	720266	125 S/s (Voltage), 125 S/s (Temperature)	16 bit (Voltage), 0.1°C (Temperature)	15 Hz	2	Isolated	42 V	±0.08 (Voltage)	Thermocouple (K, E, J, T, L, U, N, R, S, B, W, KP/AuFe), high sensitivity range (0.1 mV/div), Low noise
	720221*8	10 S/s	16 bit	600 Hz	16	Isolated	20 V	±0.15% (Voltage)	16 CH voltage or temperature measurement (scan method) Thermocouple (K, E, J, T, L, U, N, R, S, B, W, KP/AuFe)
	701270	100 kS/s	16 bit	20 kHz	2	Isolated	10 V	±0.5% (Strain)	Supports strain NDIS, 2, 5, 10 V built-in bridge power supply
Strain	701271	100 kS/s	16 bit	20 kHz	2	Isolated	10 V	±0.5% (Strain)	Supports strain DSUB, 2, 5, 10 V built-in bridge power supply, and shunt CAL
Analog Voltage, Acceleration	701275	100 kS/s	16 bit	40 kHz	2	Isolated	42 V	±0.25% (Voltage) ±0.5% (Acceleration)	Built-in anti-aliasing filter, Supports built-in amp type acceleration sensors (4 mA/22 V)
Frequency	720281	1 MS/s	16 bit	resolution 625 ps	2	Isolated	420 V ² , 42 V ³	±0.1% (Frequency)	Measurement frequency of 0.01 Hz to 500 kHz, Measured parameters (frequency, RPMs, RPSs, period, duty cycle, power supply frequency, pulse width, pulse integration, and velocity)
Logic	720230	10 MS/s	_	_	8 bit × 2 ports	non-isolated	depend on logic probe used.	_	(8 bit/port) × 2, compatible with four types of logic probe (sold separately)
CAN/ CAN FD/ LIN	720245	100 kS/s	_	_	(60 signals × 2) port	Isolated	10 V (CAN port) 18 V (LIN port)	_	CAN/CAN FD port × 2, CAN/CAN FD Data of maximum 32-bit allowable, LIN port × 2 CAN FD/LIN switchable on each port separately Available for DL950/VCE, SL2000/VCE and DL350 /VE option. ¹⁶⁻⁷
SENT	720243	100 kS/s	-	_	11 data × 2 ports	Isolated	42 V	-	Supported protocol: SAE J2716. Available for DL950/VCE, SL2000/ VCE and DL350 /VE option." ⁶¹⁷

Probes are not included with any modules.
 In combination with 700929, 702902, or 701947 probe.
 Direct input
 In combination with 10:1 probe model 701940
 In combination with 701901 + 701954.
 Any other modules can be installed in the remaining slots.
 Yi. When using these modules with DL950/VCE or SL2000/VCE or DL850EV, up to four, CAN & LIN Bus Monitor Modules (720241), CAN/CAN FD Monitor Modules (720242) , CAN FD/LIN Monitor Module (720245) or SENT Monitor Modules (720243) total can be used on a single main unit. For the CAN & LIN Bus Monitor Modules (720241), CAN/CAN FD Monitor Modules (720242), CAN FD/LIN Monitor Module (720245), up to two in total can be used on a single main unit. For the CAN & LIN Bus Monitor Modules (720241), CAN/CAN FD Monitor Modules (720242), CAN FD/LIN Monitor Module (720245), up to two in total can be used on a single main unit.
 The 16 C Scanner Box (701953) is required for measurement.
 Class 1 Laser Product, IEC60825-1:2014, A11:2021, IEC 60825-1:2014, B7247.1-2024
 In combination with 754933 and 701954. (1000 WDC or 1141 Vpeak maximum) when using with DL960 or SL2000 or DL350. 850V (DC + ACpeak) when using with DL850/DL850E/DL850

Compatibility between plug-in modules and main units

	Plug-in Module		Main Unit					
Model	Name	Remark	DL950	SL2000	DL350	DL850E	DL850EV	SL1000
720212	High-speed 200 MS/s 14 Bit Isolation Module		Yes	Yes	No	No	No	No
720210	High-speed 100 MS/s 12 Bit Isolation Module	Discontinued	No	No	No	Yes	Yes	Yes
720211	High-speed 100 MS/s 12 Bit Isolation Module		Yes	Yes	Yes	Yes	Yes	Yes
701250	High-speed 10 MS/s 12 Bit Isolation Module	Discontinued	Yes	Yes	No	Yes	Yes	Yes
720250	High-speed 10 MS/s 12 Bit Isolation Module		Yes	Yes	Yes	Yes	Yes	Yes
701251	High-speed 1 MS/s 16 Bit Isolation Module		Yes	Yes	No	Yes	Yes	Yes
720256	4 CH 10 MS/s 16 Bit Isolation Module		Yes	Yes	No	No	No	No
720254	4 CH 1 MS/s 16 Bit Isolation Module		Yes	Yes	Yes	Yes	Yes	No
701255	High-speed 10 MS/s 12 Bit Non-Isolation Module		Yes	Yes	No	Yes	Yes	Yes
701267	High-voltage 100 kS/s 16 Bit Isolation Module (with RMS)	Discontinued	No	No	No	Yes	Yes	Yes
720268	High-voltage 1 MS/s 16 Bit Isolation Module (with AAF, RMS)		Yes	Yes	Yes	Yes	Yes	Yes
720220	16 CH Voltage Input Module		No	Yes	Yes	Yes	Yes	No
701261	Universal Module		Yes	Yes	Yes	Yes	Yes	Yes
701262	Universal Module (with AAF)		Yes	Yes	Yes	Yes	Yes	Yes
701265	Temperature/High-Precision Voltage Module		Yes	Yes	Yes	Yes	Yes	Yes
720266	Temperature/High-Precision Voltage Isolation Module (Low Noise)		Yes	Yes	Yes	Yes	Yes	Yes
720221	16 CH Temperature/Voltage Input Module		Yes	Yes	Yes	Yes	Yes	No
701270	Strain Module (NDIS)		Yes	Yes	Yes	Yes	Yes	Yes
701271	Strain Module (DSUB, Shunt-CAL)		Yes	Yes	Yes	Yes	Yes	Yes
701275	Acceleration/Voltage Module (with AAF)		Yes	Yes	Yes	Yes	Yes	Yes
701281	Frequency Module	Discontinued	Yes	Yes	No	Yes	Yes	Yes
720281	Frequency Module		Yes	Yes	Yes	Yes	Yes	Yes
720230	Logic Input Module		Yes	Yes	Yes	Yes	Yes	No
720240	CAN Bus Monitor Module	Discontinued	Yes	Yes	Yes	No	Yes	No
720245	CAN FD/LIN Monitor Module		Yes	Yes	Yes	No	No	No
720242	CAN/CAN FD Monitor Module	Discontinued	Yes	Yes	Yes	No	Yes	No
720241	CAN & LIN Bus Monitor Module	Discontinued	Yes	Yes	Yes	No	Yes	No
720243	SENT Monitor Module		Yes	Yes	Yes	No	Yes	No

Note: • Probes are not included with any modules. • The use of a 720221 module requires an External Scanner Box (model 701953). • Firmware update may be required depending the module used. • The /VC option is required when using a 720240, 720241, 720242, 720243, or 720245 module with a DL350. • The /VCE option is required when using a 720240, 720241, 720242, 720243, or 720245 module with a DL950 and SL2000. • Refer to the note on page 17 when using a 720254 module with a DL850E or DL850E V. • If 720254 is shipped before June 2025 and inserted into the SL2000, the SL2000 will not comply with CE marking (EMC). • If 720211 is shipped before July 2023 and inserted into the SL2000, the SL2000 will not comply with CE marking (EMC).

Main Specifications (plug-in modules)

*1: Under standard operating conditions (temperature of 23°C ± 5°C, 20 to 80% RH, warm-up of 30 minutes or more), after calibration. Recommended calibration period: 1 year. Note that the strain modules (701270/71) must be balanced. *2 to *11: See the figure on page 9 for notes on the maximum input voltage and maximum rated voltage to earth. *12: See the figure on page 9 for the voltage-axis sensitivity setting.

High-speed 200 MS/s 14 Bit Isol	ation Module (720212)	
Input channels	2	
Input type	Isolated unbalanced	
Input coupling	AC, DC, and GND	
Input connector	BNC connector (isolated type)	
Input impedance	1 M Ω ±1%, approx. 35 pF	
Maximum sample rate	200 MS/s	
Frequency rage (-3 dB)"	DC to 40 MHz	
A/D conversion resolution	14 bit (600 LSB/div)	
Voltage-axis sensitivity setting ^{*12}		
	Direct input: 10 mV/div to 20 V/div	(1-2-5 steps)
	1)/702902 (10:1)/701947 (100:1) ^{*2}	1000 V (DC + ACpeak
In combination with 701901 + 70	1954 (1:1)'6	200 V (DC + Acpeak
Direct input ^{*10}		42 V (DC + ACpeak
Maximum rated voltage to earth In combination with 700929 (10:	(1 kHz or less) 1)/702902 (10:1)/701947 (100:1) ^{:3}	1000 Vrms (CAT I
In combination with 701901 + 70	1954 (1:1)"9	1000 Vrms (CAT
Direct input ^{*11}		42 V (DC + ACpeak
-3 dB point when AC coupled low	w frequency attenuation point 10 Hz or less	
Vertical (voltage) axis accuracy ^{*1}	DC accuracy: ±(0.5% of 10 div)	
Common mode rejection ratio	80 dB (50/60 Hz) or more (Typ.)	
Temperature coefficient	Zero point: ±(0.1% of 10 div)/°C (Ty Gain: ±(0.05% of 10 div)/°C (Typ.)	/p.)
Bandwidth limit	FULL/5 MHz/2.56 MHz/ 1.28 MHz 160 kHz/ 80 kHz/ 40 kHz/ 20 kHz/	
Weight	Approx. 275 g	
High-Speed 100 MS/s, 12 Bit Iso Input channels	2 2	
Input type	Isolated unbalanced	
Input coupling	AC, DC, and GND	
Input connector	BNC connector (isolated type)	
Input impedance	1 MΩ ±1%, approx. 35 pF	
Maximum sample rate	100 MS/s	
Frequency range (-3 dB)*1	DC to 20 MHz	
A/D conversion resolution	12 bit (150 LSB/div)	
Voltage-axis sensitivity setting ^{*12}	Direct input: 10 mV/div to 20 V/div	(1-2-5 steps)
Maximum input voltage (1 kHz or		
	1)/702902 (10:1)/701947 (100:1) ²	1000 V (DC + ACpeak
In combination with 701901 + 70	1954 (1:1)*6	200 V (DC + ACpeak
Direct input ^{*10}		42 V (DC + ACpeak
Maximum rated voltage to earth In combination with 700929 (10:	(1 kHz or less) 1)/702902 (10:1)/701947 (100:1) ^{·3}	1000 Vrms (CAT I
In combination with 701901 + 70	1954 (1:1)"9	1000 Vrms (CAT I
Direct input ^{*11}	42 V (DC	+ ACpeak) (CAT II, 30 Vrms
-3 dB point when AC coupled low	w frequency attenuation point 10 Hz or less (1 Hz or less when us 0.1 Hz or less when using the 7019	
Vertical (voltage) axis accuracy"	DC accuracy: ±(0.5% of 10 div)	
Common mode rejection ratio	80 dB (50/60 Hz) or more (Typ.)	
Temperature coefficient	Zero point: ±(0.1% of 10 div)/°C (T	(n)
Bandwidth limit	Gain: ±(0.05% of 10 div)/°C (Typ.)	. ,
	40 kHz/20 kHz/10 kHz	
Probe attenuation setting	Voltage Probe 1:1, 10:1, 100:1, 10 Current Probe 1 A:1 V, 10 A: 1 V (fr 100 A: 1 V (for the 7	or the 701932/701933)
Weight	Approx. 290 g	2.230,707001j
High-Speed 10 MS/s, 12 Bit Isola Input channels	ation Module (720250)	
Input type	2 Isolated unbalanced	
Input coupling	AC, DC, and GND	
Input connector	BNC connector (isolated type)	
Input impedance	1 M Ω ±1%, approx. 35 pF	

Common mode rejection ratio	80 dB (50/60) Hz) or more (Typ.)	
Maximum sample rate	10 MS/s		
Frequency range (-3 dB) ^{*1}	DC to 3 MHz	7	
A/D conversion resolution	12 bit (150 L	SB/div)	
Voltage-axis sensitivity setting ¹²	Direct input:	5 mV/div to 20 V/div (1-2-5	5 steps)
Maximum input voltage (1 kHz or In combination with 700929 (10:1		1)/701947 (100:1) ^{°2}	800 V (DC + ACpeak
	ACpeak) (as a	a value that meets the safet	
·		kimum allowable voltage, as nage the instrument when a	applied.)
Direct input ^{*10}			42 V (DC + ACpeak
Maximum rated voltage to earth (In combination with 700929 (10:1)/702902 (10:		400 Vrms (CAT I
In combination with 701901 + 70	1954 (1:1)' ⁹		400 Vrms (CAT I
Direct input ^{*11}			Cpeak) (CAT II, 30 Vrms
–3 dB point when AC coupled low	10 Hz or less	ttenuation point s (1 Hz or less when using t s when using the 701947)	the 700929/702902,
Vertical (voltage) axis accuracy		/: ±(0.5% of 10 div)	
Temperature coefficient	Zero point: ±	(0.05% of 10 div)/°C (Typ.)	
		% of 10 div)/°C (Typ.)	
Bandwidth limit	Full/500 Hz/	5 kHz/50 kHz/500 kHz	
Weight	Approx. 280	g	
High-Speed 1 MS/s, 16 Bit Isolat	ion Module (701251)	
Input channels	2		
Input type	Isolated unb	alanced	
Input coupling	AC, DC, and	GND	
Input connector	BNC connec	tor (isolated type)	
Input impedance	1 MΩ ±1%,	approx. 35 pF	
Common mode rejection ratio	80 dB (50/60) Hz) or more (Typ.)	
Maximum sample rate	1 MS/s		
Frequency range (-3 dB)"		Hz (5 m V/div to 20 V/div) Hz (1 m V/div, 2 m V/div)	
A/D conversion resolution	16 bit (2400	LSB/div)	
Voltage-axis sensitivity setting ¹²	Direct input:	1 m V/div to 20 V/div (1-2-	5 steps)
Maximum input voltage (1 kHz or In combination with 700929 (10:1		1)/701947 (100:1)"2	600 V (DC + ACpeak
In combination with 701901 + 70	1954 (1:1) ^{*6}		140 V (DC + ACpeak
Direct input ^{*10}			42 V (DC + ACpeak
Maximum rated voltage to earth (In combination with 700929 (10:1		1)/701947 (100:1)	a (O) 200 Virma (CAT II
In combination with 701001 + 70	1054 (1.1)*9		s (O), 300 Vrms (CAT II
In combination with 701901 + 70	1954 (1:1) °		s (O), 300 Vrms (CAT I
-3 dB point when AC coupled low	v frequency a		Cpeak) (CAT II, 30 Vrms)
		(0.1 Hz or less when using ss when using the 701947	
Vertical (voltage) axis accuracy ^{*1}	DC accuracy	v 5 mV/div to 20 V/div: ±(0 2 mV/div: ±(0.3% of 10 of 1 mV/div: ±(0.5% of 10 of 1 mV/div: ±(0.5% of 10 of	div)
Temperature coefficient	Zero point	5 mV/div to 20 V/div: ±(0 (Typ.)	0.02% of 10 div)/°C
		2 mV/div: ±(0.05% of 10	
		1 mV/div: ±(0.10% of 10	div)/ C (Typ.)
	Gain	1 mV/div: ±(0.10% of 10 1 mV/div to 20 V/div: ±(0 (Typ.)	
Bandwidth limit		1 mV/div to 20 V/div: ±(0	
Bandwidth limit Weight		1 mV/div to 20 V/div: ±(0 (Typ.) 4 kHz/40 kHz	
	Full/400 Hz/- Approx. 270	1 mV/div to 20 V/div: ±(((Typ.) 4 kHz/40 kHz g	
Weight	Full/400 Hz/- Approx. 270	1 mV/div to 20 V/div: ±(((Typ.) 4 kHz/40 kHz g	
Weight 4 CH 10 MS/s 16 Bit Isolation Mo	Full/400 Hz/ Approx. 270	1 mV/div to 20 V/div: ±(C (Typ.) 4 kHz/40 kHz 9	
Weight 4 CH 10 MS/s 16 Bit Isolation Mo Input channels	Full/400 Hz/- Approx. 270 Dodule (720256 4	1 mV/div to 20 V/div: ±(C (Typ.) 4 kHz/40 kHz 9) alanced	
Weight 4 CH 10 MS/s 16 Bit Isolation Mo Input channels Input type	Full/400 Hz// Approx. 270 Adule (720256 4 Isolated unb. AC, DC, and	1 mV/div to 20 V/div: ±(C (Typ.) 4 kHz/40 kHz 9) alanced	
Weight 4 CH 10 MS/s 16 Bit Isolation Mo Input channels Input type Input coupling	Full/400 Hz/A Approx. 270 odule (720256 4 Isolated unb AC, DC, and BNC connect	1 mV/div to 20 V/div: ±(C (Typ.) 4 kHz/40 kHz 9) alanced GND	
Weight 4 CH 10 MS/s 16 Bit Isolation Mo Input channels Input type Input coupling Input connector Input impedance	Full/400 Hz/- Approx. 270 odule (720256 4 Isolated unb AC, DC, and BNC connec 1 MΩ ±1%,	1 mV/div to 20 V/div: ±(C (Typ.) 4 kHz/40 kHz g j alanced GND tor (isolated type) approx. 32 pF	
Weight 4 CH 10 MS/s 16 Bit Isolation Mc Input channels Input type Input coupling Input connector Input impedance Common mode rejection ratio	Full/400 Hz// Approx. 270 dule (720256 4 Isolated unb AC, DC, and BNC connec 1 MΩ ±1%, 80 dB (50/60	1 mV/div to 20 V/div: ±(C (Typ.) 4 kHz/40 kHz g alanced GND tor (isolated type)	
Weight 4 CH 10 MS/s 16 Bit Isolation Mc Input channels Input type Input coupling Input connector Input impedance Common mode rejection ratio Maximum sample rate	Full/400 Hz// Approx. 270 dule (720256 4 Isolated unb AC, DC, and BNC connec 1 MΩ ±1%, 80 dB (50/60 10 MS/s	1 mV/div to 20 V/div: ±(C (Typ.) 4 kHz/40 kHz 9) alanced (GND tor (isolated type) approx. 32 pF 0 Hz) or more (Typ.)	
Weight 4 CH 10 MS/s 16 Bit Isolation Mc Input channels Input type Input coupling Input connector Input impedance Common mode rejection ratio Maximum sample rate Frequency range (–3 dB)'1	Full/400 Hz// Approx. 270 dule (720256 4 Isolated unb AC, DC, and BNC connec 1 MΩ ±1%, 80 dB (50/60 10 MS/s DC to 3 MHz	1 mV/div to 20 V/div: ±(C (Typ.) 4 kHz/40 kHz 9) alanced GND tor (isolated type) approx. 32 pF 0 Hz) or more (Typ.)	
Weight 4 CH 10 MS/s 16 Bit Isolation Mo Input channels Input type Input coupling Input connector Input impedance Common mode rejection ratio Maximum sample rate	Full/400 Hz// Approx. 270 dule (720256 4 Isolated unb AC, DC, and BNC connec 1 MΩ ±1%, 80 dB (50/60 10 MS/s DC to 3 MHz 16 bit (2400	1 mV/div to 20 V/div: ±(C (Typ.) 4 kHz/40 kHz 9) alanced GND tor (isolated type) approx. 32 pF 0 Hz) or more (Typ.)	0.02% of 10 div)/ °C

Maximum input voltage (1 kHz or	iless) 1)/702902 (10:1)/701947 (100:1) ⁻²	600 V (DC + ACpeał
In combination with 701901 + 70		200 V (DC + Acpeak
Direct input ^{*10}		42 V (DC + ACpeal
Maximum rated voltage to earth	1)/702902 (10:1)/701947 (100:1) ³ 701954 (1:1) ⁹ 300	Vrms (CAT II), 400 Vrms (C + ACpeak) (CAT II, 30 Vrm
-3 dB point when AC coupled lov		+ Acpeak) (CAT II, 30 VIII
	10 Hz or less (1 Hz or less when us 0.1 Hz or less when using 701947)	ing 700929, 702902,
Vertical (voltage) axis accuracy1	DC accuracy: ±(0.25% of 10 div)	
Temperature coefficient	Zero point: ±(0.02% of 10 div)/°C 50	
	±(0.1% of 10 div)/°C 5 n	nV/div to 20 mV/div (Typ.)
	Gain: ±(0.02% of 10 div)/°C (Typ.)	
Bandwidth limit	Full/AUTO/400 kHz/128 kHz/64 kH 8 kHz/4 kHz/2 kHz/1 kHz/500 Hz/2	
Weight	Approx. 310 g	
4 CH 1 MS/s 16 Bit Isolation Mo	dule (720254)	
Input channels	4	
Input type	Isolated unbalanced	
Input coupling	AC, DC, GND	
Input connector	BNC connector (isolated type)	
Input impedance	1 M Ω ±1%, approx. 35 pF	
Common mode rejection ratio	80 dB (50/60 Hz) or more (Typ.)	
Maximum sample rate	1 MS/s	
Frequency range (-3 dB)*1	DC to 300 kHz	
A/D conversion resolution	16 bit (2400 LSB/div)	(1051)
Voltage-axis sensitivity setting ¹²	Direct input: 10 mV/div to 50 V/div	(1-2-5 steps)
Maximum input voltage (1 kHz or In combination with 700929 (10:1	1)/702902 (10:1)/701947 (100:1) ²	600 V (DC + ACpea
In combination with 701901 + 70	1954 (1:1)*6	
	00 V (DC + ACpeak), 400 V (DC + AC	peak) (Maximum allowable
V	oltage, as a value that does not dama pplied.)	ge the instrument when
Direct input ^{*10}	oltage, as a value that does not dama pplied.) (1 kHz or less)	-
V(a) Direct input ^{*10} Maximum rated voltage to earth In combination with 700929 (10:** In combination with 701901 + 70	Itage, as a value that does not dama pplied.) (1 kHz or less) 1)/702902 (10:1)/701947 (100:1) ³ 400 11954 (1:1) ¹⁹ 400	42 V (DC + ACpeal Vrms (O), 300 Vrms (CAT) Vrms (O), 300 Vrms (CAT)
V(a) Direct input ^{*10} Maximum rated voltage to earth In combination with 700929 (10: In combination with 701901 + 70 Direct input ^{*11}	(1 kHz or less) (1 kHz or less) (1/202902 (10:1)/701947 (100:1) ³ 400 11954 (1:1) ³ 42 V (DC -	42 V (DC + ACpeal Vrms (O), 300 Vrms (CAT) Vrms (O), 300 Vrms (CAT)
V(a) Direct input ^{*10} Maximum rated voltage to earth (In combination with 700929 (10: In combination with 701901 + 70 Direct input ^{*11} -3 dB point when AC coupled low	(1 kHz or less) 1)/702902 (10:1)/701947 (100:1) ³ 400 11954 (1:1) ³ 400 42 V (DC - w frequency attenuation point 1 Hz or less (0.1 Hz or less when using the 701	42 V (DC + ACpeal Vrms (O), 300 Vrms (CAT I Vrms (O), 300 Vrms (CAT I + ACpeak) (CAT II, 30 Vrm sing the 700929, 702902,
Vor An an	(1 kHz or less) 1)/702902 (10:1)/701947 (100:1) ⁻³ 400 01954 (1:1) ⁻⁹ 42 V (DC - w frequency attenuation point 1 Hz or less (0.1 Hz or less when using the 701 0.01 Hz or less when using the 701 DC accuracy: ±(0.25% of 10 div)	42 V (DC + ACpeal Vrms (O), 300 Vrms (CAT I Vrms (O), 300 Vrms (CAT I + ACpeak) (CAT II, 30 Vrm sing the 700929, 702902, 947)
V(a) Direct input ^{*10} Maximum rated voltage to earth (In combination with 700929 (10: In combination with 701901 + 70 Direct input ^{*11} -3 dB point when AC coupled low	(1 kHz or less) 1)/702902 (10:1)/701947 (100:1) ³ 400 11954 (1:1) ³ 400 42 V (DC - w frequency attenuation point 1 Hz or less (0.1 Hz or less when using the 701	42 V (DC + ACpeal Vrms (O), 300 Vrms (CAT I Vrms (O), 300 Vrms (CAT I + ACpeak) (CAT II, 30 Vrm sing the 700929, 702902, 947)
Vor An an	(1 kHz or less) 1/702902 (10:1)/701947 (100:1) ³ 400 1954 (1:1) ³ 400 42 V (DC - 42 V (DC - 401 Hz or less (0.1 Hz or less when us 0.01 Hz or less (0.1 Hz or less when us 0.01 Hz or less (0.1 Hz or less when us 0.01 Hz or less (0.1 Hz or less when us 0.01 Hz or less (0.1 Hz or less (0.1 Or lov))'' Caccuracy: ±(0.25% of 10 div)''C (1	42 V (DC + ACpeal Vrms (O), 300 Vrms (CAT I) Vrms (O), 300 Vrms (CAT I) → ACpeak) (CAT II, 30 Vrm sing the 700929, 702902, 947)
Vo ar Direct input ^{*10} Maximum rated voltage to earth In combination with 700929 (10: In combination with 701901 + 70 Direct input ^{*11} -3 dB point when AC coupled low Vertical (voltage) axis accuracy ^{*1} Temperature coeffi cient	(1 kHz or less) 1)/702902 (10:1)/701947 (100:1) ⁻³ 400 11954 (1:1) ⁻⁹ 400 42 V (DC - w frequency attenuation point 1 Hz or less (0.1 Hz or less when us 0.01 Hz or less when using the 701 DC accuracy: ±(0.25% of 10 div)' ^{-C} (Tg). Zero point: ±(0.02% of 10 div)' ^{-C} (Typ.) Full/6.25 Hz/12.5 Hz/25 Hz/50 Hz/	42 V (DC + ACpea Vrms (O), 300 Vrms (CAT : Vrms (O), 300 Vrms (CAT : ACpeak) (CAT II, 30 Vrm sing the 700929, 702902, 947)
Vo ar Direct input ^{*10} Maximum rated voltage to earth i In combination with 700929 (10: In combination with 701901 + 70 Direct input ^{*11} -3 dB point when AC coupled low Vertical (voltage) axis accuracy ^{*1} Temperature coeffi cient Bandwidth limit Weight High-Speed 10 MS/s, 12 Bit Non	(1 kHz or less) 1)/702902 (10:1)/701947 (100:1) ³ 400 11954 (1:1) ³ 400 42 V (DC- w frequency attenuation point 1 Hz or less (0.1 Hz or less when using the 701 DC accuracy: ±(0.25% of 10 div)'C (10 Zero point: ±(0.02% of 10 div)'C (17 Gain: ±(0.02% of 10 div)'C (17 800 Hz/1.6 kHz/3.2 kHz/6.4 kHz/1: Approx. 310 g	42 V (DC + ACpea Vrms (O), 300 Vrms (CAT : Vrms (O), 300 Vrms (CAT : ACpeak) (CAT II, 30 Vrm sing the 700929, 702902, 947)
Vertical (voltage) axis accuracy' Temperature coefficient Bandwidth limit Weight High-Speed 10 MS/s, 12 Bit Non Input channels	(1 kHz or less) 1)/702902 (10:1)/701947 (100:1) ⁻³ 400 11/702902 (10:1)/701947 (100:1) ⁻³ 400 11/702902 (10:1)/701947 (100:1) ⁻³ 400 11/702902 (10:1)/701947 (100:1) ⁻³ 400 42 V (DC- w frequency attenuation point 1 Hz or less (0.1 Hz or less when using the 701 DC accuracy: ±(0.25% of 10 div)/ ⁻ C (1 Gain: ±(0.02% of 10 div)/ ⁻ C (1 Gain: ±(0.02% of 10 div)/ ⁻ C (1 800 Hz/1.6 kHz/3.2 kHz/6.4 kHz/1: Approx. 310 g Isolation Module (701255) 2	42 V (DC + ACpea Vrms (O), 300 Vrms (CAT : Vrms (O), 300 Vrms (CAT : ACpeak) (CAT II, 30 Vrm sing the 700929, 702902, 947)
Vertical (voltage) axis accuracy' Temperature coefficient Bandwidth limit Weight High-Speed 10 MS/s, 12 Bit Non Input channels Input type	(1 kHz or less) 1)/702902 (10:1)/701947 (100:1) ⁻³ 400 11/702902 (10:1)/701947 (100:1) ⁻³ 400 11/702902 (10:1)/701947 (100:1) ⁻³ 400 11/702902 (10:1)/701947 (100:1) ⁻³ 400 42 V (DC- w frequency attenuation point 1 Hz or less (0.1 Hz or less when using the 701 DC accuracy: ±(0.25% of 10 div) ⁻⁷ C (Typ.) DC accuracy: ±(0.25% of 10 div) ⁻⁷ C (Typ.) Full/6.25 Hz/12.5 Hz/25 Hz/50 Hz/ 800 Hz/1.6 KHz/3.2 kHz/6.4 kHz/1: Approx. 310 g	42 V (DC + ACpea Vrms (O), 300 Vrms (CAT : Vrms (O), 300 Vrms (CAT : ACpeak) (CAT II, 30 Vrm sing the 700929, 702902, 947)
Vertical (voltage) axis accuracy ¹¹ Weight High-Speed 10 MS/s, 12 Bit Non Input coupling	(1 kHz or less) 1)/702902 (10:1)/701947 (100:1) ⁻³ 400 (1 kHz or less) 1)/702902 (10:1)/701947 (100:1) ⁻³ 400 1/702902 (10:1)/701947 (100:1) ⁻³ 400 42 V (DC- w frequency attenuation point 1 Hz or less (0.1 Hz or less when using the 701 DC accuracy: ±(0.25% of 10 div) ⁻² (T DC accuracy: ±(0.25% of 10 div) ⁻² (T Gain: ±(0.02% of 10 div)/ ⁻² (Typ.) Full/6.25 Hz/12.5 Hz/25 Hz/50 Hz/ 800 Hz/1.6 KHz/3.2 kHz/6.4 kHz/1: Approx. 310 g	42 V (DC + ACpea Vrms (O), 300 Vrms (CAT : Vrms (O), 300 Vrms (CAT : ACpeak) (CAT II, 30 Vrm sing the 700929, 702902, 947)
Vertical (voltage) axis accuracy' Temperature coefficient Bandwidth limit Weight High-Speed 10 MS/s, 12 Bit Non Input coupling Input connector	(1 kHz or less) 1)/702902 (10:1)/701947 (100:1) ⁻³ 400 (1 kHz or less) 1)/702902 (10:1)/701947 (100:1) ⁻³ 400 1/702902 (10:1)/701947 (100:1) ⁻³ 400 42 V (DC - w frequency attenuation point 1 Hz or less (0.1 Hz or less when using the 701 DC accuracy: ±(0.25% of 10 div) ⁻² C (Typ.) Cacin: ±(0.02% of 10 div) ⁻² C (Typ.) Full/6.25 Hz/12.5 Hz/25 Hz/50 Hz/ 800 Hz/1.6 KHz/3.2 kHz/6.4 kHz/1: Approx. 310 g -Isolation Module (701255) 2 Non-isolated, unbalanced AC, DC, and GND BNC connector (metallic type)	42 V (DC + ACpea Vrms (O), 300 Vrms (CAT : Vrms (O), 300 Vrms (CAT : ACpeak) (CAT II, 30 Vrm sing the 700929, 702902, 947)
Vertical (voltage) axis accuracy ¹¹ Certificat (voltage) axis accuracy ¹¹ Temperature coefficient Bandwidth limit Weight High-Speed 10 MS/s, 12 Bit Non Input channels Input ype Input coupling Input connector Input impedance	(1 kHz or less) 1)/702902 (10:1)/701947 (100:1) ⁻³ 400 (1 kHz or less) 1)/702902 (10:1)/701947 (100:1) ⁻³ 400 1/702902 (10:1)/701947 (100:1) ⁻³ 400 42 V (DC- w frequency attenuation point 1 Hz or less (0.1 Hz or less when using the 701 DC accuracy: ±(0.25% of 10 div) ⁻² (T DC accuracy: ±(0.25% of 10 div) ⁻² (T Gain: ±(0.02% of 10 div)/ ⁻² (Typ.) Full/6.25 Hz/12.5 Hz/25 Hz/50 Hz/ 800 Hz/1.6 KHz/3.2 kHz/6.4 kHz/1: Approx. 310 g	42 V (DC + ACpea Vrms (O), 300 Vrms (CAT : Vrms (O), 300 Vrms (CAT : ACpeak) (CAT II, 30 Vrm sing the 700929, 702902, 947)
Vertical (voltage) axis accuracy' Temperature coefficient Bandwidth limit Weight High-Speed 10 MS/s, 12 Bit Non Input coupling Input connector	bitage, as a value that does not dama pplied.) (1 kHz or less) 1)/702902 (10:1)/701947 (100:1) ⁻³ 400 1/702902 (10:1)/701947 (100:1) ⁻³ 400 1/702902 (10:1)/701947 (100:1) ⁻³ 400 42 V (DC - w frequency attenuation point 1 Hz or less (0.1 Hz or less when using the 701 DC accuracy: ±(0.25% of 10 div)/°C (Tgp.) Zero point: ±(0.02% of 10 div)/°C (Typ.) Full/6.25 Hz/12.5 Hz/25 Hz/50 Hz/ 800 Hz/1.6 KHz/3.2 kHz/6.4 kHz/1: Approx. 310 g Fisolation Module (701255) 2 Non-isolated, unbalanced AC, DC, and GND BNC connector (metallic type) 1 MΩ ±1%, approx. 35 pF	42 V (DC + ACpea Vrms (O), 300 Vrms (CAT : Vrms (O), 300 Vrms (CAT : ACpeak) (CAT II, 30 Vrm sing the 700929, 702902, 947)
Vertical (voltage) axis accuracy ¹¹ Maximum rated voltage to earth In combination with 700929 (10: In combination with 701901 + 70 Direct input ¹¹ -3 dB point when AC coupled low Vertical (voltage) axis accuracy ¹¹ Temperature coeffi cient Bandwidth limit Weight High-Speed 10 MS/s, 12 Bit Non Input channels Input coupling Input coupling Input connector Input impedance Maximum sample rate Frequency range (–3 dB) ¹	oltage, as a value that does not dama pplied.) (1 kHz or less) 1)/702902 (10:1)/701947 (100:1) ⁻³ 400 1954 (1:1) ⁻⁹ 400 42 V (DC- w frequency attenuation point 1 Hz or less (0.1 Hz or less when us using the 701 DC accuracy: ±(0.25% of 10 div)/°C (Typ.) Eul/0.2% of 10 div//°C (Typ.) Full/6.25 Hz/12.5 Hz/50 Hz/ 800 Hz/1.6 kHz/3.2 kHz/6.4 kHz/1. Approx. 310 g I-Isolation Module (701255) 2 Non-isolated, unbalanced AC, DC, and GND BNC connector (metallic type) 1 MΩ ±1%, approx. 35 pF 10 MS/s	42 V (DC + ACpea Vrms (O), 300 Vrms (CAT : Vrms (O), 300 Vrms (CAT : ACpeak) (CAT II, 30 Vrm sing the 700929, 702902, 947)
Vertical (voltage) axis accuracy ¹¹ Maximum rated voltage to earth i In combination with 700929 (10:1 In combination with 701901 + 70 Direct input ¹¹ -3 dB point when AC coupled low Vertical (voltage) axis accuracy ¹¹ Temperature coefficient Bandwidth limit Weight High-Speed 10 MS/s, 12 Bit Non Input channels Input coupling Input coupling Input connector Input impedance Maximum sample rate	oltage, as a value that does not dama pplied.) (1 kHz or less) 1)/702902 (10:1)/701947 (100:1) ⁻³ 400 11954 (1:1) ⁻⁹ 400 42 V (DC- w frequency attenuation point 1 Hz or less (0.1 Hz or less when us only file 701 DC accuracy: ±(0.25% of 10 div)'C (Tgp.) Eul/0.2% of 10 div/'C (Typ.) Full/6.25 Hz/12.5 Hz/50 Hz/ 800 Hz/1.6 kHz/3.2 kHz/6.4 kHz/1. Approx. 310 g I-Isolation Module (701255) 2 Non-isolated, unbalanced AC, DC, and GND BNC connector (metallic type) 1 MΩ ±1%, approx. 35 pF 10 MS/s DC to 3 MHz	42 V (DC + ACpeal 42 V (DC + ACpeal Vrms (O), 300 Vrms (CAT I Vrms (O), 300 Vrms (CAT I + ACpeak) (CAT II, 30 Vrm sing the 700929, 702902, 947) 100 Hz/200 Hz/400 Hz/ 2.8 kHz/40 kHz
Vertical (voltage) axis accuracy ¹¹ Maximum rated voltage to earth i In combination with 700929 (10:1) In combination with 701901 + 70 Direct input ¹¹¹ —3 dB point when AC coupled low Vertical (voltage) axis accuracy ¹¹ Temperature coefficient Bandwidth limit Weight High-Speed 10 MS/s, 12 Bit Non Input channels Input coupling Input coupling Input connector Input impedance Maximum sample rate Frequency range (–3 dB) ¹¹ A/D conversion resolution	ohitage, as a value that does not dama pplied.) (1 kHz or less) 1)/702902 (10:1)/701947 (100:1) ⁻³ 400 11954 (1:1) ⁻⁹ 400 42 V (DC - w frequency attenuation point 1 Hz or less (0.1 Hz or less when us 0.01 Hz or less (0.1 Hz or less when us 0.01 Hz or less when using the 701 DC accuracy: ±(0.25% of 10 div)/°C (Tgp.) Zero point: ±(0.02% of 10 div)/°C (Typ.) Full/6.25 Hz/12.5 Hz/25 Hz/50 Hz/ 800 Hz/1.6 kHz/3.2 kHz/6.4 kHz/1: Approx. 310 g I-Isolation Module (701255) 2 Non-isolated, unbalanced AC, DC, and GND BNC connector (metallic type) 1 MΩ ±1%, approx. 35 pF 10 MS/s DC to 3 MHz 12 bit (150 LSB/div) Direct input: 5 mV/div to 20 V/div (1	42 V (DC + ACpeal 42 V (DC + ACpeal Vrms (O), 300 Vrms (CAT I Vrms (O), 300 Vrms (CAT I + ACpeak) (CAT II, 30 Vrm sing the 700929, 702902, 947) 100 Hz/200 Hz/400 Hz/ 2.8 kHz/40 kHz
Variation of the set o	ohitage, as a value that does not dama pplied.) (1 kHz or less) 1)/702902 (10:1)/701947 (100:1) ⁻³ 400 11954 (1:1) ⁻⁹ 400 42 V (DC - w frequency attenuation point 1 Hz or less (0.1 Hz or less when us 0.01 Hz or less (0.1 Hz or less when us 0.01 Hz or less when using the 701 DC accuracy: ±(0.25% of 10 div)/°C (Tgp.) Zero point: ±(0.02% of 10 div)/°C (Typ.) Full/6.25 Hz/12.5 Hz/25 Hz/50 Hz/ 800 Hz/1.6 kHz/3.2 kHz/6.4 kHz/1: Approx. 310 g I-Isolation Module (701255) 2 Non-isolated, unbalanced AC, DC, and GND BNC connector (metallic type) 1 MΩ ±1%, approx. 35 pF 10 MS/s DC to 3 MHz 12 bit (150 LSB/div) Direct input: 5 mV/div to 20 V/div (1	42 V (DC + ACpeal Vrms (O), 300 Vrms (CAT I) Vrms (O), 300 Vrms (CAT I) + ACpeak) (CAT II, 30 Vrm sing the 700929, 702902, 947)
Vertical (voltage) axis accuracy'' Temperature coefficient Bandwidth limit Weight High-Speed 10 MS/s, 12 Bit Non Input channels Input coupling Input coupling Input coupling Input conversion resolution Voltage-axis sensitivity setting''2 Maximum input voltage (1 kHz or In combination with 701940 (10:1)	oblege, as a value that does not dama pplied.) (1 kHz or less) 1)/702902 (10:1)/701947 (100:1) ⁻³ 400 11954 (1:1) ⁻⁹ 400 42 V (DC - w frequency attenuation point 1 Hz or less (0.1 Hz or less when us 0.01 Hz or less (0.1 Hz or less when us 0.01 Hz or less when using the 701 DC accuracy: ±(0.25% of 10 div)/°C (Tgp.) Zero point: ±(0.02% of 10 div)/°C (Typ.) Full/6.25 Hz/12.5 Hz/25 Hz/50 Hz/ 800 Hz/1.6 kHz/3.2 kHz/6.4 kHz/1: Approx. 310 g F-Isolation Module (701255) 2 Non-isolated, unbalanced AC, DC, and GND BNC connector (metallic type) 1 MΩ ±1%, approx. 35 pF 10 MS/s DC to 3 MHz 12 bit (150 LSB/div) Direct input: 5 mV/div to 20 V/div (1 *tess) 0 600 V (DC + ACpeak)	42 V (DC + ACpea 42 V (DC + ACpea Vrms (O), 300 Vrms (CAT : + ACpeak) (CAT II, 30 Vrm sing the 700929, 702902, 947) yp.) 100 Hz/200 Hz/400 Hz/ 2.8 kHz/40 kHz -2-5 steps) at meets the safety lowable voltage, as a value
Vertical (voltage) axis accuracy'' Temperature coefficient Bandwidth limit Weight High-Speed 10 MS/s, 12 Bit Non Input channels Input coupling Input coupling Input coupling Input conversion resolution Voltage-axis sensitivity setting''2 Maximum input voltage (1 kHz or In combination with 701940 (10:1)	bitage, as a value that does not dama pplied.) (1 kHz or less) 1)/702902 (10:1)/701947 (100:1) ³ 400 1954 (1:1) ⁹ 400 42 V (DC - w frequency attenuation point 1 Hz or less (0.1 Hz or less when us 0.01 Hz or less when using the 701 DC accuracy: ±(0.25% of 10 div)/°C (1 Gain: ±(0.02% of 10 div)/°C (170.) Fuil/6.25 Hz/12.5 Hz/25 Hz/50 Hz/ 800 Hz/1.6 kHz/3.2 kHz/6.4 kHz/1: Approx. 310 g F-Isolation Module (701255) 2 Non-isolated, unbalanced AC, DC, and GND BNC connector (metallic type) 1 MΩ ±1%, approx. 35 pF 10 MS/s DC to 3 MHz 12 bit (150 LS8/div) Direct input: 5 mV/div to 20 V/div (1 fess) 0600 V (DC + ACpeak) (as a value th standard) 250 V (DC + ACpeak) (Maximum all that does not damage the instrume	42 V (DC + ACpeal 42 V (DC + ACpeal Vrms (O), 300 Vrms (CAT I + ACpeak) (CAT II, 30 Vrm sing the 700929, 702902, 947)
Vir Direct input ¹¹⁰ Maximum rated voltage to earth if In combination with 700929 (10:1) In combination with 701901 + 70 Direct input ¹¹¹ -3 dB point when AC coupled low Vertical (voltage) axis accuracy ¹¹ -3 dB point when AC coupled low Vertical (voltage) axis accuracy ¹¹ Temperature coefficient Bandwidth limit Weight High-Speed 10 MS/s, 12 Bit Non Input channels Input coupling Input coupling Input coupling Input coupling Input connector Input impedance Maximum sample rate Frequency range (-3 dB) ¹ A/D conversion resolution Voltage-axis sensitivity setting ¹² Maximum input voltage (1 kHz or In combination with 701940 (10:1) Direct input -3 dB point when AC coupled low	bitage, as a value that does not dama pplied.) (1 kHz or less) 1)/702902 (10:1)/701947 (100:1) ⁻³ 400 1792902 (10:1)/701947 (100:1) ⁻³ 400 122 V (DC - w frequency attenuation point 1 Hz or less (0.1 Hz or less when us 0.01 Hz or less when using the 701 DC accuracy: ±(0.25% of 10 div)/°C (1 Gain: ±(0.02% of 10 div)/°C (170) Fuil/6.25 Hz/12.5 Hz/25 Hz/50 Hz/ 800 Hz/1.6 kHz/3.2 kHz/6.4 kHz/1: Approx. 310 g F-Isolation Module (701255) 2 Non-isolated, unbalanced AC, DC, and GND BNC connector (metallic type) 1 MΩ ±1%, approx. 35 pF 10 MS/s DC to 3 MHz 12 bit (150 LSB/div) Direct input: 5 mV/div to 20 V/div (1 fless) 0600 V (DC + ACpeak) (as a value th standard) 250 V (DC + ACpeak) (Maximum all that does not damage the instrume w frequency attenuation point 10 Hz or less (1 Hz or less when us	42 V (DC + ACpeal 42 V (DC + ACpeal Vrms (O), 300 Vrms (CAT I + ACpeak) (CAT II, 30 Vrm sing the 700929, 702902, 947)
Va Direct input ^{*10} Maximum rated voltage to earth i In combination with 700929 (10:* In combination with 701901 + 70 Direct input ^{*11} -3 dB point when AC coupled low Vertical (voltage) axis accuracy ^{*1} Temperature coeffi cient Bandwidth limit Weight High-Speed 10 MS/s, 12 Bit Non Input channels Input coupling Input coupling Input coupling Input connector Input impedance Maximum sample rate Frequency range (-3 dB) ^{*1} A/D conversion resolution Voltage-axis sensitivity setting ^{*12} Maximum input voltage (1 kHz or In combination with 701940 (10:1) Direct input	bitage, as a value that does not dama pplied.) (1 kHz or less) 1)/702902 (10:1)/701947 (100:1) ⁻³ 400 11954 (1:1) ⁻⁹ 400 42 V (DC - w frequency attenuation point 1 Hz or less (0.1 Hz or less when us on using the 701 DC accuracy: ±(0.25% of 10 div)'C (Tgain: ±(0.02% of 10 div)/°C (Typ.) Full/6.25 Hz/12.5 Hz/55 Hz/50 Hz/ 200 V [DC + AL2.5 Hz/25 Hz/50 Hz/ 800 Hz/1.6 kHz/3.2 kHz/6.4 kHz/1: Approx. 310 g I-Isolation Module (701255) 2 Non-isolated, unbalanced AC, DC, and GND BNC connector (metallic type) 1 MΩ ±1%, approx. 35 pF 10 MS/s DC to 3 MHz 12 bit (150 LSB/div) Direct input: 5 mV/div to 20 V/div (1 fless) 0 600 V (DC + ACpeak) (as a value th standard) 250 V (DC + ACpeak) (as a value th standard) 250 V (DC + ACpeak) (Maximum all that does not damage the instrume w frequency attenuation point 10 Hz or less (1 Hz or less when us DC accuracy: ±(0.5% of 10 div) <t< td=""><td>42 V (DC + ACpeal 42 V (DC + ACpeal Vrms (O), 300 Vrms (CAT I) + ACpeak) (CAT II, 30 Vrm sing the 700929, 702902, 947) </td></t<>	42 V (DC + ACpeal 42 V (DC + ACpeal Vrms (O), 300 Vrms (CAT I) + ACpeak) (CAT II, 30 Vrm sing the 700929, 702902, 947)
Vir Direct input ^{*10} Maximum rated voltage to earth if In combination with 700929 (10:*) In combination with 701901 + 70 Direct input ^{*11} -3 dB point when AC coupled low Vertical (voltage) axis accuracy ^{*1} Temperature coefficient Bandwidth limit Weight High-Speed 10 MS/s, 12 Bit Non Input channels Input coupling Input coupling Input connector Input impedance Maximum sample rate Frequency range (-3 dB) ^{*1} A/D conversion resolution Voltage-axis sensitivity setting ^{*12} Maximum input voltage (1 kHz or In combination with 701940 (10:1) Direct input -3 dB point when AC coupled low Vertical (voltage) axis accuracy ^{*1}	bitage, as a value that does not dama pplied.) (1 kHz or less) 1)/702902 (10:1)/701947 (100:1) ³ 400 1954 (1:1) ⁹ 400 42 V (DC - w frequency attenuation point 1 Hz or less (0.1 Hz or less when us 0.01 Hz or less when using the 701 DC accuracy: ±(0.25% of 10 div)/°C (1 Gain: ±(0.02% of 10 div)/°C (170.) Fuil/6.25 Hz/12.5 Hz/25 Hz/50 Hz/ 800 Hz/1.6 kHz/3.2 kHz/6.4 kHz/1: Approx. 310 g L-Isolation Module (701255) 2 Non-isolated, unbalanced AC, DC, and GND BNC connector (metallic type) 1 MΩ ±1%, approx. 35 pF 10 MS/s DC to 3 MHz 12 bit (150 LSB/div) Direct input: 5 mV/div to 20 V/div (1 tess) 0600 V (DC + ACpeak) (as a value th standard) 250 V (DC + ACpeak) (Maximum all that does not damage the instrume all that does not damage the inst	42 V (DC + ACpeal 42 V (DC + ACpeal Vrms (O), 300 Vrms (CAT I) + ACpeak) (CAT II, 30 Vrm sing the 700929, 702902, 947) yp.) 100 Hz/200 Hz/400 Hz/ 2.8 kHz/40 kHz -2-5 steps) at meets the safety lowable voltage, as a value nt when applied.) ing the 701940) -2-5

nput channels	2
nput type	Isolated unbalanced
nput coupling	AC, DC, GND, AC-RMS, and DC-RMS
nput connector	Plug-in terminal (safety terminal)
nput impedance	2 MΩ ±1%, Approx. 12 pF
Common mode rejection ratio	80 dB (50/60 Hz) or more (Typ.)
laximum sample rate	1 MS/s
requency range (–3 dB) [™]	Waveform observation mode: DC to 300 kHz RMS observation mode: DC, 40 Hz to 100 kHz
VD conversion resolution	16 bit (2400 LSB/div)
oltage-axis sensitivity setting"12	20 mV/div to 200 V/div (1-2-5 steps)
Aximum input voltage (1 kHz or In combination with (758933 or 7)	
Direct input ¹⁰	42 V (DC + ACpeak)
faximum rated voltage to earth (In combination with (758933 or 70	
Direct input	42 V (DC + ACpeak) (CAT II, 30 Vrms)*11
3 dB point when AC coupled lov	v frequency attenuation point 1 Hz or less
Vertical (voltage) axis accuracy ¹ Waveform observation mode	DC accuracy: ±(0.25% of 10 div)
RMS observation mode	DC accuracy: ±(1.0% of 10 div)
Crest factor 2 or less: ±(2.0% Crest factor 3 or less: ±(3.0% 1 kHz to 10 kHz: Add 1.0% o	
Femperature coefficient (Wavefor	m observation mode) Zero point: ±(0.02% of 10 div)/°C (Typ.) Gain: ±(0.02% of 10 div)/°C (Typ.)
Bandwidth limit	Full/400 Hz/4 kHz/40 kHz/AAF
Response time (RMS observation	n mode) Rising (0 to 90% of 10 div): 120 ms (Typ.) Falling (100 to 10% of 10 div): 280 ms (Typ.)
Weight	Approx. 280 g
I6 CH Voltage Input Module (720 nput channels nput type	16 Isolated unbalanced
nput channels nput type	16
nput channels nput type nput coupling	16 Isolated unbalanced
iput channels iput type iput coupling laximum sample rate	16 Isolated unbalanced DC, GND (Selectable for each sub-CH)
put channels put type put coupling laximum sample rate requency range (-3 dB) ¹¹	16 Isolated unbalanced DC, GND (Selectable for each sub-CH) 200 kS/s (single CH) [10 kS/s when using 16 CH]
put channels put type put coupling laximum sample rate requency range (-3 dB)' ¹ /D conversion resolution	16 Isolated unbalanced DC, GND (Selectable for each sub-CH) 200 kS/s (single CH) [10 kS/s when using 16 CH] DC to 5 kHz
put channels put type put coupling laximum sample rate requency range (-3 dB)' ¹ /D conversion resolution oltage-axis sensitivity setting	16 Isolated unbalanced DC, GND (Selectable for each sub-CH) 200 kS/s (single CH) [10 kS/s when using 16 CH] DC to 5 kHz 16 bit (2400 LSB/div) 200 mV/div to 2 V/div (1-2-5 steps)
nput channels nput type nput coupling Maximum sample rate requency range (–3 dB)' ¹ //D conversion resolution foltage-axis sensitivity setting Maximum input voltage (1kHz or 1	16 Isolated unbalanced DC, GND (Selectable for each sub-CH) 200 kS/s (single CH) [10 kS/s when using 16 CH] DC to 5 kHz 16 bit (2400 LSB/div) 200 mV/div to 2 V/div (1-2-5 steps) Iess) Direct input: 42 V (DC + ACpeak)
put channels put type put coupling laximum sample rate requency range (-3 dB)' ¹ /D conversion resolution oltage-axis sensitivity setting laximum input voltage (1kHz or l laximum rated voltage to earth (16 Isolated unbalanced DC, GND (Selectable for each sub-CH) 200 kS/s (single CH) [10 kS/s when using 16 CH] DC to 5 kHz 16 bit (2400 LSB/div) 200 mV/div to 2 V/div (1-2-5 steps) Eess) Direct input: 42 V (DC + ACpeak) 1 kHz or less)
put channels put type put coupling laximum sample rate requency range (-3 dB)'1 /D conversion resolution oltage-axis sensitivity setting laximum input voltage (1kHz or l laximum rated voltage to earth (16 Isolated unbalanced DC, GND (Selectable for each sub-CH) 200 kS/s (single CH) [10 kS/s when using 16 CH] DC to 5 kHz 16 bit (2400 LSB/div) 200 mV/div to 2 V/div (1-2-5 steps) less) Direct input: 42 V (DC + ACpeak) 1 kHz or less) Direct input: 42 V (DC + ACpeak) (CAT II, 30 Vrms)
put channels put type put coupling aximum sample rate requency range (–3 dB)' ¹ /D conversion resolution oltage-axis sensitivity setting aximum input voltage (1kHz or l aximum rated voltage to earth (ertical (voltage) axis accuracy put connector	16 Isolated unbalanced DC, GND (Selectable for each sub-CH) 200 kS/s (single CH) [10 kS/s when using 16 CH] DC to 5 kHz 16 bit (2400 LSB/div) 200 mV/div to 2 V/div (1-2-5 steps) less) Direct input: 42 V (DC + ACpeak) 1 kHz or less) Direct input: 42 V (DC + ACpeak) (CAT II, 30 Vrms) DC accuracy: ±(0.3% of 10 div)
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but channels but type but coupling aximum sample rate equency range (–3 dB) ¹¹ D conversion resolution ltage-axis sensitivity setting aximum input voltage (1kHz or l aximum rated voltage to earth (rtical (voltage) axis accuracy but connector but impedance pommon mode rejection ratio mperature coefficient andwidth limit eight iversal (Voltage/Temp.) Modul	16 Isolated unbalanced DC, GND (Selectable for each sub-CH) 200 kS/s (single CH) [10 kS/s when using 16 CH] DC to 5 kHz 16 bit (2400 LSB/div) 200 mV/div to 2 V/div (1-2-5 steps) ess) Direct input: 42 V (DC + ACpeak) 1 kHz or less) Direct input: 42 V (DC + ACpeak) (CAT II, 30 Vrms) DC accuracy: ±(0.3% of 10 div) Spring-type terminal (removable per 8 CH) 1 MΩ ±1% 80 dB (50/60 Hz) or more (Typ.) Zero point: ±(0.02% of 10 div)/°C (Typ.) Gain: ±(0.02% of 10 div)/°C (Typ.) Full/500 Hz (Selectable for each sub-CH) Approx. 230 g e (701261) / with AAF (701262)
put channels put type put coupling aximum sample rate requency range (-3 dB)'1 /D conversion resolution oltage-axis sensitivity setting aximum input voltage (1kHz or l aximum rated voltage to earth (ertical (voltage) axis accuracy put connector put impedance ommon mode rejection ratio emperature coefficient andwidth limit feight niversal (Voltage/Temp.) Modul unction	16 Isolated unbalanced DC, GND (Selectable for each sub-CH) 200 kS/s (single CH) [10 kS/s when using 16 CH] DC to 5 kHz 16 bit (2400 LSB/div) 200 mV/div to 2 V/div (1-2-5 steps) eess) Direct input: 42 V (DC + ACpeak) 1 kHz or less) Direct input: 42 V (DC + ACpeak) (CAT II, 30 Vrms) DC accuracy: ±(0.3% of 10 div) Spring-type terminal (removable per 8 CH) 1 MΩ ±1% 80 dB (50/60 Hz) or more (Typ.) Zero point: ±(0.02% of 10 div)/°C (Typ.) Gain: ±(0.02% of 10 div)/°C (Typ.) Gain: ±(0.02% of 10 div)/°C (Typ.) Full/500 Hz (Selectable for each sub-CH) Approx. 230 g e (701261) / with AAF (701262) Temperature (thermocouple) or voltage measurement
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put channels put type put coupling faximum sample rate requency range (-3 dB)'1 ////////////////////////////////////	16 Isolated unbalanced DC, GND (Selectable for each sub-CH) 200 kS/s (single CH) [10 kS/s when using 16 CH] DC to 5 kHz 16 bit (2400 LSB/div) 200 mV/div to 2 V/div (1-2-5 steps) eess) Direct input: 42 V (DC + ACpeak) 1 kHz or less) Direct input: 42 V (DC + ACpeak) (CAT II, 30 Vrms) DC accuracy: ±(0.3% of 10 div) Spring-type terminal (removable per 8 CH) 1 MΩ ±1% 80 dB (50/60 Hz) or more (Typ.) Zero point: ±(0.02% of 10 div)/°C (Typ.) Gain: ±(0.02% of 10 div)/°C (Typ.) Full/500 Hz (Selectable for each sub-CH) Approx. 230 g Ie (701261) / with AAF (701262) Temperature (thermocouple) or voltage measurement (switchable) 2
put channels put type put coupling faximum sample rate requency range (-3 dB)'1 ////////////////////////////////////	16 Isolated unbalanced DC, GND (Selectable for each sub-CH) 200 kS/s (single CH) [10 kS/s when using 16 CH] DC to 5 kHz 16 bit (2400 LSB/div) 200 mV/div to 2 V/div (1-2-5 steps) eess) Direct input: 42 V (DC + ACpeak) 1 kHz or less) Direct input: 42 V (DC + ACpeak) (CAT II, 30 Vrms) DC accuracy: ±(0.3% of 10 div) Spring-type terminal (removable per 8 CH) 1 MΩ ±1% 80 dB (50/60 Hz) or more (Typ.) Zero point: ±(0.02% of 10 div)/°C (Typ.) Gain: ±(0.02% of 10 div)/°C (Typ.) Full/500 Hz (Selectable for each sub-CH) Approx. 230 g 1e (701261) / with AAF (701262) Temperature (thermocouple) or voltage measurement (switchable) 2 Isolated unbalanced
put channels put type put coupling faximum sample rate requency range (-3 dB)'1 //D conversion resolution foltage-axis sensitivity setting faximum input voltage (1kHz or l faximum rated voltage to earth (fertical (voltage) axis accuracy put connector put impedance common mode rejection ratio emperature coefficient fandwidth limit Veight Iniversal (Voltage/Temp.) Modul unction put channels put coupling put connector	16 Isolated unbalanced DC, GND (Selectable for each sub-CH) 200 kS/s (single CH) [10 kS/s when using 16 CH] DC to 5 kHz 16 bit (2400 LSB/div) 200 mV/div to 2 V/div (1-2-5 steps) eess) Direct input: 42 V (DC + ACpeak) 1 kHz or less) Direct input: 42 V (DC + ACpeak) (CAT II, 30 Vrms) DC accuracy: ±(0.3% of 10 div) Spring-type terminal (removable per 8 CH) 1 MΩ ±1% 80 dB (50/60 Hz) or more (Typ.) Zero point: ±(0.02% of 10 div)/°C (Typ.) Gai: ±(0.02% of 10 div)/°C (Typ.) Full/500 Hz (Selectable for each sub-CH) Approx. 230 g isolated unbalanced 2 Isolated unbalanced TC (thermocouple), DC, AC, and GND
nput channels	16 Isolated unbalanced DC, GND (Selectable for each sub-CH) 200 kS/s (single CH) [10 kS/s when using 16 CH] DC to 5 kHz 16 bit (2400 LSB/div) 200 mV/div to 2 V/div (1-2-5 steps) eess) Direct input: 42 V (DC + ACpeak) 1 kHz or less) Direct input: 42 V (DC + ACpeak) (CAT II, 30 Vrms) DC accuracy: ±(0.3% of 10 div) Spring-type terminal (removable per 8 CH) 1 MΩ ±1% 80 dB (50/60 Hz) or more (Typ.) Zero point: ±(0.02% of 10 div)/°C (Typ.) Gain: ±(0.02% of 10 div)/°C (Typ.) Full/500 Hz (Selectable for each sub-CH) Approx. 230 g e (701261) / with AAF (701262) Temperature (thermocouple) or voltage measurement (switchable) 2 Isolated unbalanced TC (thermocouple), DC, AC, and GND Binding post
nput channels nput type nput coupling Maximum sample rate Frequency range (-3 dB)'1 VD conversion resolution /oltage-axis sensitivity setting Maximum input voltage (1kHz or l Maximum rated voltage to earth (/ertical (voltage) axis accuracy nput connector nput impedance Common mode rejection ratio Femperature coefficient Bandwidth limit Weight Jniversal (Voltage/Temp.) Modul Function nput channels nput coupling nput connector nput impedance	16 Isolated unbalanced DC, GND (Selectable for each sub-CH) 200 KS/s (single CH) [10 KS/s when using 16 CH] DC to 5 KHz 16 bit (2400 LSB/div) 200 mV/div to 2 V/div (1-2-5 steps) eess) Direct input: 42 V (DC + ACpeak) 1 KHz or less) Direct input: 42 V (DC + ACpeak) (CAT II, 30 Vrms) DC accuracy: ±(0.3% of 10 div) Spring-type terminal (removable per 8 CH) 1 MΩ ±1% 80 dB (50/60 Hz) or more (Typ.) Zero point: ±(0.02% of 10 div)/°C (Typ.) Gain: ±(0.02% of 10 div)/°C (Typ.) Full/500 Hz (Selectable for each sub-CH) Approx. 230 g 2 Isolated unbalanced 7C (thermocouple), DC, AC, and GND Binding post Approx. 1 MΩ
nput channels nput type nput coupling Maximum sample rate Frequency range (-3 dB)'1 VD conversion resolution foltage-axis sensitivity setting Maximum input voltage (1kHz or l Maximum rated voltage to earth (fertical (voltage) axis accuracy nput connector nput impedance common mode rejection ratio remperature coefficient Bandwidth limit Veight Jniversal (Voltage/Temp.) Modul Function nput channels nput coupling nput connector nput impedance Maximum sample rate	16 Isolated unbalanced DC, GND (Selectable for each sub-CH) 200 kS/s (single CH) [10 kS/s when using 16 CH] DC to 5 KHz 16 bit (2400 LSB/div) 200 mV/div to 2 V/div (1-2-5 steps) ees) Direct input: 42 V (DC + ACpeak) 1 kHz or less) Direct input: 42 V (DC + ACpeak) (CAT II, 30 Vrms) DC accuracy: ±(0.3% of 10 div) Spring-type terminal (removable per 8 CH) 1 MΩ ±1% 80 dB (50/60 Hz) or more (Typ.) Zero point: ±(0.02% of 10 div)/°C (Typ.) Gai: ±(0.02% of 10 div)/°C (Typ.) Full/500 Hz (Selectable for each sub-CH) Approx. 230 g isolated unbalanced 7C (thermocouple), DC, AC, and GND Binding post Approx. 1 MΩ Voltage: 100 kS/s

Main Specifications (plug-in modules)

		Voltage mea			
Measureme	ent range/accuracy ^{*1}	Voltage mea Voltage-a	kis sensitivity setting ^{*12}	/ to 20 V/div (1-2-5 step	
		Vertical (v	oltage) axis accuracy		
Temperatur	e measurement	vertical (v	Jilage) axis accuracy	±(0.25% of 10 d	
	unction temperature cor	mpensation ad	ccuracy not included)		
Туре	Measurement F	Range	Accu	uracy	
К	-200°C to 130	00°C			
E	-200°C to 80				
J T	-200°C to 110 -200°C to 40		±(0.1% of readin	g + 1.5°C) of reading + 1.5°C)	
Ľ	-200°C to 90		for -200°C to 0°C		
U	-200°C to 40				
Ν	0°C to 130	0°C			
R 0°C to 170		0°C	±(0.1% of reading + 3°C) 0°C Except, 0 to 200°C: ±8°C 200°C to 800°C: ±5°C		
в	0°C to 180	0°C	±(0.1% of reading + 2°C)		
			Effective range is	s 400°C to 1800°C	
W	0°C to 230	00°C	±(0.1% of readin	ıg + 3°C)	
KP/AuFe	0 K to 30	00 K	0 K to 50 K: ±4 I		
-			50 K to 300 K: ±	:2.5 K	
	ble standard JIS C1602		R, S, B)		
/laximum i	nput voltage (1 kHz or				
		42 V (DC +) standard)	ACpeak) (as a value that r	neets the safety	
		,	ACpeak) (maximum allov	vable voltage, as a valu	
			ot damage the instrument		
/laximum r	ated voltage to earth (
		42 V (DC +)	ACpeak) (CAT II, 30 Vrms)	
emperatur	e coefficient (Voltage)				
			E(0.01% of 10 div)/°C (Typ)).)	
			!% of 10 div)/°C (Typ.)		
(eference)	unction comp. accura		erminal temp. balancing U, N: ±1°C R, S, B, W:		
) on dwidth	limit		0,11.110 11,0, 0, 0, 11	11.00 10.00	
Bandwidth	limit		(ALITO (A AD) (AO LI- (400 L		
			/AUTO (AAF)/40 Hz/400 H a: Full/2 Hz/8 Hz/30 Hz	Hz/4 kHz	
Anti-aliasin	g filter (AAF) (701262 c	Temperature		Hz/4 kHz	
Anti-aliasin	g filter (AAF) (701262 c	Temperature only) Cutoff freque	e: Full/2 Hz/8 Hz/30 Hz ency (fc)		
Anti-aliasin	g filter (AAF) (701262 o	Temperature only) Cutoff freque Automatic fs ≥ 100 H	e: Full/2 Hz/8 Hz/30 Hz ency (fc) ally linked with the sampli lz : fc = fs × 40%		
Anti-aliasin	g filter (AAF) (701262 c	Temperature only) Cutoff freque Automatic fs ≥ 100 H	e: Full/2 Hz/8 Hz/30 Hz ency (fc) ally linked with the sampli		
Anti-aliasin Veight	g filter (AAF) (701262 c	Temperature only) Cutoff freque Automatic fs ≥ 100 H	:: Full/2 Hz/8 Hz/30 Hz ency (fc) ally linked with the sampli $Iz : fc = fs \times 40\%$:: fc = 20 Hz		
Veight		Temperature only) Cutoff freque Automatic fs ≥ 100 H fs ≥ 50 Hz Approx. 280	x: Full/2 Hz/8 Hz/30 Hz ency (fc) ally linked with the sampli Iz: fc = fs × 40% : fc = 20 Hz 9		
Veight Temperatu	g filter (AAF) (701262 c re, High Precision Vol	Temperature only) Cutoff freque Automatic fs ≥ 100 H fs ≥ 50 Hz Approx. 280 tage Isolatio	 Eull/2 Hz/8 Hz/30 Hz ency (fc) ally linked with the sampli lz: fc = fs × 40% : fc = 20 Hz / g n Module (701265) 	ng frequency (fs)	
Veight Temperatu		Temperature only) Cutoff freque Automatic fs ≥ 100 H fs ≥ 50 Hz Approx. 280 tage Isolatio	x: Full/2 Hz/8 Hz/30 Hz ency (fc) ally linked with the sampli Iz: fc = fs × 40% : fc = 20 Hz 9	ng frequency (fs)	
Veight Temperatu	re, High Precision Vol	Temperature only) Cutoff freque Automatic fs ≥ 100 ⊢ fs ≥ 50 Hz Approx. 280 tage Isolatio	 Eull/2 Hz/8 Hz/30 Hz ency (fc) ally linked with the sampli lz: fc = fs × 40% : fc = 20 Hz / g n Module (701265) 	ng frequency (fs)	
Veight Temperatu Tunction	re, High Precision Vol	Temperature only) Cutoff freque Automatic fs \geq 100 H fs \geq 50 Hz Approx. 280 tage Isolatio Temperature (switchable) 2	 Full/2 Hz/8 Hz/30 Hz ency (fc) ally linked with the sampli lz: fc = fs × 40% : fc = 20 Hz ? g n Module (701265) (thermocouple) or voltag 	ng frequency (fs)	
Veight Temperatu Tunction nput chann nput type	re, High Precision Vol	Temperature only) Cutoff freque Automatic fs ≥ 100 H fs ≥ 50 Hz Approx. 280 tage Isolatio Temperature (switchable) 2 Isolated unb	 Full/2 Hz/8 Hz/30 Hz ency (fc) ally linked with the sampli Iz: fc = fs × 40% : fc = 20 Hz ? g n Module (701265) (thermocouple) or voltag alanced 	ng frequency (fs)	
Veight Temperatu Function nput chann nput type nput coupl	re, High Precision Vol nels ing	Temperature only) Cutoff freque Automatic $fs \ge 100 + fs \ge 50 + Hz$ Approx. 280 tage Isolatio Temperature (switchable) 2 Isolated unb TC (thermoor	Pail/2 Hz/8 Hz/30 Hz ency (fc) ally linked with the sampli Iz: fc = fs × 40% :: fc = 20 Hz '9 n Module (701265) e (thermocouple) or voltage alanced couple), DC, and GND	ng frequency (fs)	
Veight Temperatu Function nput chann nput type nput coupl	re, High Precision Vol nels ing	Temperature only) Cutoff freque Automatic fs ≥ 100 H fs ≥ 50 Hz Approx. 280 tage Isolatio Temperature (switchable) 2 Isolated unb	Pail/2 Hz/8 Hz/30 Hz ency (fc) ally linked with the sampli Iz: fc = fs × 40% :: fc = 20 Hz '9 n Module (701265) e (thermocouple) or voltage alanced couple), DC, and GND	ng frequency (fs)	
Veight Temperatu Tunction nput chann nput type nput coupi nput conne	re, High Precision Vol nels ing actor	Temperature only) Cutoff freque Automatic $fs \ge 100 + fs \ge 50 + Hz$ Approx. 280 tage Isolatio Temperature (switchable) 2 Isolated unb TC (thermoor	Pull/2 Hz/8 Hz/30 Hz ency (fc) ally linked with the sampli lz: fc = fs × 40% :: fc = 20 Hz '9 n Module (701265) e (thermocouple) or voltage alanced couple), DC, and GND t	ng frequency (fs)	
Veight Temperatu Tunction nput chann nput type nput conne nput conne nput imper	re, High Precision Vol nels ing ector Jance	Temperature only) Cutoff freque Automatic $fs \ge 100 + fs \ge 50 + Hz$ Approx. 280 tage Isolatio Temperature (switchable) 2 Isolated unb TC (thermoor Binding pos	Full/2 Hz/8 Hz/30 Hz ency (fc) ally linked with the sampli Iz: fc = fs × 40% :: fc = 20 Hz ? g n Module (701265) e (thermocouple) or voltag alanced couple), DC, and GND t	ng frequency (fs)	
Veight emperatu function nput chann nput type nput coupi nput conne nput imper Data updat	re, High Precision Vol nels ing ector Jance	Temperature only) Cutoff freque Automatic fs ≥ 100 ⊢ fs ≥ 50 Hz Approx. 280 tage Isolatio Temperature (switchable) 2 Isolated unb TC (thermoo Binding pos Approx. 1 M	Full/2 Hz/8 Hz/30 Hz ency (fc) ally linked with the sampli Iz: fc = fs × 40% :: fc = 20 Hz ? g n Module (701265) thermocouple) or voltage alanced couple), DC, and GND t Ω Ω t Ω	ng frequency (fs)	
Veight emperatu function nput chann nput type nput coupi nput coupi nput connu nput imper Data updat requency	re, High Precision Vol nels ing ector dance e rate	Temperature only) Cutoff freque Automatic fs $\geq 100 + fs \geq 50 + J2$ Approx. 280 tage Isolatio Temperature (switchable) 2 Isolated unb TC (thermood Binding pos Approx. 1 M Temperature DC to 100 + Voltage: 16	Pil/2 Hz/8 Hz/30 Hz ancy (fc) ally linked with the sampli lz : fc = fs × 40% :: fc = 20 Hz g n Module (701265) (thermocouple) or voltag alanced souple), DC, and GND t IΩ s: 500 Hz 4z bit (2400 LSB/div)	ng frequency (fs)	
Veight emperatu function nput chann nput type nput coupi nput coupi nput connu nput imper Data updat requency	re, High Precision Vol nels ing actor dance e rate range (-3 dB)'1	Temperature only) Cutoff freque Automatic fs ≥ 100 H fs ≥ 50 Hz Approx. 280 tage Isolatio Temperature (switchable) 2 Isolated unb TC (thermoor Binding pos Approx. 1 M Temperature DC to 100 H	Pil/2 Hz/8 Hz/30 Hz ancy (fc) ally linked with the sampli lz : fc = fs × 40% :: fc = 20 Hz g n Module (701265) (thermocouple) or voltag alanced souple), DC, and GND t IΩ s: 500 Hz 4z bit (2400 LSB/div)	ng frequency (fs)	
Veight Function nput chan nput coup nput coup nput coup nput coup nput imper Data updat requency VD conver	re, High Precision Vol nels ing actor dance e rate range (-3 dB)'1	Temperature only) Cutoff freque Automatic fs $\geq 100 + fs \geq 50 + Jz$ Approx. 280 tage Isolatio Temperature (switchable) 2 Isolated unb TC (thermoor Binding pos Approx. 1 M Temperature DC to 100 + Voltage: 16 Temperature Voltage mea	EVII/2 Hz/8 Hz/30 Hz ency (fc) ally linked with the sampli Iz: fc = fs × 40% :: fc = 20 Hz g n Module (701265) (thermocouple) or voltag alanced couple), DC, and GND t IΩ b: 500 Hz tz bit (2400 LSB/div) c: 0.1°C surement:	ng frequency (fs)	
Veight Function nput chan nput coup nput coup nput coup nput coup nput imper Data updat requency VD conver	re, High Precision Vol nels ing ector dance e rate range (–3 dB)' ¹ sion resolution	Temperature only) Cutoff freque Automatic fs $\geq 100 + fs \geq 50 + Jz$ Approx. 280 tage Isolatio Temperature (switchable) 2 Isolated unb TC (thermoor Binding pos Approx. 1 M Temperature DC to 100 + Voltage: 16 Temperature Voltage mea	Full/2 Hz/8 Hz/30 Hz ency (fc) ally linked with the sampli Iz: fc = fs × 40% :: fc = 20 Hz '9 n Module (701265) thermocouple) or voltage alanced couple), DC, and GND t :: f0 :: 500 Hz iz: 500 Hz iz: curcement: ssensitivity setting' ¹²	ng frequency (fs) e measurement	
Veight Function nput chan nput coup nput coup nput coup nput coup nput imper Data updat requency VD conver	re, High Precision Vol nels ing ector dance e rate range (–3 dB)' ¹ sion resolution	Temperature only) Cutoff freque Automatic fs ≥ 100 ⊢ fs ≥ 50 Hz Approx. 280 tage Isolatio Temperature (switchable) 2 Isolated unb TC (thermood Binding pos Approx. 1 M Temperature DC to 100 ⊢ Voltage: 16 Temperature Voltage mea Voltage.	Full/2 Hz/8 Hz/30 Hz ency (fc) ally linked with the sampli Iz: fc = fs × 40% :: fc = 20 Hz '9 n Module (701265) thermocouple) or voltage alanced couple), DC, and GND t :: fc = 500 Hz :: 500 Hz :: out (2400 LSB/div) :: surement: : ds sensitivity setting' ¹² : 100 µV/div	ng frequency (fs) e measurement	
Veight Temperatu Teunction nput chann nput chann nput coupi nput coupi nput coupi nput imper Data updat Trequency VD conver	re, High Precision Vol nels ing ector dance e rate range (–3 dB) ^{*1} sion resolution ent range/accuracy ^{*1}	Temperature only) Cutoff freque Automatic fs ≥ 100 ⊢ fs ≥ 50 Hz Approx. 280 tage Isolatio Temperature (switchable) 2 Isolated unb TC (thermood Binding pos Approx. 1 M Temperature DC to 100 ⊢ Voltage: 16 Temperature Voltage mea Voltage.	Full/2 Hz/8 Hz/30 Hz ency (fc) ally linked with the sampli Iz: fc = fs × 40% :: fc = 20 Hz '9 n Module (701265) thermocouple) or voltage alanced couple), DC, and GND t :: fc = 500 Hz :: 500 Hz :: out (2400 LSB/div) :: surement: : ds sensitivity setting' ¹² : 100 µV/div	ng frequency (fs) e measurement	
Veight emperatu iunction nput chani nput coupi nput coupi nuc nuc nuc nuc nuc nuc nuc nuc	re, High Precision Vol nels ing actor dance e rate range (–3 dB)' ¹ sion resolution ent range/accuracy' ¹ e measurement	Temperature Temperature Temperature Automatic fs ≥ 100 ⊢ fs ≥ 50 Hz Approx. 280 Temperature (switchable) 2 Isolated unb TC (thermood Binding pos Approx. 1 M Temperature DC to 100 ⊢ Voltage: 16 Temperature Voltage: ac Voltage: ac Voltage: ac Vertical (w	Pull/2 Hz/8 Hz/30 Hz anoy (fc) ally linked with the sampli Iz: fc = fs × 40% :: fc = 20 Hz 9 g n Module (701265) (thermocouple) or voltage alanced couple), DC, and GND t bit (2400 LSB/div) :: 0.1°C surment: xis sensitivity setting ¹¹² 100 µV/div	ng frequency (fs) e measurement	
Veight emperatu iunction nput chani nput coupi nput coupi ND couver ND couver NE emperature Reference j	re, High Precision Vol nels ing actor dance e rate range (–3 dB)' ¹ sion resolution ent range/accuracy' ¹ e measurement unction temperature cor	Temperature Temperature Cutoff freque Automatic fs ≥ 100 ⊢ fs ≥ 50 Hz Approx. 280 tage Isolatio Temperature (switchable) 2 Isolated unb TC (thermood Binding pos Approx. 1 M Temperature DC to 100 ⊢ Voltage: 16 Temperature Voltage: ac Voltage: ac Voltage: ac Voltage: ac Voltage: ac	Full/2 Hz/8 Hz/30 Hz anoy (fc) ally linked with the sampli Iz: fc = fs × 40% :: fc = 20 Hz 9 n Module (701265) (thermocouple) or voltag alanced couple), DC, and GND t bit (2400 LSB/div) :: 0.1°C susrement: xis sensitivity setting ¹¹² 100 µV/div oltque) axis accuracy	ng frequency (fs) e measurement y to 10 V/div (1-2-5 ste ±(0.08% of 10 div + 2)	
Veight Temperatu Teunction nput chann nput coupi nput coupi	re, High Precision Vol nels ing actor dance e rate range (-3 dB)' ¹ sion resolution ent range/accuracy' ¹ e measurement unction temperature cor Measurement F	Temperature Temperature Cutoff freque Automatic fs ≥ 100 ⊢ fs ≥ 50 Hz Approx. 280 Temperature (switchable) 2 Isolated unb TC (thermood Binding pos Approx. 1 M Temperature DC to 100 ⊢ Voltage: 16 Temperature Voltage: ac Voltage mea Voltage ac Voltage ac Vertical (voltage) Tempensation ac Range	Pull/2 Hz/8 Hz/30 Hz anoy (fc) ally linked with the sampli Iz: fc = fs × 40% :: fc = 20 Hz 9 g n Module (701265) (thermocouple) or voltage alanced couple), DC, and GND t bit (2400 LSB/div) :: 0.1°C surment: xis sensitivity setting ¹¹² 100 µV/div	ng frequency (fs) e measurement y to 10 V/div (1-2-5 step ±(0.08% of 10 div + 2 p	
Veight Femperatu Function nput chani nput coupi nput co	re, High Precision Vol nels ing actor dance e rate range (–3 dB)' ¹ sion resolution ent range/accuracy' ¹ e measurement unction temperature cor	Temperature Temperature Automatic fs ≥ 100 H fs ≥ 50 Hz Approx. 280 Temperature (switchable) 2 Isolated unb TC (thermood Binding pos Approx. 1 M Temperature DC to 100 H Voltage: 16 Temperature Voltage mea Voltage mea Voltage mea Voltage at Mange D0°C	Full/2 Hz/8 Hz/30 Hz ancy (fc) ally linked with the sampli Iz: fc = fs × 40% :: fc = 20 Hz 9 n Module (701265) (thermocouple) or voltage alanced couple), DC, and GND t bit (2400 LSB/div) :: 0.1°C susrement: xis sensitivity setting ¹¹² 100 µV/div oltque) axis accuracy	ng frequency (fs) e measurement y to 10 V/div (1-2-5 step ±(0.08% of 10 div + 2 p	
Veight emperatu iunction nput chan nput coupi nput coupi Nc coupi K E J	re, High Precision Vol nels ing actor dance e rate range (-3 dB)' ¹ sion resolution ent range/accuracy' ¹ e measurement unction temperature cor Measurement F -200°C to 130 -200°C to 130 -200°C to 130 -200°C to 130	Temperature Temperature Cutoff freque Automatic fs ≥ 100 ⊢ fs ≥ 50 Hz Approx. 28C tage Isolatio Temperature (switchable) 2 Isolated unb TC (thermood Binding pos Approx. 1 M Temperature DC to 100 ⊢ Voltage: 16 Temperature Voltage: ac Voltage: ac	Full/2 Hz/8 Hz/30 Hz ancy (fc) ally linked with the sampli Iz: fc = fs × 40% :: fc = 20 Hz 9 g n Module (701265) (thermocouple) or voltage alanced ioouple), DC, and GND t 10 i: 500 Hz 4z bit (2400 LSB/div) :: 0.1°C surement: ixis sensitivity setting ¹¹² 100 µV/div obtage) axis accuracy :curacy not included) Accut ±(0.1% of reading +	ng frequency (fs) e measurement y to 10 V/div (1-2-5 step ±(0.08% of 10 div + 2 p uracy 1.5°C)	
Veight Femperatu Function nput chan nput coup nput coup nput coup nput coup Account requency VD conver Measureme Femperatu Reference I Type K E J T T	re, High Precision Vol nels ing actor Jance e rate range (-3 dB)'1 sion resolution ent range/accuracy'1 e measurement unction temperature cor Measurement F -200°C to 130 -200°C to 84 -200°C to 110 -200°C to 110	Temperature Temperature Automatic fs ≥ 100 ⊢ fs ≥ 50 Hz Approx. 280 Temperature (switchable) 2 Isolated unb TC (thermood Binding pos Approx. 1 M Temperature DC to 100 ⊢ Voltage: 16 Temperature Voltage mea Voltage mea Voltage mea Voltage mea Voltage ac DC to 100 ⊢ Solated (without the solation) Temperature Voltage mea Voltage ac Voltage mea Voltage ac Voltage for a solation ac Binding binding binding binding binding Temperature Voltage for a solation ac Binding binding bin	Full/2 Hz/8 Hz/30 Hz ency (fc) ally linked with the sampli Iz: fc = fs × 40% :: fc = 20 Hz ?g n Module (701265) o (thermocouple) or voltag alanced rouple), DC, and GND t t 0 (200 LSB/div) : 0.1°C surement: vis sensitivity setting ¹¹² 100 µV/div oltage) axis accuracy :curacy not included) Accu ±(0.1% of reading + Except ±(0.2% of reading +	ng frequency (fs) e measurement y to 10 V/div (1-2-5 step ±(0.08% of 10 div + 2 p uracy 1.5°C)	
Veight emperatu nput chann nput chann nput coupl nput coupl	re, High Precision Vol hels ing actor Jance e rate range (-3 dB)'1 sion resolution ent range/accuracy'1 e measurement unction temperature cor Measurement F -200°C to 130 -200°C to 140 -200°C to 140 -200°C to 140 -200°C to 140	Temperature Temperature Automatic fs ≥ 100 ⊢ fs ≥ 50 Hz Approx. 280 Temperature (switchable) 2 Isolated unb TC (thermood Binding pos Approx. 1 M Temperature DC to 100 ⊢ Voltage mea Voltage mea Voltage mea Voltage and Voltage and Vo	Full/2 Hz/8 Hz/30 Hz ancy (fc) ally linked with the sampli Iz: fc = fs × 40% :: fc = 20 Hz 9 g n Module (701265) (thermocouple) or voltage alanced ioouple), DC, and GND t 10 i: 500 Hz 4z bit (2400 LSB/div) :: 0.1°C surement: ixis sensitivity setting ¹¹² 100 µV/div obtage) axis accuracy :curacy not included) Accut ±(0.1% of reading +	ng frequency (fs) e measurement y to 10 V/div (1-2-5 step ±(0.08% of 10 div + 2 p uracy 1.5°C)	
Veight Femperatu Function nput chann nput type nput coup nput coup nput coup Account requency VD conver Measureme Femperatu Reference j Type K E J T	re, High Precision Vol nels ing actor Jance e rate range (-3 dB)'1 sion resolution ent range/accuracy'1 e measurement unction temperature cor Measurement F -200°C to 130 -200°C to 84 -200°C to 110 -200°C to 110	Temperature Temperature Temperature Automatic fs ≥ 100 ⊢ fs ≥ 50 Hz Approx. 280 Temperature (switchable) 2 Isolated unb TC (thermood Binding pos Approx. 1 M Temperature DC to 100 ⊢ Voltage: 16 Temperature Voltage: 16 Temperature Vo	Full/2 Hz/8 Hz/30 Hz ency (fc) ally linked with the sampli Iz: fc = fs × 40% :: fc = 20 Hz ?g n Module (701265) o (thermocouple) or voltag alanced rouple), DC, and GND t t 0 (200 LSB/div) : 0.1°C surement: vis sensitivity setting ¹¹² 100 µV/div oltage) axis accuracy :curacy not included) Accu ±(0.1% of reading + Except ±(0.2% of reading +	ng frequency (fs) e measurement y to 10 V/div (1-2-5 step ±(0.08% of 10 div + 2 p uracy 1.5°C)	
Veight Femperatu Function Input chan Input chan Input coupl Input	re, High Precision Vol nels ing actor dance e rate range (-3 dB)' ¹ sion resolution ent range/accuracy' ¹ e measurement unction temperature cor Measurement F -200°C to 130 -200°C to 130 -200°C to 140 -200°C to 40 -200°C to	Temperature Temperature Temperature Automatic fs ≥ 100 ⊢ fs ≥ 50 Hz Approx. 280 Temperature (switchable) 2 Isolated unb TC (thermood Binding pos Approx. 1 M Temperature DC to 100 ⊢ Voltage: 16 Temperature Voltage: 16 Temperature Vo	EVII/2 Hz/8 Hz/30 Hz ancy (fc) ally linked with the sampli Iz: fc = fs × 40% :: fc = 20 Hz 'g n Module (701265) (thermocouple) or voltage alanced iouple), DC, and GND t 10 i: 500 Hz iz: 500 Hz iz: 0.1°C isurement: ixis sensitivity setting ¹¹² 100 µV/div ottge) axis accuracy iscuracy not included) Accol ±(0.1% of reading + Except ±(0.2% of reading + for -200°C to 0°C	ng frequency (fs) e measurement v to 10 V/div (1-2-5 step ±(0.08% of 10 div + 2 p uracy 1.5°C) ading + 1.5°C)	
Veight Temperatu Temperatu Tropperatu Temperatu Temperatu Reference j Type K E J T L U N R	re, High Precision Vol nels ing actor dance e rate range (-3 dB)' ¹ sion resolution ent range/accuracy' ¹ e measurement unction temperature cor Measurement F -200°C to 130 -200°C to 130 -200°C to 140 -200°C to 40 -200°C to	Temperature Temperature Automatic fs ≥ 100 ⊢ fs ≥ 50 Hz Approx. 280 Temperature (switchable) 2 Isolated unb TC (thermood Binding pos Approx. 1 M Temperature DC to 100 ⊢ Voltage: 16 Temperature Voltage mea Voltage mea Voltage mea Voltage au DC to 100 ⊢ 00 C 100°C 00°C 00°C	Full/2 Hz/8 Hz/30 Hz ency (fc) ally linked with the sampli Iz : fc = fs × 40% : fc = 20 Hz 9 n Module (701265) n Module (701265)	ng frequency (fs) e measurement // to 10 V/div (1-2-5 step ±(0.08% of 10 div + 2 p uracy 1.5°C) ading + 1.5°C) 3°C) ±8°C	
Veight Femperatu Function Input chan Input chan Input coupl Input	re, High Precision Vol nels ing actor Jance e rate range (-3 dB)'1 sion resolution ent range/accuracy'1 e measurement unction temperature cor Measurement F -200°C to 130 -200°C to 140 -200°C to 40 -200°C to 40 -20	Temperature Temperature Automatic fs ≥ 100 ⊢ fs ≥ 50 Hz Approx. 280 Temperature (switchable) 2 Isolated unb TC (thermood Binding pos Approx. 1 M Temperature DC to 100 ⊢ Voltage: 16 Temperature Voltage mea Voltage mea Voltage mea Voltage au DC to 100 ⊢ 00 C 100°C 00°C 00°C	Full/2 Hz/8 Hz/30 Hz ency (fc) ally linked with the sampli Iz: fc = fs × 40% :: fc = 20 Hz ?g n Module (701265) a (thermocouple) or voltage alanced toouple), DC, and GND t t 00 t	ng frequency (fs) e measurement // to 10 V/div (1-2-5 step ±(0.08% of 10 div + 2 ; uracy 1.5°C) ading + 1.5°C) 3°C) ±8°C	
Veight Femperatu Function Input chan Input coup Input c	re, High Precision Vol nels ing actor dance e rate range (-3 dB)' ¹ sion resolution ent range/accuracy' ¹ e measurement unction temperature cor Measurement F -200°C to 130 -200°C to 110 -200°C to 40 -200°C to 40	Temperature Temperature Temperature Automatic fs ≥ 100 ⊢ fs ≥ 50 Hz Approx. 280 Temperature (switchable) 2 Isolated unb TC (thermood Binding pos Approx. 1 M Temperature DC to 100 ⊢ Voltage: 16 Temperature Voltage mea Voltage mea Voltage mea Voltage at Voltage mea Voltage mea Vol	Full/2 Hz/8 Hz/30 Hz ancy (fc) ally linked with the sampli Iz: fc = fs × 40% :: fc = 20 Hz 'g n Module (701265) (thermocouple) or voltage alanced iouple), DC, and GND t 10 i: 500 Hz iz: 500 Hz iz: sensitivity setting ^{1/2} 100 µV/div i: 100 µV/div obti (2400 LSB/div) i: 0.1°C scuracy not included) Accet ±(0.1% of reading + Except, (0.1% of reading + Except, 0 to 200°C: ± 5°C ±(0.1% of reading + Except, 0 to 200°C: ± 5°C ±(0.1% of reading +	ng frequency (fs) e measurement v to 10 V/div (1-2-5 step ±(0.08% of 10 div + 2 p uracy 1.5°C) ading + 1.5°C) 3°C) ±8°C 2°C)	
Veight emperatu innut chann nput coupin nput coupin	re, High Precision Vol nels ing actor Jance e rate range (-3 dB)'1 sion resolution ent range/accuracy'1 e measurement unction temperature cor Measurement F -200°C to 130 -200°C to 140 -200°C to 40 -200°C to 40 -20	Temperature Temperature Temperature Automatic fs ≥ 100 ⊢ fs ≥ 50 Hz Approx. 280 Temperature (switchable) 2 Isolated unb TC (thermood Binding pos Approx. 1 M Temperature DC to 100 ⊢ Voltage: 16 Temperature Voltage mea Voltage mea Voltage mea Voltage at Voltage mea Voltage mea Vol	Full/2 Hz/8 Hz/30 Hz ency (fc) ally linked with the sampli Iz : fc = fs × 40% : fc = 20 Hz g n Module (701265) n Module (701265)	ng frequency (fs) e measurement // to 10 V/div (1-2-5 step ±(0.08% of 10 div + 2 p uracy 1.5°C) ading + 1.5°C) 3°C) ±8°C 2°C) 2°C) 2°C) 2°C) 2°C) 2°C) 2°C) 2°C) 2°C) 2°C) 2°C) 2°C) 2°C) 2°C) 2°C)	
Veight Femperatu Function nput chan nput coup nput coup nput coup nput conn nput imper ata updat Frequency VD conver Measureme Femperatu Reference j Type K E J T L U N R S B	re, High Precision Vol nels ing actor Jance e rate range (-3 dB)'1 sion resolution ont range/accuracy'1 e measurement unction temperature cor Measurement F -200°C to 130 -200°C to 140 -200°C to 40 -200°C to 40 -200°C to 40 0°C to 130 0°C to 180	Temperature Temperature Automatic fs ≥ 100 H fs ≥ 50 Hz Approx. 280 Temperature (switchable) 2 Isolated unb TC (thermoo Binding pos Approx. 1 M Temperature DC to 100 H Voltage: 16 Temperature Voltage mea Voltage mea Voltage mea Voltage mea Voltage at 00°C 00°C 00°C 00°C	Full/2 Hz/8 Hz/30 Hz ency (fc) ally linked with the sampli Iz : fc = fs × 40% : fc = 20 Hz g n Module (701265) n Module (701265)	ng frequency (fs) e measurement v to 10 V/div (1-2-5 step ±(0.08% of 10 div + 2 p uracy 1.5°C) ading + 1.5°C) 3°C) ±8°C 2°C) 2°C	
Veight Femperatu Function Input chan Input coup Input c	re, High Precision Vol nels ing actor dance e rate range (-3 dB)' ¹ sion resolution ent range/accuracy' ¹ e measurement unction temperature cor Measurement F -200°C to 130 -200°C to 110 -200°C to 40 -200°C to 40	Temperature Temperature Automatic fs ≥ 100 H fs ≥ 50 Hz Approx. 280 Temperature (switchable) 2 Isolated unb TC (thermood Binding pos Approx. 1 M Temperature DC to 100 H Voltage: 161 Temperature Voltage mea Voltage mea Voltage mea Voltage au Dertical (w mpensation ac Range D0°C 00°C 00°C 00°C	Full/2 Hz/8 Hz/30 Hz ency (fc) ally linked with the sampli Iz : fc = fs × 40% : fc = 20 Hz g n Module (701265) n Module (701265)	ng frequency (fs) e measurement / to 10 V/div (1-2-5 step ±(0.08% of 10 div + 2 p uracy 1.5°C) 3°C) ±8°C 2°C) 2	

Maximum ir	nput voltage (1 kHz or l	ess) 42 V (DC +	- ACpeak)		
Maximum ra	ated voltage to earth (1		is) - ACpeak) (CAT II, 30 Vrms)		
Temperatur	e coefficient (Voltage)		±((0.01% of 10 div)/ °C + 0.05 μV)/ °C (Typ.))2% of 10 div)/ °C (Typ.)		
Reference j	unction comp. accurac		terminal temp. balancing) _, U, N: ±1°C R, S, B, W: ±1.5°C KP/AuFe: ±1 K		
Bandwidth limit		Full/2 Hz/8 Hz/30 Hz			
Weight		Approx. 27	'0 g		
Temperatu	re/High-Precision Volt	ane Isolati	on Module (Low noise) (720266)		
Function	re/rigit-recision void	-	re (thermocouple) or voltage measurement		
		(switchable			
Input chanr	nels	2			
Input type		Isolated ur	Ibalanced		
Input coupl	ing	TC (thermo	pcouple), DC, and GND		
Input conne		Binding po			
Input imped		Approx. 1	MΩ		
Data updat		125 Hz			
	range (-3 dB) ^{*1}	DC to 15 H			
A/D convers	sion resolution	Voltage: 16 Temperatu	δ bit (2400 LSB/div) re: 0.1°C		
Measureme	ent range/accuracy"	0	aasurement: axis sensitivity setting ^{*12} 100 μV/div to 20 V/div (1-2-5 step:		
		Vertical	voltage) axis accuracy \pm (0.08% of 10 div + 2 μ		
	re measurement	poposion	accuracy pot included)		
Type	unction temperature com Measurement Ra		Accuracy		
К	-200°C to 1300	-	/ toodi doy		
E	-200°C to 800	°C			
J	-200°C to 1100 -200°C to 400		\pm (0.1% of reading + 1.5°C) Except \pm (0.2% of reading + 1.5°C)		
L	-200°C to 900	°C	for -200°C to 0°C		
U N	-200°C to 400 0°C to 1300				
R S	0°C to 1700	°C	±(0.1% of reading + 3°C) Except, 0 to 200°C: ±8°C 200°C to 800°C: ±5°C		
в	0°C to 1800	°C	±(0.1% of reading + 2°C) Except, 400°C to 700°C: ±8°C Effective range is 400°C to 1800°C		
W	0°C to 2300	°C	$\pm (0.1\% \text{ of reading} + 3^{\circ}\text{C})$		
KP/AuFe	0 K to 300	-	0 K to 50 K: ±4 K, 50 K to 300 K: ±2.5 K		
Thermocoup	ble standard JIS C1602 (K, E, J, T, N	I, R, S, B)		
Maximum ir	nput voltage (1 kHz or I	ess) 42 V (DC +	- ACneak)		
Maximum r	ated voltage to earth (1	kHz or les			
Temperatur	e coefficient (Voltage)		±((0.01% of 10 div)/°C + 0.05 μV)/°C (Typ.) 2% of 10 div)/°C (Typ.)		
Reference j	unction comp. accurac		terminal temp. balancing) L, U, N: ±1°C ⊂ R, S, B, W: ±1.5°C ±1 K		
Bandwidth limit		Full/0.1 Hz	/1 Hz/8 Hz		
Weight		Approx. 27	'0 g		
16 CH Tem	perature/Voltage Input	Module (7	20221)		
Input chanr		16			
-		Isolated ur	balanced		
Input type					
Input coupl		TC (thermocouple), DC, GND			
	ing period	Switchina	among 100 ms, 300 ms, 1 s, and 3 s		
Input coupl Data updati	ing period ent range/accuracy		among 100 ms, 300 ms, 1 s, and 3 s easurement:		

Type	Inction temperature co Measurement R		Accuracy			
K	-200°C to 130	0	Accuracy			
E	-200°C to 80	0°C				
J T	-200°C to 110 -200°C to 40		\pm (0.1% of reading + 1.5°C) Except \pm (0.2% of reading + 1.5°C)			
Ĺ	-200°C to 90		for -200°C to 0°C			
U	-200°C to 40					
N	0°C to 1300°C					
R S	()(C to 1/0)		±(0.1% of reading + 3°C) Except, 0 to 200°C: ±8°C 200°C to 800°C: ±5°C			
B 0°C to 1800		0°C	±(0.1% of reading + 2°C) Except, 400°C to 700°C: ±8°C Effective range is 400°C to 1800°C			
W	W 0°C to 2300		±(0.1% of reading + 3°C)			
KP/AuFe	0 K to 30	10 K	0 K to 50 K: ±4 K, 50 K to 300 K: ±2.5 K			
Thermocoup	le standard JIS C1602	(K, E, J, T, N	I, R, S, B)			
Maximum ir	nput voltage (1 kHz or		ge & temp. 42 V (DC + ACpeak)			
Maximum ra	ated voltage to earth		s s) ge & temp. 42 V (DC + ACpeak) (CAT II, 30 Vrms)			
/ertical reso	olution		input: 2400 LSB/div neasurement: 0.1°C			
Common m	ode rejection ratio		measurement: 100 dB or more (50/60 Hz) (Typ.) neasurement: 140 dB or more (at data updating rat of 3 s) (50/60 Hz) (Typ.)			
Residual no	ise level	±0.01 div (Тур.)			
VD convers	sion resolution	At voltage	measurement: 16 bit (2400 LSB/range)			
Temperature	e coefficient		: ±(0.025% of 10 div)/°C (Typ.)			
Reference ji	unction comp. accura	acy (at input	01% of 10 div)/°C (Typ.) terminal temp. balancing)			
Bondwidth	limit (Tim) (2 dB poi		L, U, N: ±1°C R, S, B, W: ±1.5°C KP/AuFe: ±1			
Bandwidth	limit (Typ.) (–3 dB poi		dating period of 100 ms 600 Hz			
		At data up At data up	dating period of 300 ms 200 Hz dating period of 1 s 50 Hz dating period of 3 s 10 Hz			
Input conne	ector	Screwed ty	Screwed type, External terminal mounting			
nput imped	lance	Approx. 1	MΩ			
Burnout det	tection function	ON/OFF av	vailable on channel basis			
Channel-to-	channel interference	100 dB or	more (50/60 Hz) (Typ.)			
Internal refe compensati	erence junction	ON or OFF	(Switchable)			
External sca		Model: 70 Supplied c	1953 able length: 1 m, 3 m (selectable)			
Weight		Approx. 22				
			ule (DSUB, Shunt-Cal) (701271)			
Input chann Input type	ieis	2 DC bridge	(auto balancing), balanced differential input, and			
Auto balanc	e type	isolated Electronic	auto balance			
Auto balanc			STR (1 gauge method)			
Bridge volta			n 2 V, 5 V, and 10 V.			
Gauge resis	-		000 Ω (bridge voltage: 2 V)			
Gauge 16315			000Ω (bridge voltage: 2 V) 000Ω (bridge voltage: 2 V, 5 V, and 10 V)			
	or		20 (set in 0.01 steps)			
Gauge facto						
		100 kS/s				
Maximum s		100 kS/s DC to 20 k				
	ample rate	DC to 20 k	KHz 10 LSB/div: Upper = +FS, Lower = -FS)			
Maximum s Frequency r A/D convers	ample rate range (–3 dB) ⁻¹ sion resolution	DC to 20 k 16 bit (480	00 LSB/div: Upper = +FS, Lower = -FS)			
Maximum s Frequency r A/D convers mV/V range Measureme	ample rate range (–3 dB) ⁻¹ sion resolution support nt range/measurable	DC to 20 k 16 bit (480 mV/V rang range	0 LSB/div: Upper = +FS, Lower = -FS) ie = 0.5 × (μSTR range/1000)			
Maximum s Frequency r A/D convers mV/V range Measureme	ample rate range (–3 dB)' ¹ sion resolution support nt range/measurable Measurement range (F	DC to 20 k 16 bit (480 mV/V rang range	0 LSB/div: Upper = +FS, Lower = -FS) ie = 0.5 × (μSTR range/1000) Measurable range (-FS to +FS)			
Maximum s Frequency r A/D convers mV/V range Measureme	ample rate range (–3 dB)' ¹ sion resolution support nt range/measurable Measurement range (F 500 µSTR	DC to 20 k 16 bit (480 mV/V rang range	0 LSB/div: Upper = +FS, Lower = -FS) e = 0.5 × (μSTR range/1000) Measurable range (-FS to +FS) -500 μSTR to +500 μSTR			
Maximum s Frequency r A/D convers mV/V range Measureme	ample rate range (–3 dB)' ¹ sion resolution support nt range/measurable Measurement range (F 500 µSTR 1000 µSTR	DC to 20 k 16 bit (480 mV/V rang range	0 LSB/div: Upper = +FS, Lower = -FS) e = 0.5 × (µSTR range/1000) Measurable range (-FS to +FS) -500 µSTR to +500 µSTR -1000 µSTR to +1000 µSTR			
Maximum s Frequency r A/D convers mV/V range Measureme	ample rate range (-3 dB)" sion resolution support nt range/measurable Measurement range (F 500 µSTR 1000 µSTR 2000 µSTR	DC to 20 k 16 bit (480 mV/V rang range	0 LSB/div: Upper = +FS, Lower = -FS) e = 0.5 × (µSTR range/1000) Measurable range (-FS to +FS) -500 µSTR to +500 µSTR -1000 µSTR to +1000 µSTR -2000 µSTR to +2000 µSTR			
Maximum s Frequency r A/D convers mV/V range Measureme	ample rate range (-3 dB)" sion resolution support nt range/measurable Measurement range (F 500 µSTR 1000 µSTR 2000 µSTR 5000 µSTR	DC to 20 k 16 bit (480 mV/V rang range	0 LSB/div: Upper = +FS, Lower = -FS) e = 0.5 × (µSTR range/1000) Measurable range (-FS to +FS) -500 µSTR to +500 µSTR -1000 µSTR to +1000 µSTR -2000 µSTR to +2000 µSTR -5000 µSTR to +5000 µSTR			
Maximum s Frequency r A/D convers mV/V range Measureme	ample rate range (-3 dB)" sion resolution support nt range/measurable Measurement range (F 500 µSTR 1000 µSTR 2000 µSTR 5000 µSTR 10000 µSTR	DC to 20 k 16 bit (480 mV/V rang range	0 LSB/div: Upper = +FS, Lower = -FS) e = 0.5 × (µSTR range/1000) Measurable range (-FS to +FS) -500 µSTR to +500 µSTR -1000 µSTR to +1000 µSTR -2000 µSTR to +2000 µSTR -5000 µSTR to +5000 µSTR -10000 µSTR to +10000 µSTR			
Maximum s Frequency i A/D convers mV/V range Measureme	ample rate range (-3 dB)" sion resolution support nt range/measurable Measurement range (F 500 µSTR 1000 µSTR 2000 µSTR 5000 µSTR	DC to 20 k 16 bit (480 mV/V rang range S)	0 LSB/div: Upper = +FS, Lower = -FS) e = 0.5 × (µSTR range/1000) Measurable range (-FS to +FS) -500 µSTR to +500 µSTR -1000 µSTR to +1000 µSTR -2000 µSTR to +2000 µSTR -5000 µSTR to +5000 µSTR			
Maximum s Frequency I A/D converse mV/V range Measureme Masureme	ample rate range (-3 dB)'1 sion resolution support nt range/measurable Measurement range (F 500 µSTR 1000 µSTR 2000 µSTR 5000 µSTR 10000 µSTR	DC to 20 k 16 bit (480 mV/V rang range S) · less) 10 V (DC 4	0 LSB/div: Upper = +FS, Lower = -FS) e = 0.5 × (µSTR range/1000) Measurable range (-FS to +FS) -500 µSTR to +500 µSTR -1000 µSTR to +1000 µSTR -2000 µSTR to +2000 µSTR -10000 µSTR to +10000 µSTR -20000 µSTR to +20000 µSTR + ACpeak)			
Maximum s Frequency I A/D converse mV/V range Measureme Masureme Maximum ra	ample rate range (-3 dB)'1 sion resolution support int range/measurable Measurement range (F 500 µSTR 1000 µSTR 2000 µSTR 10000 µSTR 20000 µSTR 20000 µSTR	DC to 20 k 16 bit (480 mV/V rang range \$) 10 V (DC 4 (1 kHz or less 42 V (DC 4	0 LSB/div: Upper = +FS, Lower = -FS) e = 0.5 × (µSTR range/1000) Measurable range (-FS to +FS) -500 µSTR to +500 µSTR -1000 µSTR to +1000 µSTR -2000 µSTR to +2000 µSTR -5000 µSTR to +5000 µSTR -10000 µSTR to +10000 µSTR -20000 µSTR to +20000 µSTR + ACpeak) ss) + ACpeak) (CAT II, 30 Vrms)			
Maximum s Frequency I A/D converse mV/V range Measureme Maximum ir Maximum ra	ample rate range (-3 dB)'1 sion resolution support int range/measurable Measurement range (F 500 µSTR 1000 µSTR 2000 µSTR 10000 µSTR 20000 µSTR 20000 µSTR	DC to 20 k 16 bit (480 mV/V rang range \$) 10 V (DC + (1 kHz or less 42 V (DC + ±(0.5% of	0 LSB/div: Upper = +FS, Lower = -FS) e = 0.5 × (µSTR range/1000) Measurable range (-FS to +FS) -500 µSTR to +500 µSTR -1000 µSTR to +1000 µSTR -2000 µSTR to +2000 µSTR -5000 µSTR to +10000 µSTR -20000 µSTR to +20000 µSTR + ACpeak) ss)			

Bandwidth limit	Full/10 Hz/100 Hz/1 kHz		
NDIS (701270) Function	mV/V support.		
	Supports the strain gauge transducer unit system.		
Input connector	NDIS connector [Recommended by JSNDI (The Japanese Society for Non-destructive Inspection]		
Standard accessories	NDIS connector : 2 pieces		
Recommended bridge head (sold			
	701955 (NDIS 120 Ω , comes with a 5-m cable) 701956 (NDIS 350 Ω , comes with a 5-m cable)		
• DSUB, Shunt-Cal (701271)			
Function	mV/V support.		
Supports	the strain gauge transducer unit system. Shunt calibration support.		
	Built-in shunt calibration relay (1 gauge method).		
Input connector	9-pin D-Sub connector (female)		
Standard accessories	Connector shell set for soldering: 2 sets		
Recommended bridge nead (supp	ports DSUB shunt-Cal) (sold separately) 701957 (D-Sub 120 Ω, comes with a 5-m cable) 701958 (D-Sub 350 Ω, comes with a 5-m cable)		
Weight	Approx. 260 g		
Acceleration/Voltage Module (wi	th AAF) (701275)		
Input channels	2		
Input type	Isolated unbalanced		
Input coupling	AC, DC, ACCL (acceleration), and GND		
Input connector	BNC connector (metallic type)		
Input impedance	1 MΩ ±1%, approx. 35 pF		
Common mode rejection ratio	80 dB (50/60 Hz) or more (Typ.)		
Maximum sample rate	100 kS/s		
Frequency range (–3 dB)"	Acceleration: 0.4 Hz to 40 kHz Voltage: DC to 40 kHz		
A/D conversion resolution	16 bit (2400 LSB/div)		
Voltage-axis sensitivity setting ¹²	Acceleration (\pm 5 V = \times 1 range) X0.1 to \times 1 to X100 (1-2-5 steps)		
	Voltage: 5 mV/div to 10 V/div (1-2-5 steps)		
Maximum input voltage (1 kHz or	less) ^{*10} 42 V (DC + ACpeak)		
Maximum rated voltage to earth (1 kHz or less) ¹¹ 42 V (DC + ACpeak) (CAT II, 30 Vrms)		
-3 dB point when AC coupled low			
Vertical (voltage) axis accuracy ⁻¹	Voltage (DC accuracy): ±(0.25% of 10 div) Acceleration: ±(0.5% of range) at 1 kHz		
Temperature coefficient (voltage)			
	Zero point: ±(0.02% of 10 div)/°C (Typ.) Gain: ±(0.02% of 10 div)/°C (Typ.)		
	Full/Auto (AAF)/40 Hz/400 Hz/4 kHz		
Bandwidth limit	\$ <i>P</i>		
Bandwidth limit Anti-aliasing filter (AAF)	Cutoff frequency (fc):		
	Cutoff frequency (fc): automatically linked with the sampling frequency (fs) fs \geq 100 Hz : fc = fs \times 40% fs \leq 50 Hz : fc = 20 Hz		
Anti-aliasing filter (AAF)	$ \begin{array}{l} \mbox{Cutoff frequency (fc):} \\ \mbox{automatically linked with the sampling frequency (fs)} \\ \mbox{fs} \geq 100 \mbox{ Hz}: fc = fs \times 40\% \\ \mbox{fs} \leq 50 \mbox{ Hz}: fc = 20 \mbox{ Hz} \\ \mbox{Cutoff characteristics:} -65 \mbox{ dB at } 2 \times fc \mbox{(Typ.)} \end{array} $		
Anti-aliasing filter (AAF) Sensor supply current (voltage)			
Anti-aliasing filter (AAF) Sensor supply current (voltage)	$ \begin{array}{l} \mbox{Cutoff frequency (fc):} \\ \mbox{automatically linked with the sampling frequency (fs)} \\ \mbox{fs} \geq 100 \mbox{ Hz}: fc = fs \times 40\% \\ \mbox{fs} \leq 50 \mbox{ Hz}: fc = 20 \mbox{ Hz} \\ \mbox{Cutoff characteristics:} -65 \mbox{ dB at } 2 \times fc \mbox{(Typ.)} \end{array} $		
Anti-aliasing filter (AAF) Sensor supply current (voltage) Applicable acceleration sensor			
Anti-aliasing filter (AAF) Sensor supply current (voltage) Applicable acceleration sensor Weight			
Anti-aliasing filter (AAF) Sensor supply current (voltage) Applicable acceleration sensor Weight Frequency Module (720281)			
Anti-aliasing filter (AAF)	Cutoff frequency (fc): automatically linked with the sampling frequency (fs) fs ≥ 100 Hz : fc = fs × 40% fs ≤ 50 Hz : fc = 20 Hz Cutoff characteristics: -65 dB at 2 × fc (Typ.) OFF/4 mA ±10% (approx. 22 VDC) Built-in amplifier type Kistler Instruments Corp. : Piezotron, PCB Piezotronics Inc. : ICP, Endevco Corp : Isotron, etc. Approx. 280 g Frequency (Hz), RPMs, RPSs, period (s),		
Anti-aliasing filter (AAF) Sensor supply current (voltage) Applicable acceleration sensor Weight Frequency Module (720281) Measurement function	Cutoff frequency (fc): automatically linked with the sampling frequency (fs) fs \geq 100 Hz : fc = fs \times 40% fs \leq 50 Hz : fc = 20 Hz Cutoff characteristics: -65 dB at 2 × fc (Typ.) OFF/4 mA ±10% (approx. 22 VDC) Built-in amplifier type Kistler Instruments Corp. : Piezotron, PCB Piezotronics Inc. : ICP, Endevco Corp : Isotron, etc. Approx. 280 g Frequency (Hz), RPMs, RPSs, period (s), duty cycle (%), power supply frequency (Hz), pulse width (s), pulse integration, and velocity		
Anti-aliasing filter (AAF) Sensor supply current (voltage) Applicable acceleration sensor Weight Frequency Module (720281) Measurement function Input channels Input type			
Anti-aliasing filter (AAF) Sensor supply current (voltage) Applicable acceleration sensor Weight Frequency Module (720281) Measurement function			
Anti-aliasing filter (AAF) Sensor supply current (voltage) Applicable acceleration sensor Weight Frequency Module (720281) Measurement function Input channels Input type Input coupling	Cutoff frequency (fc): automatically linked with the sampling frequency (fs) fs \geq 100 Hz : fc = fs \times 40% fs \leq 50 Hz : fc = 20 Hz Cutoff characteristics: -65 dB at 2 × fc (Typ.) OFF/4 mA ±10% (approx. 22 VDC) Built-in amplifier type Kistler Instruments Corp. : Piezotron, PCB Piezotronics Inc. : ICP, Endevco Corp : Isotron, etc. Approx. 280 g Frequency (Hz), RPMs, RPSs, period (s), duty cycle (%), power supply frequency (Hz), pulse width (s), pulse integration, and velocity 2 Isolated unbalanced AC and DC BNC connector (isolated type) 1 MΩ ±1%, approx. 35 pF Pul-up function: 10 kΩ, approx. 5 V (pull-up can be turned C		
Anti-aliasing filter (AAF) Sensor supply current (voltage) Applicable acceleration sensor Weight Frequency Module (720281) Measurement function Input channels Input channels Input coupling Input connector Input impedance	Cutoff frequency (fc): automatically linked with the sampling frequency (fs) fs \geq 100 Hz : fc = fs \times 40% fs \leq 50 Hz : fc = 20 Hz Cutoff characteristics: -65 dB at 2 × fc (Typ.) OFF/4 mA ±10% (approx. 22 VDC) Built-in amplifier type Kistler Instruments Corp. : Piezotron, PCB Piezotronics Inc. : ICP, Endevco Corp : Isotron, etc. Approx. 280 g Frequency (Hz), RPMs, RPSs, period (s), duty cycle (%), power supply frequency (Hz), pulse width (s), pulse integration, and velocity 2 Isolated unbalanced AC and DC BNC connector (isolated type) 1 M\Omega ±1%, approx. 35 pF Pull-up function: 10 KΩ, approx. 5 V (pull-up can be turned C only when the input is set to Pull-Up 5 V)		
Anti-aliasing filter (AAF) Sensor supply current (voltage) Applicable acceleration sensor Weight Frequency Module (720281) Measurement function Input channels Input coupling Input connector	Cutoff frequency (fc): automatically linked with the sampling frequency (fs) fs \geq 100 Hz : fc = fs \times 40% fs \leq 50 Hz : fc = 20 Hz Cutoff characteristics: -65 dB at 2 × fc (Typ.) OFF/4 mA ±10% (approx. 22 VDC) Built-in amplifier type Kistler Instruments Corp. : Piezotron, PCB Piezotronics Inc. : ICP, Endevco Corp : Isotron, etc. Approx. 280 g Frequency (Hz), RPMs, RPSs, period (s), duty cycle (%), power supply frequency (Hz), pulse width (s), pulse integration, and velocity 2 Isolated unbalanced AC and DC BNC connector (isolated type) 1 MΩ ±1%, approx. 35 pF Pull-up function: 10 kΩ, approx. 5 V (pull-up can be turned C only when the input is set to Pull-Up 5 V) 1 MHz (1 µs)		
Anti-aliasing filter (AAF) Sensor supply current (voltage) Applicable acceleration sensor Weight Frequency Module (720281) Measurement function Input channels Input coupling Input coupling Input connector Input impedance Data update rate Minimum measurement resolutior	Cutoff frequency (fc): automatically linked with the sampling frequency (fs) fs \geq 100 Hz : fc = fs \times 40% fs \leq 50 Hz : fc = 20 Hz Cutoff characteristics: -65 dB at 2 × fc (Typ.) OFF/4 mA ±10% (approx. 22 VDC) Built-in amplifier type Kistler Instruments Corp. : Piezotron, PCB Piezotronics Inc. : ICP, Endevco Corp : Isotron, etc. Approx. 280 g Frequency (Hz), RPMs, RPSs, period (s), duty cycle (%), power supply frequency (Hz), pulse width (s), pulse integration, and velocity 2 Isolated unbalanced AC and DC BNC connector (isolated type) 1 MΩ ±1%, approx. 35 pF Pull-up function: 10 kΩ, approx. 5 V (pull-up can be turned C only when the input is set to Pull-Up 5 V) 1 MHz (1 µs) 625 ps		
Anti-aliasing filter (AAF) Sensor supply current (voltage) Applicable acceleration sensor Weight Frequency Module (720281) Measurement function Input channels Input coupling Input coupling Input connector Input impedance Data update rate Minimum measurement resolution Measured data resolution	Cutoff frequency (fc): automatically linked with the sampling frequency (fs) fs \geq 100 Hz : fc = 5 x 40% fs \leq 50 Hz : fc = 20 Hz Cutoff characteristics: -65 dB at 2 x fc (Typ.) OFF/4 mA ±10% (approx. 22 VDC) Built-in amplifier type Kistler Instruments Corp. : Piezotron, PCB Piezotronics Inc. : ICP, Endevco Corp : Isotron, etc. Approx. 280 g Frequency (Hz), RPMs, RPSs, period (s), duty cycle (%), power supply frequency (Hz), pulse width (s), pulse integration, and velocity 2 Isolated unbalanced AC and DC BNC connector (isolated type) 1 MΩ ±1%, approx. 35 pF Pull-up function: 10 kΩ, approx. 5 V (pull-up can be turned C only when the input is set to Pull-Up 5 V) 1 MHz (1 µs) 625 ps 16 bit (2400 LSB/div)		
Anti-aliasing filter (AAF) Sensor supply current (voltage) Applicable acceleration sensor Weight Frequency Module (720281) Measurement function Input channels Input coupling Input coupling Input connector Input impedance Data update rate Minimum measurement resolutior	Cutoff frequency (fc): automatically linked with the sampling frequency (fs) fs \geq 100 Hz : fc = fs \times 40% fs \leq 50 Hz : fc = 20 Hz Cutoff characteristics: -65 dB at 2 × fc (Typ.) OFF/4 mA ±10% (approx. 22 VDC) Built-in amplifier type Kistler Instruments Corp. : Piezotron, PCB Piezotronics Inc. : ICP, Endevco Corp : Isotron, etc. Approx. 280 g Frequency (Hz), RPMs, RPSs, period (s), duty cycle (%), power supply frequency (Hz), pulse width (s), pulse integration, and velocity 2 Isolated unbalanced AC and DC BNC connector (isolated type) 1 MΩ ±1%, approx. 35 pF Pull-up function: 10 kΩ, approx. 5 V (pull-up can be turned C only when the input is set to Pull-Up 5 V) 1 MHz (1 µs) 625 ps		

Main Specifications (plug-in modules)

ScopeCorder series

Maximum rated volta In combination with		702902 (10:1)/7	01947 (100:1) ⁻³ 400 Vrms (CAT II
Direct input*11			42 V (DC + ACpeak) (CAT II, 30 Vrms
Bandwidth limit		Full/100 Hz/1 kH	Hz/10 kHz/100 kHz
Comparator section		Preset function	Logic (5 V/3 V/12 V/24 V), electromagnetic pickup, zero crossing, pull-up (5 V), AC100 V, AC 200 V, and user-defined
		Threshold range	±FS range, resolution 1% units
		Hysteresis	±1%, ±2.5%, ±5% of FS
Chatter elimination fu	Inction	OFF or 1 ms to	1000 ms (1 ms resolution)
_ED display (per CH)			erating status (lights during pulse input) rdrive status (lights when input exceeds range)
Veasured parameter	1		
Measured parameter		ing Range	Vertical axis sensitivity setting
Frequency (Hz)	0.01 Hz to 50		0.1 Hz/div to 100 kHz/div
RPMs	0.01 rpm to		0.1 rpm/div to 10 krpm/div
RPSs	0.001 rps to	2000 rps	0.01 rps/div to 200 rps/div
Period (s)	2 µs to 50 s		10 µs/div to 5 s/div
Duty cycle (%)	0% to 100%		1%/div to 20%/div
Power supply frequency (Hz)	(50 Hz, 60 H ±20 Hz	z, 400 Hz)	0.1 Hz/div to 2 Hz/div
Pulse width (s)	1 µs to 50 s		10 µs/div to 5 s/div
Pulse integration	Up to 2 × 10	9 pulses	10×10^{-21} value/div to 0.5×10^{21} value/div
Velocity	Measuring ra	inge same as fre	quency (units can be converted to km/h, etc.)
	curacy % of 10 div + a	accuracy depend	urement mode dent on the input frequency)
2 kHz 50 kH 100 kH	dent on the inp or less to 50 kHz z to 100 kHz Hz to 200 kHz Hz or higher	0.05% of the 0.05% of the 0.1% of the in	frequency
When in period m Measurement ac ±(0.05 Accuracy dependent	curacy % of 10 div + a	accuracy depend	lent on the input frequency)
500 με 20 μs 10 μs	s or greater to 500 μs to 20 μs or less	0.05% of the 0.1% of the in 0.2% of the in	nput period put period + 0.1 μs put period + 0.1 μs put period + 0.1 μs
When in duty cyc			
50 kH	dent on the inp z or less z to 100 kHz Hz to 200 kHz	±0.1% ±0.2%	
	Hz to 500 kHz		
When in pulse with Measurement act ±(0.05)	curacy		dent on the input pulse width)
Accuracy depend	dent on the inp	ut pulse width	
	s or greater		nput pulse width
	to 500 μs to 20 μs		put pulse width + 0.1 μs put pulse width + 0.1 μs
	or less		put pulse width + 0.1 µs
When in power su Measurement ac	curacy		
			Hz: ±0.03 Hz (0.01 Hz resolution) : ±0.3 Hz (0.01 Hz resolution)
Auxiliary measureme		-	. ,
Deceleration prediction	is cut of	f. Can be specifi	ion condition in realtime when the pulse input ed when measuring the frequency, RPMs,
Stop prediction Sets th input is times (period, and velocity. he frequency to 0 after a certain time elapses after the pulse s cut off. Stop interval setting: Set in the range of 1.5 to 10 [10 settings] the period of the pulse measured last. Can be ed when measuring the frequency, RPMs, RPSs, period, and	
Smoothing	specified	es the moving a difference of the time. Specified	verage of the measured data using the time: 0.1 to 1000 ms (0.1 ms resolution). neasurement parameters.
Pulse average	Perform When flu fluctuation Can be	s frequency mea uctuation exists on can be elimin specified when r	Isurement per spannetes. Isurement per spannetes. Deriodically in the pulse interval, the ated. Specified number of pulses: 1 to 4096. measuring the frequency, RPMs, RPSs, period, pulse integration, and velocity.
Offset function			respect to the offset frequency. Offset range: nes the maximum range value.

Approx. 270 g

Weight

Model: 722912 (8 bit, non-isolated input, support contact input Weight Approx. 250 g CAN ED/LIN Monitor Module (720245) Input type Input type Isolated unbalanced Input type Isolated unbalanced Input tonnector D-sub 9 pin (male) Maximum sample rate 100 kS/s Port features CAN FD/LIN switchable on each port separately Maximum input voltage -3 V to +10 V (between CAN_H and GND or CAN_L and GND monitositon) Between input and case -3 V to +10 V (between CAN_H and GND or CAN_L and GND monitositon) Supported protocols CAN, CAN FD (ISO 11898 (High Speed Communication) Supported bit rates 10 kbps, 20 kbpp, 33 kbps, 50 kbpp, 800 kbps, 100 kbp, 67 kbpp, 83 kbps, 50 kbpp, 800 kbps, 100 kbps, 11 kbp Multiplexing Supports extended multiplexing (Imited to the second byte for Multiplexing isolals) SAE J1339 Source address and destination address masking possible. Can receive signals in the transport protocol LED Display Illuminates to indicate that the terminator is enabled Number of sub channels 60 sub channels/ports One shot output Frames can be output in single shots. CAN/CAN FD package can be exported for CAN FD. UN o	Input ports	2
Maximum sample rate 10 MS/s Compatible probes Model: 700396 (8 bit, non isolated input) Model: 702911 (8 bit, non-isolated input, support contact input Model: 702911 (8 bit, non-isolated input, support contact input Model: 702911 (8 bit, non-isolated input, support contact input Model: 702912 (8 bit, non-isolated input, support contact input Model: 702912 (8 bit, non-isolated input, support contact input Model: 702912 (8 bit, non-isolated input, support contact input mput type Weight Approx. 250 g CAN FD/LIN Monitor Module (720245) Numme analpe rate 100 KS/s Port features CAN FD/LIN switchable on each port separately Maximum rated voltage to ground Between input and case Between input and case Between input and case Separation specifications Maximum ricut voltage -3 V to +10 V (between CAN_H and GND or CAN_L and GND maximic input voltage Terminator Internal, can be enabled or disabled for each port Supported protocols Physical layer: Sol 11888 (Hith, Seed Communication) Supported protocols CAN, CAN FD (SO 11898 See 0 kbps, 60 kbps, 100 kbps, 11 kbp Fexhibe data rate 1 Mbps, 2 Mbps, 50 kbps, 62 kbps, 65 kbps, 50 kbps, 50 kbps, 50 kbps, 50 kbps, 60 kbps, 100 kbp Fexhibe data rate 1 Mbps, 2 Mbps, 5 Mbps Multiplexing Supported protocol Can receive signals in the transport protocol Can receive signals in the transport protocol Can receive signals in the transport protocol <	Input type	non-isolated
Compatible probes Model: 700866 (8 bit, non isolated input) Model: 700817 (8 bit, isolated input) Model: 702812 (8 bit, non-isolated input, support contact inp. Model: 702812 (8 bit, non-isolated input, support contact inp. Model: 702812 (8 bit, non-isolated input, support contact inp. Weight Approx. 250 g CAN ED/LIN Monitor Module (720245) Number of input ports 2 Input type Isolated unbalanced Input connector D-sub 9 pin (male) Maximum ample rate 100 kS/s Port features CAN FD/LIN switchable on each port separately Maximum rated voltage to ground Between input and case Supported for cons. Maximum rated voltage to ground Between input and case Supported for cons. Maximum rated voltage to ground Between input and case Supported for cons. Supported protocols CAN, CAN FD (SO 11898) F12015 or non-ISO Privialal layer: ISO-11898 (High Speed Communication) Supported bit rates 10 kbps. S0 kbps, 50 kbps, 60 kbps, 10 kbps Multiplexing Supported check multiplexing (initited to the second byte for Multiplexing supports extended multiplexing (initited to the second byte for Multiplexing supports extended multiplexing (initited to the second byte for Multiplexing Supported therates One shot output Frames can be cupput in single shots. CAN (CAN FD package can be exported (pack	Input bits	8 bit/Port
Model: 70087 (B bit, isolated input, support contact inp. Weight Approx. 250 g CAN FD/LIN Monitor Module (720245) Number of input ports 2 Input type isolated unbalanced Input connector D-sub 9 pin (male) Maximum sample rate 100 k5/s Port features CAN FD/LIN switchable on each port separately Maximum rated voltage to ground 42 V (DC + ACpeak) (CAT II 30 Vms) Between input and case Between input and case Between input and case CAN FD/LIN switchable on each port separately Maximum rated voltage to ground 42 V (DC + ACpeak) (CAT II 30 Vms) Between input and case Each control (SO 11989 High Speed Communication) Maximum input voltage -3 V to +10 V (between CAN_L and GND or CAN_L and GN	Maximum sample rate	10 MS/s
Model: 70087 (B bit, isolated input, support contact inp. Weight Approx. 250 g CAN FD/LIN Monitor Module (720245) Number of input ports 2 Input type isolated unbalanced Input connector D-sub 9 pin (male) Maximum sample rate 100 k5/s Port features CAN FD/LIN switchable on each port separately Maximum rated voltage to ground 42 V (DC + ACpeak) (CAT II 30 Vms) Between input and case Between input and case Between input and case CAN FD/LIN switchable on each port separately Maximum rated voltage to ground 42 V (DC + ACpeak) (CAT II 30 Vms) Between input and case Each control (SO 11989 High Speed Communication) Maximum input voltage -3 V to +10 V (between CAN_L and GND or CAN_L and GN		Model: 700986 (8 bit, non isolated input)
Weight Approx. 250 g CAN FD/LIN Monitor Module (720245) Number of input ports 2 Input type Isolated unbalanced Input type Isolated unbalanced Input connector D=sub 9 pin (male) Maximum sample rate 100 kS/s Port features CAN FD/LIN switchable on each port separately Maximum rated voltage to ground 42 V (DC + ACpeak) (CAT II 30 Vms) Between input and case Between input and case CAN operation specifications -3 V to +10 V (between CAN, H and GND or CAN, L and GND or CAN, C an receive signals in the transport protocol SAE J1939 Gource ande		Model: 700987 (8 bit, isolated input) Model: 702911 (8 bit, non-isolated input, support contact inpu
Number of input ports 2 Input type Isolated unbalanced Input connector D-sub 9 pin (male) Maximum sample rate 100 KS/s Port features CAN FD/LIN switchable on each port separately Maximum rated voltage to ground 42 V (DC + ACpeak) (CAT II 30 Vms) Between inputs CAN operation specifications Maximum input voltage -3 V to +10 V (between CAN_H and GND or CAN_L and GND Terminator Internal, can be enabled or disabled for each port Supported protocols CAN, CAN FD (SO 11898-1: 2015 or non-ISO) Physical layer: ISO-11898 (High Speed Comunication) Supported protocols Supported protocols CAN, CAN FD (SO 11898-5, SO Kbps, 500 Kbps, 1 Mbp Multiplexing Supports extended multiplexing (imited to the second byte for Multiplexing signals) SAE J1939 Source address and destination address masking possible. Can receive signals in the transport protocol LED Display Illuminates to indicate that the terminator is enabled Number of sub channels 60 sub channels/ports Supported protocols Physical layer: Complex with ISOP11 Supported protocols Physical layer: Complex with ISOP11 Su	Weight	
Number of input ports 2 Input type Isolated unbalanced Input connector D-sub 9 pin (male) Maximum sample rate 100 KS/s Port features CAN FD/LIN switchable on each port separately Maximum rated voltage to ground 42 V (DC + ACpeak) (CAT II 30 Vms) Between inputs CAN operation specifications Maximum input voltage -3 V to +10 V (between CAN_H and GND or CAN_L and GND Terminator Internal, can be enabled or disabled for each port Supported protocols CAN, CAN FD (SO 11898-1: 2015 or non-ISO) Physical layer: ISO-11898 (High Speed Comunication) Supported protocols Supported protocols CAN, CAN FD (SO 11898-5, SO Kbps, 500 Kbps, 1 Mbp Multiplexing Supports extended multiplexing (imited to the second byte for Multiplexing signals) SAE J1939 Source address and destination address masking possible. Can receive signals in the transport protocol LED Display Illuminates to indicate that the terminator is enabled Number of sub channels 60 sub channels/ports Supported protocols Physical layer: Complex with ISOP11 Supported protocols Physical layer: Complex with ISOP11 Su	CAN FD/LIN Monitor Module (720)245)
Imput connector D-sub 9 pin (male) Maximum sample rate 100 kS/s Port features CAN FD/LIN switchable on each port separately Maximum rated voltage to ground 42 V (DC + ACpeak) (CAT II 30 Vms) Between input and case CAN operation specifications Maximum rated voltage -3 V to +10 V (between CAN_H and GND or CAN_L and GND CAN operation specifications CAN (AN FD (SO 11898)-1: 2015 or non-SO) Supported protocols CAN, CAN FD (SO 11898)-1: 2015 or non-SO) Supported bit rates 10 kbps, 20 kbps, 33 & kbps, 50 kbps, 60 kbps, 1Mp Rultiplexing Supports extended multiplexing (imited to the second byte for Multiplexing signals in the transport protocol Multiplexing Supports extended multiplexing (imited to the second byte for Multiplexing signals in the transport protocol LED Display Illuminates to indicate that the terminator is enabled Number of sub channels 60 sub channels/ports One shot output Frames can be exported for CAN FD. UN operation specifications Anternal systemes Maximum input voltage -0.3 V to +18 V (between LIN and GND or VBAT and GND) Supported protocols Physical layer: Complies with ISO2141 Supported pr	· · · · ·	
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H input voltage 3.5 V (Typ.) Input status indication Status indication through LED In operation: Illuminates in green when input is detected. Overdriven: Illuminates in red when the input voltage exceeds 20 V. Maximum input voltage 42 V (DC + ACpeak) (CAT II, 30 Vrms)		
Input status indication Status indication through LED In operation: Illuminates in green when input is detected. Overdriven: Illuminates in red when the input voltage exceeds 20 V. Maximum input voltage 42 V (DC + ACpeak) (CAT II, 30 Vrms)		
Maximum input voltage 42 V (DC + ACpeak) (CAT II, 30 Vrms)		Status indication through LED In operation: Illuminates in green when input is detected. Overdriven: Illuminates in red when the input voltage exceeds
		2017
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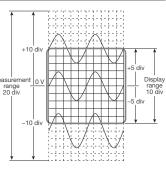
Measurement Range and Display Range

The measurement range of the ScopeCorder is ± 10 divisions (20 divisions of absolute width (span)) around 0 V. The display range of the screen is ± 5 divisions (10 divisions of span). The following functions can be used to move the displayed waveform and display the waveform outside the display range by expanding/reducing the displayed waveform.

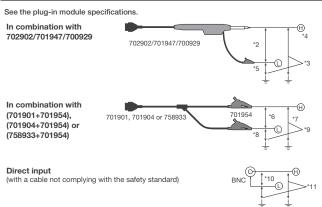
Move the vertical position.

Set an offset voltage.Zoom in or out of the vertical axis (expand/

Zoom in or out of the ventical axis (expansion reduce).



Maximum Input Voltage and Maximum rated voltage to earth



Me

WARNING

Do not apply input voltage exceeding the maximum input voltage or maximum rated voltage to earth. To prevent the possibility of electric shock, be sure to furnish protective earth grounding of the main unit. To prevent the possibility of electric shock, be sure to fasten the module screws.

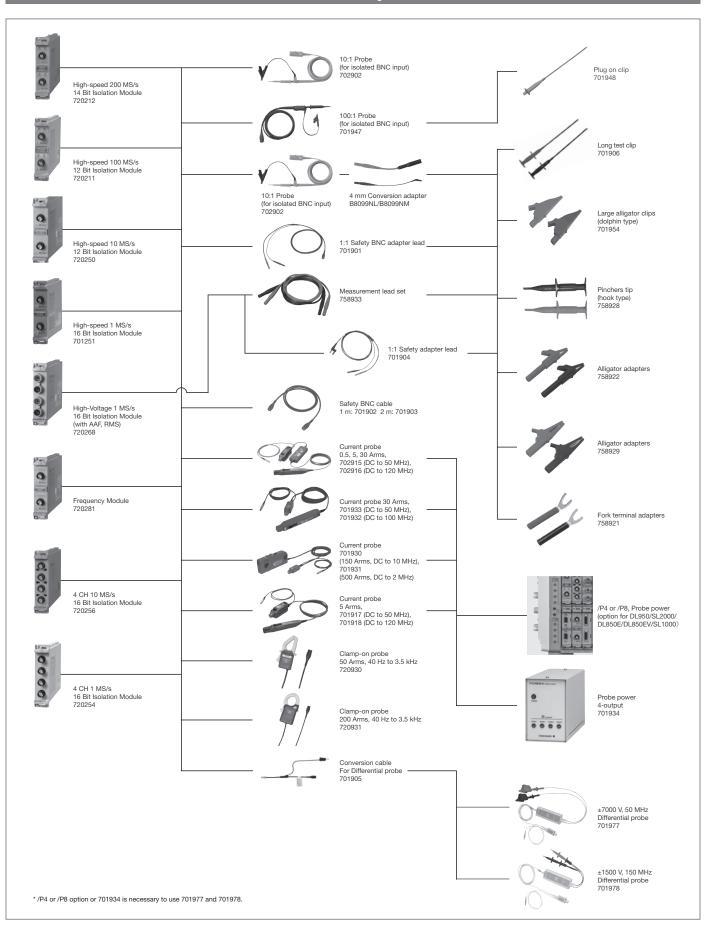
Main Specifications (probes and accessories)

Main Specifications (probes and accessories)

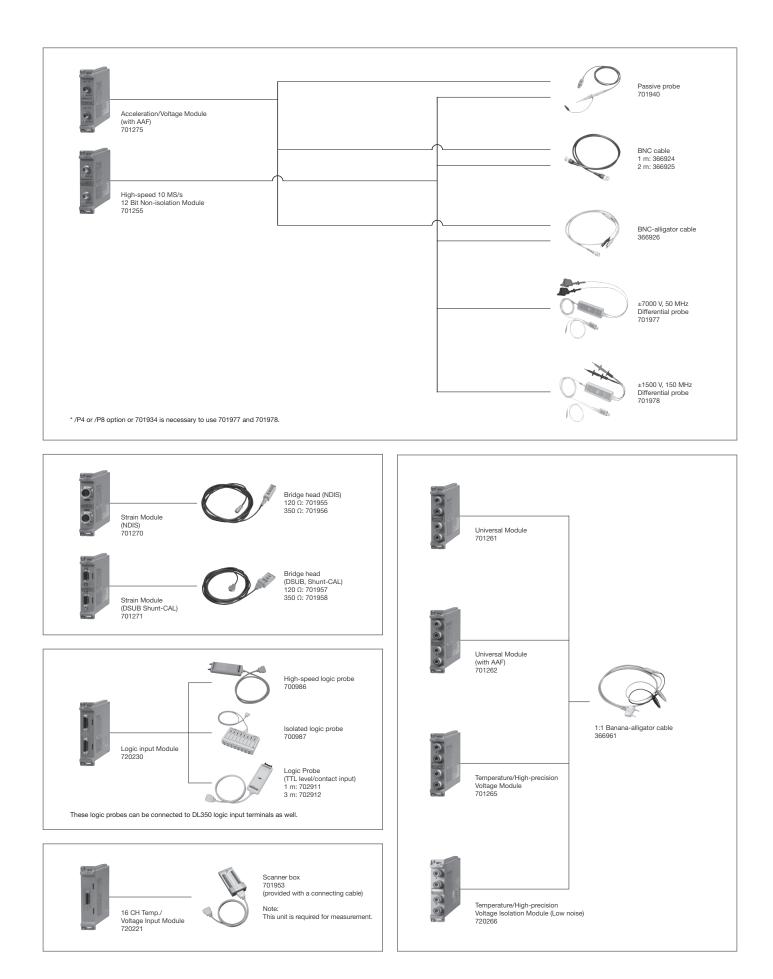
Frequency range (- 2 dP)	C Input) (701947) DC to 200 MHz			
Frequency range (–3 dB) Attenuation ratio	100:1			
Input impedance/capacitance				
Maximum input voltage'2	Space between shield and earth.			
inaxiinani inpat tonago	±1000 V (DC + ACpeak) CAT II			
	±1000 V (DC + ACpeak) CAT I Space between tip and shield, tip and earth.			
	±1000 V (DC + ACpeak) CAT II			
	±3540 V (DC + ACpeak) CAT I			
Total length	1.5 m			
 When the input impedance of the r When the input voltage is AC, the r 	measuring instrument is $1 \mod 1\%$. maximum allowable input decreases depending on the frequency.			
10.1 Passive Probe (Wide one	erating temperature range) (702902)			
Frequency range (-3 dB)	DC to 60 MHz			
Attenuation ratio	10:1 (Fixed)			
	±2% (5 to 40°C) ±3% (-40 to 5°C, 40 to 85°C)			
Input resistance/capacitance'	10 MΩ ± 2%/17.0 pF (Typ.)			
Maximum input voltage	Between the pincher tip and safety ground lead			
	±1000 V (DC + ACpeak) CAT II Between safety ground lead and ground			
	±1000 V (DC + ACpeak) CAT I			
Total length	2.5 m			
Operating temperature range	-40 to +85°C			
In conjunction with a measuring instru	ument with an input impedance of 1 M Ω ±1%.			
10:1 Probe (for Isolated BNC	Input) (700929)			
Frequency range (–3 dB)	DC to 100 MHz			
Attenuation ratio	10:1			
Input impedance/capacitance	10 MΩ/approx. 18 pF			
Maximum input voltage (probe				
	1000 V (DC + AC peak) Space between clip and lead, lead and earth. When the			
	input voltage is AC, the maximum allowable input decreases			
Total length	depending on the frequency. 1.5 m			
Total length	1.0 11			
Current Probe (701917/70191				
Frequency range (-3 dB)	DC to 50 MHz (701917) / DC to 120 MHz (701918)			
Maximum continuous input rai	nge 5 Arms (The maximum allowable input decreams depending the frequency.)			
Maximum peak current	7.5 Apeak, non-continuous			
Output voltage range	1 V/A			
Amplitude accuracy	±3.0% of reading ±1 mV typical,			
	$\pm 3.0\%$ of reading ± 1 mV (DC and 45 to 66 Hz)			
Current Probe (702915/70291	6)			
Frequency range (-3 dB)	DC to 50 MHz (702915) / DC to 120 MHz (702916)			
Current measurement range	0.5 A 5 A 30 A			
Maximum peak current	±0.75 A ±7.5 A ±50 A (2 s or less			
Output voltage rate	0.1 V/A 1 V/A 10 V/A			
Amplitude accuracy ±	±3.0% of reading ±10 mV ±3.0% of reading ±1 mV			
Current Probe (701932)				
Frequency range (-3 dB)	DC to 100 MHz			
iviaximum continuous input rai	nge 30 Arms (The maximum allowable input decreases depending on the frequency.)			
Maximum peak current	50 Apeak, non-continuous			
Output voltage rate	0.1 V/A			
Amplitude accuracy	To 30 Arms: ±1% of reading ±1 mV			
-	30 Arms to 50 Apeak: $\pm 2\%$ of reading (DC and 45 to 66 Hz)			
Current Probe (701933)				
Frequency range (-3 dB)	DC to 50 MHz			
Frequency range (=3 ub)	nge 30 Arms (AC and DC components) (The maximum allowable			
	input decreases depending on the frequency.)			
	Input decreases depending on the frequency.			
Maximum continuous input rai	50 Apeak, non-continuous			
Maximum continuous input rai Maximum peak current				
	50 Apeak, non-continuous 0.1 V/A To 30 Arms: ±1% of reading ±1 mV			
Maximum continuous input rai Maximum peak current Output voltage rate	50 Apeak, non-continuous 0.1 V/A			
Maximum continuous input rai Maximum peak current Output voltage rate Amplitude accuracy	50 Apeak, non-continuous 0.1 V/A To 30 Arms: ±1% of reading ±1 mV			
Maximum continuous input rai Maximum peak current Output voltage rate	50 Apeak, non-continuous 0.1 V/A To 30 Arms: ±1% of reading ±1 mV			

	000 A
Maximum peak current	300 Apeak, non-continuous
Output voltage rate	0.01 V/A
Amplitude accuracy	To 150 A: \pm 1% of reading \pm 1 mV 150 A to 300 A: \pm 2% of reading (DC and 45 to 66 Hz)
Current Probe (701931)	
Frequency range (-3 dB)	DC to 2 MHz
Maximum continuous input range	 500 A (The maximum allowable input decreases depending o the frequency.)
Maximum peak current	700 Apeak, non-continuous
Output voltage rate	0.01 V/A
Amplitude accuracy	To 500 A: $\pm 1\%$ of reading ± 5 mV 500 A to 700 A: $\pm 2\%$ of reading (DC and 45 to 66 Hz)
Clamp-on Probe (720930)	
Measuring range	AC 0 to 50 Arms
Measurable conductor size	Maximum 18 mm diameter
Output voltage	AC 0 to 500 mVrms (10 mV/A)
Accuracy (sine wave input)	Bandwidth ±0.5% of reading ±0.1 mV (50/60 Hz) ±0.8% of reading ±0.2 mV (40 Hz to 1 kHz) ±1.0% of reading ±0.4 mV (1 kHz to 3.5 kHz)
	Phase Within ±2.0 deg (0.5 to 50 A, 40 Hz to 3.5 kHz)
Maximum allowable input	AC 130 Arms continuous (50/60 Hz)
Output impedance	Approx. 18 Ω
Output terminal	BNC connector (isolated)
External dimensions	52 (W) \times 106 (H) \times 25 (D) mm (excluding protrusions)
Cable length	Approx. 3 m
Weight	Approx. 210 g
Clamp-on Probe (720931)	
Measuring range	AC 0 to 200 Arms (300 Apeak)
Measurable conductor size	Maximum 30 mm diameter
Output voltage	AC 0 to 500 mVrms (2.5 mV/A)
Accuracy (sine wave input)	Bandwidth ±0.5% of reading ±0.1 mV (50/60 Hz) ±0.8% of reading ±0.2 mV (40 Hz to 1 kHz) ±1.0% of reading ±0.4 mV (1 kHz to 3.5 kHz)
	Phase Within ±1.0 deg (2 to 200 A, 40 Hz to 3.5 kHz)
Maximum allowable input	AC 250 Arms continuous (50/60 Hz)
Output impedance	Approx. 6 Ω
Output terminal	BNC connector (isolated)
External dimensions	73 (W) \times 130 (H) \times 30 (D) mm (excluding protrusions)
Cable length	Approx. 3 m
Weight	Approx. 280 g
High Voltage Differential Probe (701977)
Frequency range (-3dB)	DC to 50 MHz
Attenuation ratio	Switched ratios of 100:1 and 1000:1
Input impedance/capacitance	52 MΩ/10 pF
Differential allowable voltage	5000 Vrms or less, and 7000 Vpeak or less
Maximum input voltage	5000 Vrms or less, and 7000 Vpeak or less
Operating conditions	5 to 40°C, 25 to 85% (no condensation)
Weight	Approx. 500 g
Weight Differential Probe (701978)	Approx. 500 g
	Approx. 500 g DC to 150 MHz
Differential Probe (701978)	
Differential Probe (701978) Frequency range (–3dB)	DC to 150 MHz
Differential Probe (701978) Frequency range (–3dB) Attenuation ratio	DC to 150 MHz Switched ratios of 50:1 and 500:1
Differential Probe (701978) Frequency range (–3dB) Attenuation ratio Input impedance/capacitance	DC to 150 MHz Switched ratios of 50:1 and 500:1 4.1 MΩ/5 pF
Differential Probe (701978) Frequency range (–3dB) Attenuation ratio Input impedance/capacitance Differential allowable voltage	DC to 150 MHz Switched ratios of 50:1 and 500:1 4.1 MΩ/5 pF ±1500 V (DC + ACpeak)
Differential Probe (701978) Frequency range (–3dB) Attenuation ratio Input impedance/capacitance Differential allowable voltage Maximum input voltage	DC to 150 MHz Switched ratios of 50:1 and 500:1 4.1 MΩ/5 pF ±1500 V (DC + ACpeak) ±1500 V (DC + ACpeak) DC to 10 MHz at 10:1 attenuation
Differential Probe (701978) Frequency range (–3dB) Attenuation ratio Input impedance/capacitance Differential allowable voltage Maximum input voltage Passive Probe (701940) Frequency range (–3 dB)	DC to 150 MHz Switched ratios of 50:1 and 500:1 4.1 MΩ/5 pF ±1500 V (DC + ACpeak) ±1500 V (DC + ACpeak) DC to 10 MHz at 10:1 attenuation DC to 6 MHz at 1:1 attenuation
Differential Probe (701978) Frequency range (–3dB) Attenuation ratio Input impedance/capacitance Differential allowable voltage Maximum input voltage Passive Probe (701940)	DC to 150 MHz Switched ratios of 50:1 and 500:1 4.1 MΩ/5 pF ±1500 V (DC + ACpeak) ±1500 V (DC + ACpeak) DC to 10 MHz at 10:1 attenuation

Logic Probe (702911: 1 m and	
Number of inputs	8
Input type	Non-isolated (earth of all bits is common,
	main unit earth and earth of all bits are common)
Maximum input voltage	±35 V
Response time	3 µs (Typ.)
Input impedance	10 k Ω or greater
Threshold level	Approx. 1.4 V
Input level	TTL level or contact input (switching type)
High-Speed Logic Probe (7009	986)
Number of inputs	8
Input type	Non-isolated (earth of all bits is common, main unit earth and earth of all bits are common)
Maximum input voltage (1 kHz	or less) (across probe tip and earth) 42 V (DC + ACpeak)
Response time	1 µs (Typ.)
Input impedance	Approx. 100 kΩ
Threshold level	Approx. 1.4 V
lealation Lagia Braha (700087)	
Isolation Logic Probe (700987) Number of inputs	8
nput type	Isolated (all bits are isolated)
nput connector	Safety terminal type (for banana plug) × 8
nput switching	Can switch between AC/DC input for each bit
Applicable input range	DC input H/L detection of 10 VDC to 250 VDC
	AC input H/L detection of AC type of 80 VAC to 250 VAC 50/60 Hz
Threshold level	
I nresnoid ievei	DC input 6 VDC ±50%
	AC input 50 VAC ±50%
Response time	DC input within 1 ms (Typ.)
	AC input within 20 ms (Typ.)
	or less) (across H and L of each bit)
Maximum rated voltage to eart	250 Vrms (CAT II)
	250 Vrms (CAT II) h (1 kHz or less) 250 Vrms (CAT II)
Aaximum allowable voltage be	250 Vrms (CAT II) h (1 kHz or less) 250 Vrms (CAT II) bitween bits
Maximum allowable voltage be	250 Vrms (CAT II) h (1 kHz or less) 250 Vrms (CAT II) etween bits 250 Vrms (CAT II) Approx. 100 kΩ
Maximum allowable voltage be Input impedance Bridge Head (701955, 701956,	250 Vrms (CAT II) h (1 kHz or less) 250 Vrms (CAT II) tween bits 250 Vrms (CAT II) Approx. 100 kΩ 701957, 701958) Model 701955, 701957 : 120 Ω
Maximum allowable voltage be Input impedance Bridge Head (701955, 701956, Bridge resistance	250 Vrms (CAT II) h (1 kHz or less) 250 Vrms (CAT II) stween bits 250 Vrms (CAT II) Approx. 100 kΩ 701957, 701958)
Maximum allowable voltage be Input impedance Bridge Head (701955, 701956, Bridge resistance Applicable gauge methods	250 Vrms (CAT II) h (1 kHz or less) 250 Vrms (CAT II) etween bits 250 Vrms (CAT II) Approx. 100 kΩ 701957, 701958 Model 701955, 701957 : 120 Ω Model 701956, 701958 : 350 Ω Single-gauge, Single-gauge three-wire, Adjacent-side two-gauge, Opposed-side two-gauge, Opposed-side two-gauge gauge, Opposed-side two-gauge
Maximum allowable voltage be Input impedance Bridge Head (701955, 701956, Bridge resistance Applicable gauge methods Operating conditions	250 Vrms (CAT II) h (1 kHz or less) 250 Vrms (CAT II) stween bits 250 Vrms (CAT II) Approx. 100 kΩ 701957, 701958) Model 701955, 701957 : 120 Ω Model 701956, 701958 : 350 Ω Single-gauge, Single-gauge three-wire, Adjacent-side two- gauge, Opposed-side two-gauge, Opposed-side two- gauge, Opposed-side two-gauge Temperature: 5 to 40°C Humidity: 20 to 85% RH
Maximum allowable voltage be Input impedance Bridge Head (701955, 701956, Bridge resistance Applicable gauge methods Operating conditions	250 Vrms (CAT II) h (1 kHz or less) 250 Vrms (CAT II) stween bits 250 Vrms (CAT II) Approx. 100 kΩ 701957, 701958) Model 701955, 701957 : 120 Ω Model 701955, 701958 : 350 Ω Single-gauge, Single-gauge three-wire, Adjacent-side two-gauge, Opposed-side two-gauge, Tremperature: 5 to 40°C
Maximum allowable voltage be Input impedance Bridge Head (701955, 701956, Bridge resistance Applicable gauge methods Operating conditions External dimensions	250 Vrms (CAT II) h (1 kHz or less) 250 Vrms (CAT II) tween bits 250 Vrms (CAT II) Approx. 100 kΩ 701957, 701958) Model 701955, 701957 : 120 Ω Model 701956, 701958 : 350 Ω Single-gauge, Single-gauge three-wire, Adjacent-side two-gauge, Opposed-side two-gauge, Opposed-side two-gauge, Temperature: 5 to 40°C Humidity: 20 to 85% RH 701955, 701956: Approx. 37 (W) × 97 (H) × 30 (D) mm
Maximum allowable voltage be Input impedance Bridge Head (701955, 701956, Bridge resistance Applicable gauge methods Operating conditions External dimensions Weight	250 Vrms (CAT II) h (1 kHz or less) 250 Vrms (CAT II) stween bits 250 Vrms (CAT II) Approx. 100 kΩ 701957, 701958) Model 701955, 701957 : 120 Ω Model 701956, 701958 : 350 Ω Single-gauge, Single-gauge three-wire, Adjacent-side two- gauge, Opposed-side two-gauge, Opposed-side two-gauge three-wire, Four-gauge Temperature: 5 to 40°C Humidity: 20 to 85% RH 701955, 701956: Approx. 37 (W) × 97 (H) × 30 (D) mm 701957, 701958: Approx. 50 (W) × 101 (H) × 29 (D) mm 701955, 701956: Approx. 85 g (Bridge head only)
Maximum allowable voltage be Input impedance Bridge Head (701955, 701956, Bridge resistance Applicable gauge methods Operating conditions External dimensions Weight Power Supply (701934)	250 Vrms (CAT II) h (1 kHz or less) 250 Vrms (CAT II) stween bits 250 Vrms (CAT II) Approx. 100 kΩ 701957, 701958) Model 701955, 701957 : 120 Ω Model 701956, 701958 : 350 Ω Single-gauge, Single-gauge three-wire, Adjacent-side two- gauge, Opposed-side two-gauge, Opposed-side two-gauge three-wire, Four-gauge Temperature: 5 to 40°C Humidity: 20 to 85% RH 701955, 701956: Approx. 37 (W) × 97 (H) × 30 (D) mm 701957, 701958: Approx. 50 (W) × 101 (H) × 29 (D) mm 701955, 701956: Approx. 85 g (Bridge head only)
Maximum allowable voltage be Input impedance Bridge Head (701955, 701956, Bridge resistance Applicable gauge methods Operating conditions External dimensions Weight Power Supply (701934) Compatible Probes	250 Vrms (CAT II) h (1 kHz or less) 250 Vrms (CAT II) tween bits 250 Vrms (CAT II) Approx. 100 kΩ 701957, 701958 Model 701955, 701957 : 120 Ω Model 701956, 701958 : 350 Ω Single-gauge, Single-gauge three-wire, Adjacent-side two-gauge, Opposed-side two-gauge, Opposed-side two-gauge, three-wire, Four-gauge Temperature: 5 to 40°C Humidity: 20 to 85% RH 701955, 701956: Approx. 37 (W) × 97 (H) × 30 (D) mm 701955, 701956: Approx. 37 (W) × 97 (H) × 30 (D) mm 701957, 701958: Approx. 100 g (Bridge head only) 701957, 701958: Approx. 100 g (Bridge head only) Current probe: 701930, 701931, 701932, 701933, 701917, 701918
Maximum allowable voltage be Input impedance Bridge Head (701955, 701956, Bridge resistance Applicable gauge methods Operating conditions External dimensions Weight Power Supply (701934) Compatible Probes No. of Power Receptacles	250 Vrms (CAT II) h (1 kHz or less) 250 Vrms (CAT II) tween bits 250 Vrms (CAT II) Approx. 100 kΩ 701957, 701958) Model 701955, 701957 : 120 Ω Model 701955, 701958 : 350 Ω Single-gauge, Single-gauge three-wire, Adjacent-side two-gauge, Opposed-side two-gauge, Opposed-side two-gauge, Capposed-side two-gauge three-wire, Four-gauge Temperature: 5 to 40°C Humidity: 20 to 85% RH 701955, 701956: Approx. 37 (W) × 97 (H) × 30 (D) mm 701955, 701956: Approx. 37 (W) × 97 (H) × 30 (D) mm 701957, 701958: Approx. 35 g (Bridge head only) 701957, 701958: Approx. 100 g (Bridge head only)
Maximum allowable voltage be Input impedance Bridge Head (701955, 701956, Bridge resistance Applicable gauge methods Operating conditions External dimensions Weight Power Supply (701934) Compatible Probes No. of Power Receptacles Output Voltage	250 Vrms (CAT II) h (1 kHz or less) 250 Vrms (CAT II) tween bits 250 Vrms (CAT II) Approx. 100 kΩ 701957, 701958) Model 701955, 701957 : 120 Ω Model 701955, 701958 : 350 Ω Single-gauge, Single-gauge three-wire, Adjacent-side two-gauge, Opposed-side two-gauge, Opposed-side two-gauge, Cpposed-side two-gauge, three-wire, Four-gauge Temperature: 5 to 40°C Humidity: 20 to 85% RH 701955, 701956: Approx. 37 (W) × 97 (H) × 30 (D) mm 701955, 701958: Approx. 35 (g(Hidge head only) 701957, 701958: Approx. 100 g (Bridge head only)
Maximum allowable voltage be Input impedance Bridge Head (701955, 701956, Bridge resistance Applicable gauge methods Operating conditions External dimensions Weight Power Supply (701934) Compatible Probes No. of Power Receptacles Output Voltage Rated Output Current	250 Vrms (CAT II) h (1 kHz or less) 250 Vrms (CAT II) tween bits 250 Vrms (CAT II) Approx. 100 kΩ 701957, 701958) Model 701955, 701957 : 120 Ω Model 701955, 701958 : 350 Ω Single-gauge, Single-gauge three-wire, Adjacent-side two-gauge, Opposed-side two-gauge, Opposed-side two-gauge, Opposed-side two-gauge, Three-wire, Four-gauge Temperature: 5 to 40°C Humidity: 20 to 85% RH 701955, 701956: Approx. 37 (W) × 97 (H) × 30 (D) mm 701955, 701956: Approx. 37 (W) × 97 (H) × 30 (D) mm 701955, 701956: Approx. 35 g (Bridge head only) 701957, 701958: Approx. 100 g (Bridge head only)
Maximum allowable voltage be Input impedance Bridge Head (701955, 701956, Bridge resistance Applicable gauge methods Operating conditions External dimensions Weight Power Supply (701934) Compatible Probes No. of Power Receptacles Output Voltage Rated Output Current	250 Vrms (CAT II) h (1 kHz or less) 250 Vrms (CAT II) tween bits 250 Vrms (CAT II) Approx. 100 kΩ 701957, 701958) Model 701955, 701957 : 120 Ω Model 701955, 701958 : 350 Ω Single-gauge, Single-gauge three-wire, Adjacent-side two-gauge, Opposed-side two-gauge, Opposed-side two-gauge, Cpposed-side two-gauge, three-wire, Four-gauge Temperature: 5 to 40°C Humidity: 20 to 85% RH 701955, 701956: Approx. 37 (W) × 97 (H) × 30 (D) mm 701955, 701958: Approx. 35 (g(Hidge head only) 701957, 701958: Approx. 100 g (Bridge head only)
Maximum allowable voltage be Input impedance Bridge Head (701955, 701956, Bridge resistance Applicable gauge methods Operating conditions External dimensions Weight Power Supply (701934) Compatible Probes No. of Power Receptacles Output Voltage Rated Output Current Rated Supply Voltage	250 Vrms (CAT II) h (1 kHz or less) 250 Vrms (CAT II) thveen bits 250 Vrms (CAT II) Approx. 100 kΩ 701957, 701958) Model 701955, 701957 : 120 Ω Model 701955, 701958 : 350 Ω Single-gauge, Single-gauge three-wire, Adjacent-side two- gauge, Opposed-side two-gauge, Opposed-side two-gauge three-wire, Four-gauge Temperature: 5 to 40°C Humidity: 20 to 85% RH 701955, 701956: Approx. 37 (W) × 97 (H) × 30 (D) mm 701957, 701958: Approx. 50 (W) × 101 (H) × 29 (D) mm 701955, 701956: Approx. 85 g (Bridge head only) 701955, 701958: Approx. 100 g (Bridge head only) 701957, 701958: Approx. 100 g (Bridge head only) 701957, 701958: Approx. 100 g (Bridge head only) 701955, 701958: Approx. 100 g (Bridge head only) 701957, 701918, Differential probe: 701920, 701921, 701922, 701978, 70197 4 ±(12 ± 0.5) V ±2.5 A (total value for each output) 100 to 240 VAC (actual power supply voltage may fluctuate within ±10% of
Maximum allowable voltage be Input impedance Bridge Head (701955, 701956, Bridge resistance Applicable gauge methods Operating conditions External dimensions Weight Power Supply (701934) Compatible Probes No. of Power Receptacles Dutput Voltage Rated Output Current Rated Supply Voltage	250 Vrms (CAT II) h (1 kHz or less) 250 Vrms (CAT II) tween bits 250 Vrms (CAT II) Approx. 100 kΩ 701957, 701958 Model 701955, 701957 : 120 Ω Model 701956, 701958 : 350 Ω Single-gauge, Single-gauge three-wire, Adjacent-side two- gauge, Opposed-side two-gauge, Opposed-side two-gauge three-wire, Four-gauge Temperature: 5 to 40°C Humidity: 20 to 85% RH 701955, 701956: Approx. 37 (W) × 97 (H) × 30 (D) mm 701957, 701958: Approx. 50 (W) × 101 (H) × 29 (D) mm 701955, 701958: Approx. 50 (W) × 101 (H) × 29 (D) mm 701955, 701958: Approx. 100 g (Bridge head only) 701957, 701958;
Maximum allowable voltage be Input impedance Bridge Head (701955, 701956, Bridge resistance Applicable gauge methods Operating conditions External dimensions Weight Power Supply (701934) Compatible Probes No. of Power Receptacles Output Voltage Rated Output Current Rated Supply Voltage Ripple Voltage Rated Power	250 Vrms (CAT II) h (1 kHz or less) 250 Vrms (CAT II) tween bits 250 Vrms (CAT II) Approx. 100 kΩ 701957, 701958) Model 701955, 701957 : 120 Ω Model 701956, 701958 : 350 Ω Single-gauge, Single-gauge three-wire, Adjacent-side two- gauge, Opposed-side two-gauge, Opposed-side two-gauge three-wire, Four-gauge Temperature: 5 to 40°C Humidity: 20 to 85% RH 701955, 701958: Approx. 37 (W) × 97 (H) × 30 (D) mm 701957, 701958: Approx. 37 (W) × 97 (H) × 30 (D) mm 701957, 701958: Approx. 35 g (Bridge head only) 701955, 701958: Approx. 100 g (Bridge head only) 701957, 701958: Approx. 100 g (Bridge head only) 701957, 701931, 701932, 701933, 701917, 701918 Differential probe: 701920, 701921, 701922, 701978, 70197 4 ±(12 ± 0.5) V ±2.5 A (total value for each output) 100 to 240 VAC (actual power supply voltage may fluctuate within ±10% of the rating) 50 mVp-p
Maximum allowable voltage be Input impedance Bridge Head (701955, 701956, Bridge resistance Applicable gauge methods Operating conditions External dimensions Weight Power Supply (701934) Compatible Probes No. of Power Receptacles Output Voltage Rated Output Current Rated Supply Voltage Ripple Voltage Rated Power External Dimensions	250 Vrms (CAT II) h (1 kHz or less) 250 Vrms (CAT II) stween bits 250 Vrms (CAT II) Approx. 100 kΩ 701957, 701958) Model 701955, 701957 : 120 Ω Model 701956, 701958 : 350 Ω Single-gauge, Single-gauge three-wire, Adjacent-side two- gauge, Opposed-side two-gauge, Opposed-side two-gauge three-wire, Four-gauge Temperature: 5 to 40°C Humidity: 20 to 85% RH 701955, 701956: Approx. 37 (W) × 97 (H) × 30 (D) mm 701957, 701958: Approx. 50 (W) × 101 (H) × 29 (D) mm 701955, 701956: Approx. 85 g (Bridge head only) 701957, 701958: Approx. 100 g (Bridge head only) 701955, 701958: Approx. 100 g (Bridge head only) 701957, 701958: Approx. 100 g (Bridge head only) 701950, 701931, 701932, 701933, 701917, 701918 Differential probe: 701920, 701921, 701922, 701978, 70197 4 ±(12 ± 0.5) V ±2.5 A (total value for each output) 100 to 240 VAC (actual power supply voltage may fluctuate within ±10% of the rating) 50 mVp-p 190 VA
Maximum allowable voltage be Input impedance Bridge Head (701955, 701956, Bridge resistance Applicable gauge methods Operating conditions External dimensions Weight Power Supply (701934) Compatible Probes No. of Power Receptacles Output Voltage Rated Output Current Rated Supply Voltage Rated Supply Voltage Rated Power External Dimensions Weight	250 Vrms (CAT II) h (1 kHz or less) 250 Vrms (CAT II) stween bits 250 Vrms (CAT II) Approx. 100 kΩ 701957, 701958) Model 701955, 701957 : 120 Ω Model 701956, 701958 : 350 Ω Single-gauge, Single-gauge three-wire, Adjacent-side two- gauge, Opposed-side two-gauge, Opposed-side two-gauge three-wire, Four-gauge Temperature: 5 to 40°C Humidity: 20 to 85% RH 701955, 701956: Approx. 37 (W) × 97 (H) × 30 (D) mm 701957, 701958: Approx. 50 (W) × 101 (H) × 29 (D) mm 701955, 701956: Approx. 85 g (Bridge head only) 701957, 701958: Approx. 100 g (Bridge head only) 701955, 701956: Approx. 701932, 701933, 701917, 701918 Differential probe: 701930, 701931, 701932, 701933, 701917, 701918 Differential probe: 701920, 701921, 701922, 701978, 70197 4 ±(12 ± 0.5) V ±2.5 A (total value for each output) 100 to 240 VAC (actual power supply voltage may fluctuate within ±10% of the rating) 50 mVp-p 190 VA maximum (at the rated output current) 80 (W) × 119 (H) × 200 (D) mm
Maximum allowable voltage be Input impedance Bridge Head (701955, 701956, Bridge resistance Applicable gauge methods Operating conditions External dimensions Weight Power Supply (701934) Compatible Probes No. of Power Receptacles Output Voltage Rated Output Current Rated Supply Voltage Rated Supply Voltage Rated Power External Dimensions Weight Conversion Cable (701905)	250 Vrms (CAT II) h (1 kHz or less) 250 Vrms (CAT II) tween bits 250 Vrms (CAT II) Approx. 100 kΩ 701957, 701958) Model 701955, 701957 : 120 Ω Model 701956, 701958 : 350 Ω Single-gauge, Single-gauge three-wire, Adjacent-side two-gauge, Opposed-side two-gauge, Opposed-side two-gauge, Cpposed-side two-gauge, three-wire, Four-gauge Temperature: 5 to 40°C Humidity: 20 to 85% RH 701955, 701956: Approx. 37 (W) × 97 (H) × 30 (D) mm 701955, 701958: Approx. 50 (W) × 101 (H) × 29 (D) mm 701957, 701958: Approx. 100 g (Bridge head only) 701957, 701958; Approx. 100 g (Bridge head only) 701957, 701958; Approx. 100 g (Bridge head only) 701957, 701958; Approx, 100 g (Bridge head o
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Maximum allowable voltage be Input impedance Bridge Head (701955, 701956, Bridge resistance Applicable gauge methods Operating conditions External dimensions Weight Power Supply (701934) Compatible Probes No. of Power Receptacles Output Voltage Rated Output Current Rated Supply Voltage Rated Power External Dimensions Weight Conversion Cable (701905) Maximum input voltage Operating temperature	250 Vrms (CAT II) h (1 kHz or less) 250 Vrms (CAT II) tween bits 250 Vrms (CAT II) Approx. 100 kΩ 701957, 701958) Model 701955, 701957 : 120 Ω Model 701956, 701958 : 350 Ω Single-gauge, Single-gauge three-wire, Adjacent-side two-gauge, Opposed-side two-gauge, Opposed-side two-gauge, Cpposed-side two-gauge, three-wire, Four-gauge Temperature: 5 to 40°C Humidity: 20 to 85% RH 701955, 701956: Approx. 37 (W) × 97 (H) × 30 (D) mm 701955, 701958: Approx. 35 (Bridge head only) 701957, 701958: Approx. 100 g (Bridge head only) 701957, 701958; Approx. 102 g (Bridge head only) 701957, 701958; Approx. 100 g (Bridge head only) 70



Module and accessory combinations



Using the Strain Modules (701270, 701271)



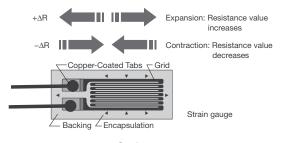


Strain Module (NDIS) (Model: 701270) Strain Module (DSUB, Shunt-CAL) (Model: 701271)

There are two types of modules depending on the difference in the input connector type and whether or not shunt calibration is supported. These modules support not only strain gauges, but also strain gauge type sensors.

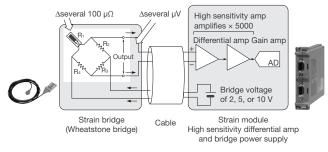
Strain gauge

A strain gauge is a sensor that detects mechanical stress (strain). It works on the principle that the resistance value of a metal foil changes as it expands and contracts. The strain gauge uses a specialized sensor that is affixed in the direction of expansion and contraction with an instant adhesive.





The strain gauge's rate of change in resistance is very small. For instance, when using a 120 Ω strain gauge, the change in resistance corresponding to a strain of 1000 μSTR is 0.24 Ω . Relative to a strain of 1 μSTR , the resistance change is only 0.00024 Ω . Converting such minute resistance changes to voltage requires a Wheatstone bridge.



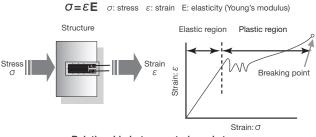
Strain gauge and measurement circuit

Furthermore, because the bridge output is as small as a few micro volts, the input must be amplified inside the strain module using a differential and high gain amp.

You can select a bridge voltage (DC) of 2, 5, or 10 V. The higher the input voltage the higher the output voltage. Therefore, low noise measurements are possible, but only a bridge resistance of 350 ohm is supported at 5 or 10 V.

Measuring with a strain module

You can determine structural durability (elasticity) by measuring the strain.

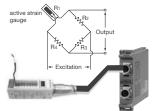


Relationship between strain and stress

Stress is calculated using the relationship of elasticity (Young's modulus), which depends on structure's material, and the durability of the structure.

A strain gauge type sensor uses built-in strain gauge to measure stresses that occur with changes in various physical quantities (load, pressure, displacement, vibration, torque, etc.) based on the above principle. It then converts those to the original physical quantities and outputs them.

Connecting to a strain module



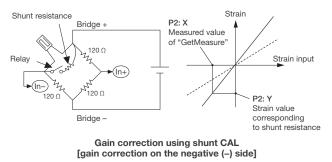


For strain measurements with a strain gauge, use the accessory bridge head.

Strain gauge type sensors are connected directly.

Shunt calibration

Shunt calibration (shunt CAL) means correcting the gain in strain measurements by inserting a known resistance (shunt resistance) in parallel with the strain gauge. Correction can be made without introducing a load, and while not perfectly accurate the correction can include the gauge wiring cables.



The model 701271 Strain Module (DSUB, shunt CAL) supports shunt calibration. A bridge head that supports shunt CAL (model 701957 or 701958) is required to execute shunt CAL.

Using the Acceleration Module (701275)



Acceleration/Voltage Module (with Anti-Aliasing Filter) (Model: 701275)

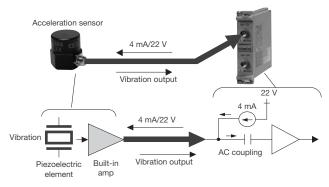
This module will accept direct input from a built-in amp type acceleration sensor to measure acceleration. You can also connect a charge output type acceleration sensor via a commercially available charge converter. Additionally, the module functions as a voltage module to support common voltage measurements, and an effective anti-aliasing filter is built in for FFT analysis.

Built-in amp type acceleration sensors

Built-in amp type acceleration sensors use a voltage (piezoelectric) method, and have a built in piezoelectric element that emits a charge from the area of distortion when it encounters mechanical stress. When vibration occurs, a charge is generated on both ends of the element. Vibration is measured by measuring the voltage proportional to the generated charge.

DC power (4 mA/22 V) is supplied from the module to the sensor, and the vibration detected by the sensor is fed back to the module as AC output. The DC component is cut from the vibration output to isolate the AC component which is then amplified.

The model 701275 Acceleration/Voltage Module supports built-in amp type acceleration sensors. No charge amp is required, allowing sensors to be connected directly. It has low impedance, thus offering anti-noise characteristics.

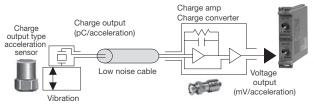


Connecting a built-in amp type acceleration sensor

The 701275 Acceleration/Voltage Module can connect to any built-in amp type acceleration sensor that supports a constant drive current of 4 mA and drive voltage of 22 V. Please check the sensor's spec sheet to ensure you are using one that meets the constant drive current and voltage (range) requirement of 4 mA and 22 V. They are available from the following manufacturers. Kistler: Piezotron PCB: ICP Endevco: isotron2

Charge output type acceleration sensors

When you need to perform measurements by connecting a charge output type acceleration sensor, you can input signals to the 701275 Acceleration/Voltage module through a commercially available charge converter or charge amp.



Connecting a charge output type acceleration sensor

The electric charge proportional to acceleration (pC/acceleration) is conveyed to the charge amp via a low noise cable. The charge amp converts charge to voltage (mV/acceleration). Because impedance is high and charge is small, the signal is susceptible to noise and caution should be exercised. The drive current/voltage needed for connecting a built-in amp type acceleration sensor is not required with charge output type acceleration sensors.

When using the model 701275 Acceleration/Voltage Module to measure acceleration, enter output units (sensitivity, mV/unit) that are appropriate for the acceleration sensor being used. The output units are included on the sensor's spec sheet.

When connecting a built-in amp type acceleration sensor or charge output type acceleration sensor via charge converter, turn ON the bias output (constant drive current).

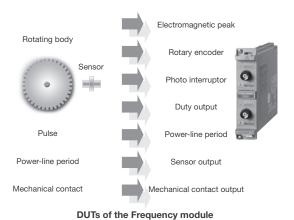
Using the Frequency Module (720281)



Frequency Module (Model: 720281)

This module incorporates all the functions and performance required for measuring rotating bodies (pulses). It performs measurement of 9 different items, and reads in measured values directly.

With isolated input, its measurement range is 0.01 Hz to 500 kHz. Measured values are updated at high speed (1 $\mu s/1$ MHz) for real time confirmation.



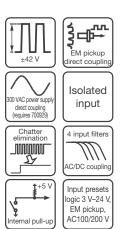
Frequency module test items

Test item	Real-time calculation	Measurement range ^{*1}	Measurement
Frequency (Hz)	Frequency (Hz) = $\frac{1}{\text{Tw (s)}}$	0.01 Hz to 500 KHz	
Period (s)	Period (s) = Tw (s)	2 µs to 50 s	
Rpm	$Rpm = \frac{\text{freq. (Hz)}}{\text{pulses per revolution (Nr)}} \times 60$	0.01 rpm to 100000 rpm	r (Hz)
Rps	$Rps = \frac{freq (Hz)}{pulses per revolution (Nr)}$	0.001 rps to 2000 rps	Pulse per revolution (Nr)
Duty (%)	$Duty (\%) = \frac{Thigh (s)}{Tw (s)} \text{ or } \frac{Tlow (s)}{Tw (s)}$	0% to 100%	Thigh (i)
Pulse width	Pulse width (s) = Thigh (s) or Tlow (s)	1 µs to 50 s	
Power Supply Freq. (Hz)	Power supply freq. (Hz) = $\frac{1}{\text{Tw}(s)}$ at the 50/60 Hz setting, 0.01 Hz resolution	(50 Hz, 60 Hz, 400 Hz) ±20 Hz	Tw(s)
Pulse Integration (Distance/Quantity of flow)	Distance = N (count) × distance per pulse ℓ *Distance ℓ and units are user-definable.	up to 2×10^9 count	
Velocity (km/h, mph)	$\begin{split} & \text{Velocity (km/h)} \\ &= \frac{\text{distance per pulse } \ell(\text{km})}{\text{Tw (s)}} \times 3600 \\ & \text{Velocity (m/s)} \\ &= \frac{\text{distance per pulse } \ell(\text{m})}{\text{Tw (s)}} \\ & \text{``lunits are user-definable} \\ & (\text{angular velocity and other units)} \end{split}$	$F = \left(\frac{1}{Tw}\right)$ $= 0.01 \text{ Hz to 200 kHz}$	Distance pr

Unlike general FV converters, the model 720281 Frequency Module does not require scale conversion when acquiring measurement items such as the ones in figure 1 because it can read in values directly. It not only displays data as waveforms, but enables cursor and waveform parameter measurement of those waveforms.

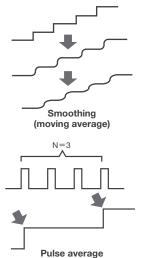
Input signals

A variety of signal types can be input, such as encoder pulse input of up to \pm 42 V, powered electromagnetic pickup direct input (1:1), and AC power of up to 300 V (when using a 10:1 probe). The isolation function, amplifier, and filters are all equivalent to those in a normal voltage module, therefore it supports a broad range of voltage (6 ranges) and input formats. Precise chattering elimination from 1 ms to 1 s is supported. The unit comes configured with menu presets for logic input (3 V to 24 V), electromagnetic pickup, AC power, and other inputs.



Real-time digital filtering

Smoothing filter (Moving average) Smooth stair-step shaped waveforms. Updating occurs every 1 μ s, giving a high speed averaging effect. Filters are set at 0.1 ms to 1 s (up to the 25000th order). Filters reduce jitter in observed waveforms, and increases resolution.



length of time

(2) Stop

prediction

0

(1) Deceleration

prediction

 $f = 1/\Delta t$

Deceleration/stop prediction

Pulse average

Useful for determining the average value per rotation, or determining the number of rotations when a gear is missing teeth. Output is averaged every specified number of pulses (between 1 and 4096 pulses).

Supports braking applications

By predicting the deceleration curve and stop point, the module automatically compensates for the lack of information on encoder pulses which occur during deceleration. Start Brake After fixed

fo

0

ппп

Deceleration Prediction (1) Automatically calculates and outputs a deceleration curve based on the interval of the



last input pulse.

If no pulses are inputted for a period of time, a stop is inferred, and output is set to

0. Up to 10 steps can be specified.

You can detect actions from pulse output stop (break, etc.) to the actual stop, therefore it is effective for applications involving pulse measurement associated with deceleration and stopping.

Using the 16 CH Voltage Input Module (720220)



16 CH Voltage Input Module (Model: 720220)

This is a multichannel voltage module capable of measuring 16 channels (subchannels) of DC voltage on a single unit. Scan method measurements are possible by using a removable spring-type terminal block (removable in 8 channel sections) at the input. The input section uses Weidmueller B2L 3.5/16LH clamp connectors.

The maximum sampling rates are 200 kS/s (for 1 CH) and 10 kS/s (for 16 CH simultaneously). The minimum voltage input range is 200 mV/div, and the maximum input voltage is 42 V (direct input, 1 kHz or less).

Input terminal blocks are isolated from ground. There is no isolation between channels within the input terminal block.

Setting subchannels

On each of the 16 channels (subchannels) in the module, you can individually set the range and other input conditions, position, zoom, and other display conditions.

	2	aii_i	: 2.0000	V/div	9k\$/s		Screekide		10k 100k	2025,V44/07 23031134 Points "Normal S/s 10ms/div
									e	Setup 🕄
					Bend Width	DIV/ Scale				Setup
			DC	2V	Full	DIM	0.000	0.00div		
	-	CHI_1			Full	DIM	0.000V	0.00div		
	-	CH1_2	DC	2V	Full	DM	0.0007	0.00div		
	•	сні, з			Full	DIM	0.0007	0.00div		
	-	CHI_4			Full	DIM	0.000v	0.00.5+		
		Сн1_5	DC		Full	DIM	0.000v	0.00div		
	•	сні_б			Full	DIM	0.000V	0.00div		
	•	СН1_7	DC	2V	Full	DM	0.000v	0.00div		fa Copy to
	•				Full	CIV.	0.000V	0, 00div		
		СНІ_9			Full	DM	0.000V	0.00div		
Stor	rod 0	Office 1	000 history		Gr			Auto 2	ter	

Channel setting screen (SL2000)

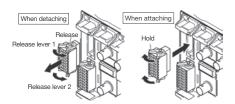
Connecting wires to terminal blocks

The following electrical wire is recommended.

 $0.20\ mm^2$ to $1.00\ mm^2$ (two solid wires or thin stranded wire). AWG size: 24-18

Strip approx. 7 mm of the insulation from the end of the wire and insert the end into a wire inlet of a terminal block.

A terminal block can be detached from the module as shown right; wires can be easily installed.

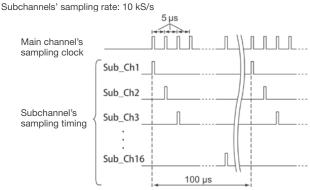


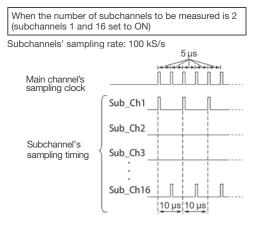
Number of subchannels to be used, sampling rate, and record length

Subchannels under measurement (those set to ON) are sampled in order. As noted above, the subchannel sampling rate changes depending on the main channel's sampling rate and the number of subchannels to be used. The figure below shows the difference in sampling rate when all subchannels (16 CH) are set to ON and when only two subchannels (subchannels 1 and 16) are set to ON.

Main channel's sampling rate: 200 kS/s

When the number of subchannels to be measured is 16 (all subchannels set to ON)





For example, if the main channel's sampling rate is 200 kS/s, the sampling clock is 5 μ s period. The subchannels are sampled at this sampling clock in turn. Therefore, the subchannel's sampling timing is as shown in the figure above. Because scanning all required channel's takes time in proportion to the number of subchannels to be used (set to ON), the greater the number of subchannels to be used, the lower the sampling rate for one subchannel.

In the example shown above, the sampling rate is 10 kS/s (5 μ s × 16 CH+20 μ s) when using 16 CH, while it is 100 kS/s (5 μ s × 2) when using 2 CH.

The sampling rate that is displayed on the main unit screen is the main channel's sampling rate.

The record length of each subchannel changes depending on the set record length and the number of subchannels to be used and there is a relationship between them as follows:

Record length of set record length/ each subchannel \leq number of subchannels to be used

Using the 16 CH Temperature/Voltage Input Module (720221)



External Scanner Box (Model: 701953) 16 CH Temperature/Voltage Input Module (Model: 720221)

This is a multichannel input module capable of measuring up to 16 channels (subchannel's DC voltage or temperature measured by TC) on a single unit. It consists of the module body (model: 720221) and external scanner box (model: 701953), and both units are required to make measurement. Wires for voltage measurement or a thermocouple for temperature measurement are connected to terminal blocks (screwed type) of the external scanner box. The input section is isolated between the ground and terminal blocks and between subchannels. For the voltage measurement range and temperature measurement range (available thermocouple types and accuracy), see the module specifications described on page 7. Both the maximum input voltage and maximum rated voltage to earth are 42 V (AC + DCpeak, 1 kHz or less).

Scanning method, Data updating period, and Bandwidth limit

Alternatives	Setting ①	Setting ②	Setting ③	Setting ④
Data updating period (selectable)	100 ms	300 ms	1 s	3 s
Bandwidth limit (-3 dB) (unselectable, automatic setting)	600 Hz	200 Hz	50 Hz	10 Hz

The data updating period can be selected from among the following settings ① to ④. According to the selected data updating period, the predetermined bandwidth limit is imposed as per the following combinations.

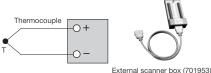
The scan data updating period for one scan (maximum 16 CH) can be selected from among four types of alternatives (① to ④) shown in the table above. The selected updating period is independent of the number of subchannels to be used and is consistent. Thus, if setting ① is selected, a maximum of 16 points (CH) can be measured every 100 ms. The updating rate is also independent of the measurement object and is common to both voltage and temperature. The predetermined bandwidth limit is automatically enabled according to the selected scan data updating period. The combinations of the updating period and bandwidth limit are as shown in the table above (① to ④).

If a signal to be measured contains significant noise, lower the data updating period. This allows the bandwidth limit to be enabled at a lower cut-off frequency, improving the noise reduction effect.

Reference junction compensation (RJC)

The RJC circuit is built into the external scanner box. The RJC allows switching between internal and external equipment. For details of the RJC compensation accuracy, see the module specifications described on page 7 of this bulletin.

Moreover, the external scanner box also incorporates a burnout circuit for detecting a wire break and this burnout detection is always available even during measurement. The burnout detection can be set to ON/OFF for each subchannel.



Reference junction compensation

Noise reduction performance

This module adopts the $\Delta\Sigma$ -type A/D conversion method. Using the digital filtering function based on oversampling, it reduces the noise effect and ensures accurate measurement.

The oversampling performs sampling (A/D conversion) at a higher frequency by comparison with input signal frequency. Since the module performs a larger number of samplings at a faster period to take the average of them, the resolution of measured values is improved, enabling a measured value closer to the true value to be obtained. At the same time, it provides a noise component reduction (averaging) effect if a signal contains noise. Moreover, because the sampling resolution is high, input signal waveforms can be reproduced more faithfully.



ΔΣ-type A/D conversion block diagram

In general temperature scanner modules, the filtering performance tends to be sacrificed (weakened) to improve the data updating period, and therefore high-frequency noise cannot be reduced sufficiently in some cases. The module also offers

			50.0C	0.00	ON	ON
	CH6_1		50.0C	0.00	ON	ON
	C16,2		1300.0C	- 200.0C		
	06,3		500.0C	0.00		
	CH6_4		100.0C	18.0C	ON	ON
	06,5		1300.00	- 200.0C	ON	ON
	CHEE		200.0C	- 200.0C	ON	ON

Channel setting screen (DL950)

excellent common mode reduction performance as well as the ability to scan 16 points (CH) of data at an updating period as high as 100 ms.

Comparison with the 16 CH Voltage Input Module (720220)

The features of the two types of 16 CH input modules (models: 720220 and 720221) are compared in the table below. The hatched areas show the features of the respective modules. You can select an appropriate module according to the measurement application.

	16 CH Voltage Module (720220)	16 CH Voltage/Temp. Module (720221)
Channels	16	16
Input	DC V	DC V, temperature
Voltage 200 mV/div to 2 V/div (1-2-5 s		1 mV/div to 2 V/div (1-2-5 steps)
Voltage accuracy	±(0.3% of 10 div)	±(0.15% of 10 div)
Updating period	5 µs maximum (when only one subchannel is used)	100 ms, 300 ms, 1 s, or 3 s (user selectable) (Independent of the number of subchannels to be used)
Maximum rated voltage to earth	42 V (DC + ACpeak) (CAT II, 30 Vrms)	42 V (DC + ACpeak) (CAT II, 30 Vrms)
Isolation between channels	No	Yes
A/D conversion resolution	16 bit (2400 LSB/div)	16 bit (2400 LSB/div)

Using the Logic Input Module (720230)



Probe model	Number of inputs	Isolated/ non-isolated	Maximum input voltage	Threshold level	Response time
702911/702912	8	Non-isolated	±35 V	Approx. 1.4 V	3 µs or less
700986	8	Non-isolated	30 Vrms	Approx. 1.4 V	1 µs or less
700987	8	Isolated	250 Vrms	6 VDC or 50 VAC	1 ms or less (DC), 20 ms or less (AC)

Input logic signals can also be displayed for numeric monitoring in either binary or hexadecimal format.

Moreover, you can put the cursor on the measured logic waveform to read bit data.

Logic Input Module (Model: 720230)

Input logic signals can be displayed as waveforms at a sampling resolution of up to 10 MS/s. Each port can measure 8 bit, and 2 ports of input are available on each module. Thus, a single module can observe 16 bit logic signals. You can turn the display

0	OIII : Legic	1045/s		104 P 10065	bists "Norval /s Hos/div
			Ø		
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		CONT1	5m -		
	ud 🗸	CONT2			
	B.4	614	orr 🗸		
	niš 🖌	06			
	nei 🖌	Bi6			
	BR7 🗸	617	orr 👻		
				08	
	0.01	вø			
	All Bits On			cett1	
	All Bits Off			CH12	
topped			1		

Logic display setting screen (DL950)

of individual bits ON/OFF, and assign each bit its own unique label. In all, you can input and display up to 128 bit of logic signals by installing up to eight modules in a single DL950/DL850E/DL850EV for example.

You can select from four different types of logic probe to best fit the input signal. (For details on logic probes, see page 11.) The input format, maximum input voltage, threshold level, and other settings depend on the logic probe being used; please refer to the specifications of your logic probe. The following logic probes can be used.



Logic probe (TTL level/contact input) 1 m: 702911/3 m: 702912



High-speed logic probe 700986



Isolation logic probe 700987

Using the 4 CH 1MS/s / 10MS/s 16 Bit Isolation Module (720254 and 720256)





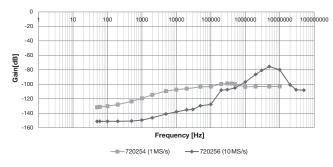
4 CH 1 MS/s 16 Bit Isolation Module (Model: 720254)

4 CH 10 MS/s 16Bit Isolation Module (Model: 720256)

This module has four isolated BNC input channels. Installing eight of this module in a DL950 makes a 32-CH stand-alone measurement system. This module can be used to perform isolated high-voltage and multi-channel (up to 32) measurements and recording. The A/D conversion resolution is 16 bit (2400 LSB/div), and the maximum input voltage is 600 V (DC + ACpeak, when using a 700929 or 701947 probe). The maximum rated voltage to earth is 300 Vrms (CAT II). The 720256 can measure at sample rates up to 10 MS/s, and the 720254 can measure at sample rates up to 1 MS/s.

Another feature of this module is the excellent noise immunity. The common mode rejection ratio (CMRR) is more than 80 dB (50/60 Hz) (typical).

The following graph shows a typical CMRR performance.



In general, a high number of isolated channels and high resolution are required to record inverter signals that are 300 Vrms or greater for long periods of time. In transportation applications, a high number of isolated channels are also essential to measure the advanced control signals and sensor output signals generated by the ECU (Electronic Control Unit). An increase in the number of measurement systems in power plants also requires more channels in one instrument. Troubleshooting is efficient by measuring multiple signals simultaneously in one measuring instrument.

Note

When using this module with the DL850E/DL850EV, the sample rate will be half or less than half of that of a 2 CH voltage input module (e.g., 720250) when the recording length setting is the same.

When an external clock signal is applied, the sample rate will also be half or less than half of the sample rate of the external clock. Please pay particular attention when using only the 4 CH 1 MS/s, 16 bit isolation module (s) to sample using an external pulse signal such as that of a rotary encoder.

Sampling is simultaneous on four channels. Refer to the following table for details.

Relationship between the main channel sample rate and the 4 CH 1 MS/s, 16 bit isolation module sample rate (DL850E/DL850EV only)

Main channel sample rate (S/s)	Sample rate of the 4 CH 1 MS/s, 16 bit isolation module (720254) (S/s)
100 M	1 M
50 M	1 M
20 M	1 M
10 M	1 M
5 M	1 M
2 M	1 M
1 M	500 k
500 k	100 k
200 k	100 k
100 k	50 k
50 k	10 k
20 k	10 k
10 k	5 k
5 k	1 k
2 k	1 k
1 k	500
500	100
200	100
100	50
50	10
20	10
10	5
5	1

Using the CAN FD/LIN Monitor Module (720245) and SENT Monitor Module (720243)





CAN FD/LIN Monitor Module (Model: 720245)

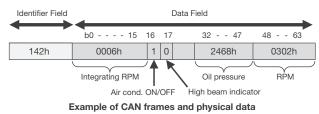
SENT Monitor Module (Model: 720243)

These modules will interpret vehicle installed communication protocols, monitor the communication data, and display the time series trend waveforms. They are connected as CAN/CAN FD or LIN bus nodes and can read the data frames of each protocol communicating on the bus or read the signal values transmitted between a sensor to a controller on SENT (Single Edge Nibble Transmission).

By combining them with other input modules, they can simultaneously measure the communication data in a vehicle, the voltage and temperature, the sensor signals and other changes in analog data over time, as well as ECU (Electronic Control Unit) control logic signals. These data can be displayed as waveforms or saved as files. All related data in the system can be interpreted, thus enabling the evaluation of the overall vehicle installed system. The CAN FD/LIN Monitor Module (720245) is equipped with two CAN/CAN FD and LIN input ports, enabling a single module to be connected to two CAN/CAN FD or LIN network systems. CAN/ CAN FD and LIN can be switched in a single module. This module supports the SAE J1939 communication protocol. The SENT Monitor Module (720243) is equipped with two input ports, enabling simultaneous monitoring of up to 11 data trends.

For the protocols that each module supports, see the respective specifications in this manual.

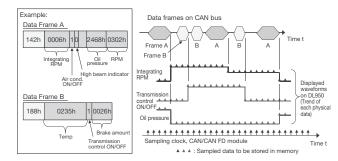
CAN data monitoring method (example)



The following is an example of how CAN data can be monitored. With CAN data frames, multiple data (physical data) are carried and received under a single ID. These modules acquire (extract) identifiers for data fields defined as channel settings (for example, "oil pressure" or "RPM"), re-sample the data, and then convert it to time series data.

Data sections can be specified on up to 60 signals per port. That is, a total of up to 120 signals for a single CAN FD/LIN Monitor Module (720245). Both standard (11 bit) and extended (29 bit) message IDs can be specified, and arbitrary locations and bit lengths (up to 32 bits) can also be specified for extraction.

The relationship between sampled data and displayed waveforms is as shown in the figure below (an example of CAN).

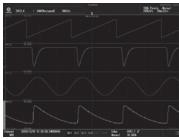


Relationship between sampling data and displayed waveforms, an example

The following shows an example of the monitor screen.

Sampled data (trend waveform data) can be saved

to files. When monitoring LIN bus data using the CAN FD/LIN Monitor Module (720245) or SENT using the 720243 module, the same principle applies.



Example monitor screen (DL950)

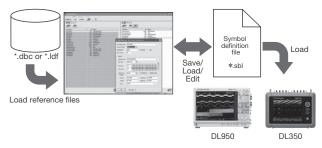
Using vehicle installed network definition files (CAN DBC, LIN LDF)

Data to be monitored (acquired) can not only be specified in digital codes (hexadecimal or numeric), but can also be loaded from a network definition file (CAN DBC or LIN LDF).

CAN DBC: Vector Informatik's CANdb database file (.dbc format)

LIN LDF: LIN Description file, complying with the LIN Configuration Language Specification

Using Yokogawa's free Windows PC software, "Symbol Editor", you can convert these definition files to our proprietary symbol definition file (.sbl format) and import that file to the main unit.



Using a vehicle-installed network definition file

Outputting frame data (only CAN/CAN FD data)

A single specified (defined) data frame or remote frame can be output (manually, at a desired timing) from the CAN/CAN FD port of the 720245.

Probes, cables, and converters*8

701947 100:1 Probe (for isolated BNC input) 0000 V (DC + ACpeak) CAT II, 1.5 m 700902 10:1 Probe (for isolated BNC input) 1000 V (DC + ACpeak) CAT II, 1.5 m 701901 1:1 Safety BNC adapter lead 1000 V (DC + ACpeak) CAT II, 1.5 m 701901 1:1 Safety BNC adapter lead 1000 Vrms CAT II, 600 Vrms CAT III 701904 1:1 Safety Adapter Lead 1000 Vrms CAT II, 600 Vrms CAT III 701904 1:1 Safety Colphin (type) 1000 Vrms CAT III, 1 set each of red and black 701904 1:1 Safety Colphin (type) 1000 Vrms CAT III, 1 set each of red and black 758928 Pinchers tip (Hook type) 1000 Vrms CAT III, 1 set each of red and black 758929 Alligator clip adaptor set (Rated voltage 1000 V) 300 Vrms CAT II, 1 set each of red and black 758921 Fork terminal adapter set 1000 Vrms CAT II, 1 set each of red and black 701940 Passive probe? Non-isolated 42 V or less, 1 m 366926 1:1 Banan-alligator cable Non-isolated 42 V or less, 1 m 366926 1:1 Banan-alligator cable Non-isolated 42 V or less, 1 m 701917 Current probe ^{3, 4} 0.5, 5, 30 Arms, DC to 100 MHz 701917	Model	Product	Description ¹¹
702902(for isolated BNC input)Operating temp. range: -40 to 85°C, 2.5 m70092910:1 Probe (for isolated BNC input)1000 V (DC + ACpeak) CAT II, 1.5 m7019011:1 Safety BNC adapter lead1000 Vrms CAT II7019041:1 Safety Adapter Lead (in combination with following) 7589281000 Vrms CAT III, 1 set each of red and black7019041:1 Safety Adapter Lead (in combination with following) 7589291000 Vrms CAT III, 1 set each of red and black701954Large alligator-clip (Bolphin type)1000 Vrms CAT III, 1 set each of red and black758929Alligator clip adaptor set (Rated voltage 1000 V)300 Vrms CAT II, 1 set each of red and black758921Fork terminal adapter set (Rated voltage 300 V)300 Vrms CAT II, 1 set each of red and black701940Passive probe?Non-isolated 600 Vpk (701255) (10:1)3669611:1 BAnc-alligator cableNon-isolated 42 V or less, 1 m3669611:1 Banana-alligator cableNon-isolated 42 V or less, 1.2 m702915Current probe ^{3, 4} 0.5, 5, 30 Arms, DC to 120 MHz701917Current probe ^{3, 4} 30 Arms, DC to 120 MHz701932Current probe ^{3, 4} 30 Arms, DC to 100 MHz701933Current probe ^{3, 4} 500 Arms, DC to 20 MHz701930Current probe ^{3, 4} 500 Arms, DC to 10 MHz701931Current probe ^{3, 4} 500 Arms, DC to 10 MHz701933Current probe ^{3, 4} 500 Arms, DC to 120 MHz701934Probe power supplyLarge current output, external probe power supply (4 outputs)	701947		1000 V (DC + ACpeak) CAT II, 1.5 m
700929 (for isolated BNC input) 1000 V (DC + ACpeak) CAT II, 1.5 m 701901 1:1 Safety BNC adapter lead 1000 Vrms CAT II 701904 1:1 Safety BNC adapter lead 1000 Vrms CAT II, 600 Vrms CAT III 701904 1:1 Safety Adapter Lead (in combination with following) 1000 Vrms CAT III, 1 set each of red and black 701954 Large alligator-clip (Dolphin type) 1000 Vrms CAT III, 1 set each of red and black 758929 Alligator clip adaptor set (Rated voltage 1000 V) 1000 Vrms CAT II, 1 set each of red and black 758921 Fork terminal adapter set (Rated voltage 300 V) 300 Vrms CAT II, 1 set each of red and black 701940 Passive probe ² Non-isolated 600 Vpk (701255) (10:1) 366961 1:1 Banana-alligator cable Non-isolated 42 V or less, 1.2 m 702915 Current probe ^{3, 4} 0.5, 5, 30 Arms, DC to 50 MHz 701913 Current probe ^{3, 4} 30 Arms, DC to 100 MHz 70192 Current probe ^{3, 4} 30 Arms, DC to 100 MHz 701930 Current probe ^{3, 4} 30 Arms, DC to 100 MHz 701931 Current probe ^{3, 4} 500 Arms, DC to 2 MHz 701933 Current probe ^{3, 4} 500 Ar	702902		Operating temp. range: -40 to 85°C, 2.5 m
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366961 1:1 Banana-alligator cable Non-isolated 42 V or less, 1.2 m 702915 Current probe ^{-3, -4} 0.5, 5, 30 Arms, DC to 50 MHz 702916 Current probe ^{-3, -4} 0.5, 5, 30 Arms, DC to 120 MHz 701917 Current probe ^{-3, -4} 5 Arms, DC to 50 MHz 701918 Current probe ^{-3, -4} 5 Arms, DC to 120 MHz 70192 Current probe ^{-3, -4} 30 Arms, DC to 100 MHz 701932 Current probe ^{-3, -4} 30 Arms, DC to 100 MHz 701933 Current probe ^{-3, -4} 30 Arms, DC to 10 MHz 701930 Current probe ^{-3, -4} 500 Arms, DC to 20 MHz 701931 Current probe ^{-3, -4} 500 Arms, DC to 2 MHz 701931 Current probe ^{-3, -4} 500 Arms, 40 Hz to 3.5 kHz 720930 Clamp-on probe AC 200 Arms, 40 Hz to 3.5 kHz 701934 Probe power supply Large current output, external probe power supply (4 outputs) 701977 Differential probe ^{-3, -4} ±1500 V (DC + ACpeak) (For 701255) 701978 Differential probe ^{-3, -4} ±1500 V (DC + ACpeak) (For 701255) 701905 Conversion cable For differential probe <td>701940</td> <td>Passive probe^{*2}</td> <td>Non-isolated 600 Vpk (701255) (10:1)</td>	701940	Passive probe ^{*2}	Non-isolated 600 Vpk (701255) (10:1)
702915 Current probe $^{3, 4}$ 0.5, 5, 30 Arms, DC to 50 MHz 702916 Current probe $^{3, 4}$ 0.5, 5, 30 Arms, DC to 120 MHz 701917 Current probe $^{3, 4}$ 5 Arms, DC to 50 MHz 701918 Current probe $^{3, 4}$ 5 Arms, DC to 120 MHz 701920 Current probe $^{3, 4}$ 30 Arms, DC to 100 MHz 701932 Current probe $^{3, 4}$ 30 Arms, DC to 100 MHz 701933 Current probe $^{3, 4}$ 30 Arms, DC to 10 MHz 701930 Current probe $^{3, 4}$ 500 Arms, DC to 2 MHz 701931 Current probe $^{3, 4}$ 500 Arms, DC to 2 MHz 720930 Clamp-on probe AC 200 Arms, 40 Hz to 3.5 kHz 720931 Clamp-on probe AC 200 Arms, 40 Hz to 3.5 kHz 701934 Probe power supply Large current output, external probe power supply (4 outputs) 701977 Differential probe $^{3, 4}$ 5000 Vrms and 7000 Vpeak or less (For 701255) 701978 Differential probe $^{3, 4}$ ±1500 V (DC + ACpeak) (For 701255) 701905 Conversion cable For differential probe 701955 Bridge head (NDIS, 120 Ω) With 5 m cable 701956 Bridge head (DSUB, 120 Ω) shunt-CAL with 5	366926	1:1 BNC-alligator cable	Non-isolated 42 V or less, 1 m
702916 Current probe ^{3, 4} 0.5, 5, 30 Arms, DC to 120 MHz 701917 Current probe ^{3, 4} 5 Arms, DC to 50 MHz 701918 Current probe ^{3, 4} 5 Arms, DC to 120 MHz 701920 Current probe ^{3, 4} 30 Arms, DC to 100 MHz 701932 Current probe ^{3, 4} 30 Arms, DC to 50 MHz 701933 Current probe ^{3, 4} 30 Arms, DC to 100 MHz 701930 Current probe ^{3, 4} 500 Arms, DC to 20 MHz 701931 Current probe ^{3, 4} 500 Arms, DC to 2 MHz 720930 Clamp-on probe AC 50 Arms, 40 Hz to 3.5 kHz 720931 Clamp-on probe AC 200 Arms, 40 Hz to 3.5 kHz 701934 Probe power supply Large current output, external probe power supply (4 outputs) 701977 Differential probe ^{13, 14} 5000 Vrms and 7000 Vpeak or less (For 701255) 701978 Differential probe ^{13, 14} ±1500 V (DC + ACpeak) (For 701255) 701905 Conversion cable For differential probe 701955 Bridge head (NDIS, 120 Ω) With 5 m cable 701956 Bridge head (DSUB, 120 Ω) shunt-CAL with 5 m cable 701958 Bridge head (DSUB, 350 Ω) shunt-CAL with 5 m cable <	366961	1:1 Banana-alligator cable	Non-isolated 42 V or less, 1.2 m
701917 Current probe ^{3, 4} 5 Arms, DC to 50 MHz 701918 Current probe ^{3, 4} 5 Arms, DC to 120 MHz 701932 Current probe ^{3, 4} 30 Arms, DC to 100 MHz 701933 Current probe ^{3, 4} 30 Arms, DC to 50 MHz 701930 Current probe ^{3, 4} 30 Arms, DC to 100 MHz 701931 Current probe ^{3, 4} 500 Arms, DC to 20 MHz 701931 Current probe ^{3, 4} 500 Arms, DC to 2 MHz 720930 Clamp-on probe AC 50 Arms, 40 Hz to 3.5 kHz 720931 Clamp-on probe AC 200 Arms, 40 Hz to 3.5 kHz 701974 Probe power supply Large current output, external probe power supply (4 outputs) 701977 Differential probe ^{13, 14} 5000 Vrms and 7000 Vpeak or less (For 701255) 701978 Differential probe ^{13, 14} ±1500 V (DC + ACpeak) (For 701255) 701905 Conversion cable For differential probe 701955 Bridge head (NDIS, 120 Ω) With 5 m cable 701956 Bridge head (DSUB, 120 Ω) shunt-CAL with 5 m cable 701958 Bridge head (DSUB, 350 Ω) shunt-CAL with 5 m cable 70195	702915	Current probe*3, *4	0.5, 5, 30 Arms, DC to 50 MHz
701918 Current probe ^{-3, -4} 5 Arms, DC to 120 MHz 701932 Current probe ^{-3, -4} 30 Arms, DC to 100 MHz 701933 Current probe ^{-3, -4} 30 Arms, DC to 50 MHz 701930 Current probe ^{-3, -4} 30 Arms, DC to 100 MHz 701930 Current probe ^{-3, -4} 500 Arms, DC to 20 MHz 701931 Current probe ^{-3, -4} 500 Arms, DC to 2 MHz 720930 Clamp-on probe AC 50 Arms, 40 Hz to 3.5 kHz 720931 Clamp-on probe AC 200 Arms, 40 Hz to 3.5 kHz 701934 Probe power supply Large current output, external probe power supply (4 outputs) 701977 Differential probe ^{-3, -4} 5000 Vrms and 7000 Vpeak or less (For 701255) 701978 Differential probe ^{-3, -4} ±1500 V (DC + ACpeak) (For 701255) 701905 Conversion cable For differential probe 701955 Bridge head (NDIS, 120 Ω) With 5 m cable 701956 Bridge head (DSUB, 120 Ω) shunt-CAL with 5 m cable 701958 Bridge head (DSUB, 350 Ω) shunt-CAL with 5 m cable 701958 Bridge head (DSUB, 350 Ω) shunt-CAL with 5 m cable 758924 Safety BNC	702916	Current probe" ^{3, *4}	0.5, 5, 30 Arms, DC to 120 MHz
Total probe Strange of the probe 701932 Current probe ^{-3, -4} 30 Arms, DC to 100 MHz 701933 Current probe ^{-3, -4} 30 Arms, DC to 50 MHz 701930 Current probe ^{-3, -4} 150 Arms, DC to 10 MHz 701931 Current probe ^{-3, -4} 500 Arms, DC to 2 MHz 720930 Clamp-on probe AC 50 Arms, 40 Hz to 3.5 kHz 720931 Clamp-on probe AC 200 Arms, 40 Hz to 3.5 kHz 701934 Probe power supply Large current output, external probe power supply (4 outputs) 701977 Differential probe ^{-3, -4} 5000 Vrms and 7000 Vpeak or less (For 701255) 701978 Differential probe ^{-3, -4} ±1500 V (DC + ACpeak) (For 701255) 701905 Conversion cable For differential probe 701955 Bridge head (NDIS, 120 Ω) With 5 m cable 701956 Bridge head (DSUB, 120 Ω) shunt-CAL with 5 m cable 701958 Bridge head (DSUB, 350 Ω) shunt-CAL with 5 m cable 701958 Bridge head (DSUB, 350 Ω) shunt-CAL with 5 m cable 701958 Bridge head (DSUB, 350 Ω) shunt-CAL with 5 m cable 701958 Bridge head (DSUB, 350 Ω) shunt-CAL with 5 m cable	701917	Current probe*3, *4	5 Arms, DC to 50 MHz
701933Current probe 3.1430 Arms, DC to 50 MHz701930Current probe 3.14150 Arms, DC to 10 MHz701931Current probe 3.14500 Arms, DC to 2 MHz720930Clamp-on probeAC 50 Arms, 40 Hz to 3.5 kHz720931Clamp-on probeAC 200 Arms, 40 Hz to 3.5 kHz701934Probe power supplyLarge current output, external probe power supply (4 outputs)701977Differential probe 3.145000 Vrms and 7000 Vpeak or less (For 701255)701978Differential probe 3.14±1500 V (DC + ACpeak) (For 701255)701905Conversion cableFor differential probe701955Bridge head (NDIS, 120 Ω)With 5 m cable701957Bridge head (DSUB, 120 Ω)shunt-CAL with 5 m cable701958Bridge head (DSUB, 350 Ω)shunt-CAL with 5 m cable701958Bridge head (DSUB, 350 Ω)shunt-CAL with 5 m cable701958Bridge head (DSUB, 350 Ω)shunt-CAL with 5 m cable758924Safety BNC-banana adapter500 Vrms CAT II	701918	Current probe*3, *4	5 Arms, DC to 120 MHz
701930Current probe150 Arms, DC to 10 MHz701931Current probe 500 Arms, DC to 2 MHz720930Clamp-on probeAC 50 Arms, 40 Hz to 3.5 kHz720931Clamp-on probeAC 200 Arms, 40 Hz to 3.5 kHz701934Probe power supplyLarge current output, external probe power supply (4 outputs)701977Differential probe 5000 Vrms and 7000 Vpeak or less (For 701255)701978Differential probe ± 1500 V (DC + ACpeak) (For 701255)701955Bridge head (NDIS, 120 Ω)With 5 m cable701956Bridge head (DSUB, 120 Ω)with 5 m cable701958Bridge head (DSUB, 350 Ω)shunt-CAL with 5 m cable758924Safety BNC-banana adapter500 Vrms CAT II	701932	Current probe"3, "4	30 Arms, DC to 100 MHz
701931Current probe500 Arms, DC to 2 MHz720930Clamp-on probeAC 50 Arms, 40 Hz to 3.5 kHz720931Clamp-on probeAC 200 Arms, 40 Hz to 3.5 kHz701934Probe power supplyLarge current output, external probe power supply (4 outputs)701977Differential probe 3. '45000 Vrms and 7000 Vpeak or less (For 701255)701978Differential probe 3. '4 $\pm 1500 V (DC + ACpeak) (For 701255)$ 701905Conversion cableFor differential probe701955Bridge head (NDIS, 120 Ω)With 5 m cable701957Bridge head (DSUB, 120 Ω)shurt-CAL with 5 m cable701958Bridge head (DSUB, 350 Ω)shurt-CAL with 5 m cable701958Bridge head (DSUB, 350 Ω)shurt-CAL with 5 m cable758924Safety BNC-banana adapter500 Vrms CAT II	701933	Current probe*3, *4	30 Arms, DC to 50 MHz
720930Clamp-on probeAC 50 Arms, 40 Hz to 3.5 kHz720931Clamp-on probeAC 200 Arms, 40 Hz to 3.5 kHz701934Probe power supplyLarge current output, external probe power supply (4 outputs)701977Differential probe*3.*45000 Vrms and 7000 Vpeak or less (For 701255)701978Differential probe*3.*4 $\pm 1500 V (DC + ACpeak) (For 701255)$ 701905Conversion cableFor differential probe701955Bridge head (NDIS, 120 Ω)With 5 m cable701957Bridge head (DSUB, 120 Ω)with 5 m cable701958Bridge head (DSUB, 120 Ω)shunt-CAL with 5 m cable701958Bridge head (DSUB, 350 Ω)shunt-CAL with 5 m cable758924Safety BNC-banana adapter500 Vrms CAT II	701930	Current probe*3, *4	150 Arms, DC to 10 MHz
720931Clamp-on probeAC 200 Arms, 40 Hz to 3.5 kHz701934Probe power supplyLarge current output, external probe power supply (4 outputs)701977Differential probe*3.*4 5000 Vrms and 7000 Vpeak or less (For 701255)701978Differential probe*3.*4 ± 1500 V (DC + ACpeak) (For 701255)701905Conversion cableFor differential probe701955Bridge head (NDIS, 120 Ω)With 5 m cable701956Bridge head (NDIS, 350 Ω)With 5 m cable701957Bridge head (DSUB, 120 Ω) shunt-CAL with 5 m cable701958Bridge head (DSUB, 350 Ω)shunt-CAL with 5 m cable758924Safety BNC-banana adapter500 Vrms CAT II	701931	Current probe"3, "4	500 Arms, DC to 2 MHz
701934 Probe power supply Large current output, external probe power supply (4 outputs) 701977 Differential probe ^{-3,-4} 5000 Vrms and 7000 Vpeak or less (For 701255) 701978 Differential probe ^{-3,-4} ±1500 V (DC + ACpeak) (For 701255) 701905 Conversion cable For differential probe 701955 Bridge head (NDIS, 120 Ω) With 5 m cable 701956 Bridge head (DSUB, 120 Ω) with 5 m cable 701957 Bridge head (DSUB, 120 Ω) shunt-CAL with 5 m cable 701958 Bridge head (DSUB, 350 Ω) shunt-CAL with 5 m cable 701958 Bridge head (DSUB, 350 Ω) shunt-CAL with 5 m cable 701958 Bridge head (DSUB, 350 Ω) shunt-CAL with 5 m cable 758924 Safety BNC-banana adapter 500 Vrms CAT II	720930	Clamp-on probe	AC 50 Arms, 40 Hz to 3.5 kHz
701934 Probe power supply supply (4 outputs) 701977 Differential probe ^{-3, -4} 5000 Vrms and 7000 Vpeak or less (For 701255) 701978 Differential probe ^{-3, -4} ±1500 V (DC + ACpeak) (For 701255) 701905 Conversion cable For differential probe 701955 Bridge head (NDIS, 120 Ω) With 5 m cable 701956 Bridge head (DSUB, 120 Ω) With 5 m cable 701957 Bridge head (DSUB, 120 Ω) shunt-CAL with 5 m cable 701958 Bridge head (DSUB, 350 Ω) shunt-CAL with 5 m cable 758924 Safety BNC-banana adapter 500 Vrms CAT II	720931	Clamp-on probe	AC 200 Arms, 40 Hz to 3.5 kHz
Tots 77Differential probe(For 701255)701978Differential probe $\pm 1500 V (DC + ACpeak) (For 701255)$ 701905Conversion cableFor differential probe701955Bridge head (NDIS, 120 Ω)With 5 m cable701956Bridge head (NDIS, 350 Ω)With 5 m cable701957Bridge head (DSUB, 120 Ω) shunt-CAL with 5 m cable701958Bridge head (DSUB, 350 Ω)701958Bridge head (DSUB, 350 Ω)758924Safety BNC-banana adapter500 Vrms CAT II	701934	Probe power supply	
701905 Conversion cable For differential probe 701905 Bridge head (NDIS, 120 Ω) With 5 m cable 701956 Bridge head (NDIS, 350 Ω) With 5 m cable 701957 Bridge head (DSUB, 120 Ω) shunt-CAL with 5 m cable 701958 Bridge head (DSUB, 350 Ω) shunt-CAL with 5 m cable 701958 Bridge head (DSUB, 350 Ω) shunt-CAL with 5 m cable 758924 Safety BNC-banana adapter 500 Vrms CAT II	701977	Differential probe*3, *4	
701955 Bridge head (NDIS, 120 Ω) With 5 m cable 701956 Bridge head (NDIS, 350 Ω) With 5 m cable 701957 Bridge head (DSUB, 120 Ω) shunt-CAL with 5 m cable 701958 Bridge head (DSUB, 350 Ω) shunt-CAL with 5 m cable 701958 Bridge head (DSUB, 350 Ω) shunt-CAL with 5 m cable 758924 Safety BNC-banana adapter 500 Vrms CAT II	701978	Differential probe*3, *4	±1500 V (DC + ACpeak) (For 701255)
701956 Bridge head (NDIS, 350 Ω) With 5 m cable 701957 Bridge head (DSUB, 120 Ω) shunt-CAL with 5 m cable 701958 Bridge head (DSUB, 350 Ω) shunt-CAL with 5 m cable 758924 Safety BNC-banana adapter 500 Vrms CAT II	701905	Conversion cable	For differential probe
701957 Bridge head (DSUB, 120 Ω) shunt-CAL with 5 m cable 701958 Bridge head (DSUB, 350 Ω) shunt-CAL with 5 m cable 758924 Safety BNC-banana adapter 500 Vrms CAT II	701955	Bridge head (NDIS, 120 Ω)	With 5 m cable
701958 Bridge head (DSUB, 350 Ω) shunt-CAL with 5 m cable 758924 Safety BNC-banana adapter	701956	Bridge head (NDIS, 350 Ω)	With 5 m cable
758924 Safety BNC-banana 500 Vrms CAT II adapter	701957	Bridge head (DSUB, 120 Ω)	shunt-CAL with 5 m cable
adapter 500 VIIIs CALI	701958	Bridge head (DSUB, 350 Ω)	shunt-CAL with 5 m cable
	758924		500 Vrms CAT II
	B9988AE		One lot: 10 rolls, 10 m each, for DL850E/EV

Model	Product	Description ^{*1}
702911	Logic probe ^{'5}	8 bit, 1 m, non-Isolated, TTL level/Contact Input
	0 1	
702912	Logic probe ^{*5}	8 bit, 3 m, non-Isolated, TTL level/Contact Input
700986	High-speed logic probe ⁵	8 bit, non-Isolated, response speed: 1 µs (typ.)
700987	Isolation logic probe ^{*6}	8 bit, each channel isolated
758917	Measurement lead set ⁷	0.75 m, Stackable type (2 per set) Alligator-Clip is required separately.
758933	Measurement lead set ⁻⁷	1000 V/19 A/1 m length Alligator-Clip is required separately.
701902	Safety BNC-BNC cable (1 m)	1000 Vrms CAT II (BNC-BNC)
701903	Safety BNC-BNC cable (2 m)	1000 Vrms CAT II (BNC-BNC)
720911	External I/O Cable	For DL850E/EV
720922	DC Power Cable (Cigarette Lighter Plug)	For DL350
701948	Plug-on clip	For 700929 and 701947
701906	Long test clip	For 701977, 701978 and 701901
A1800JD	Terminal	For 720220 input terminal, one (1) piece
A1833JD	Terminal	For 720220 input terminal, one (1) piece
720941	Optical Transceiver Module	For DL950 multi-unit connection
720942	Optical Fiber Cord	For DL950 multi-unit connection, 3 m
701972	Soft carrying case	For DL950
705926	Connecting cables	Connecting cable for 701953, 1 m
705927	Connecting cables	Connecting cable for 701953, 3 m
720940	GPS unit	For DL950 and DL350
751542-E4	Rack Mounting kit	For EIA
751542-J4	Rack Mounting kit	For JIS
*1: Actual all	owable voltage is the lower of	the voltages specified for the main unit and

*1: Actual allowable voltage is the lower of the voltages specified for the main unit and cable.
*2: 30 Vrms is safe when using the 701940 with an isolated type BNC input.
*3: Either the probe power option of the main unit or the probe power supply (701934) is required.
*4: The number of current probes that can be powered from the main unit's probe power option is limited.
*5: Includes one of each of the B9879PX and B9879KX connection leads.
*6: Additionally, 758917 and either the 758922 or 758929 are required for measurement.
*7: Alligator clip is required.
*8: Refer to the bulletin and user's manual of each product to confirm the compatibility with the main unit.

Plug-in module model numbers

Model	Description	
720212	High-speed 200 MS/s 14 Bit Isolation Module	
720211	High-speed 100 MS/s 12 Bit Isolation Module	
720250	High-speed 10 MS/s 12 Bit Isolation Module	
701251	High-speed 1 MS/s 16 Bit Isolation Module	
720256	4 CH 10 MS/s 16 Bit Isolation Module	
720254	4 CH 1 MS/s 16 Bit Isolation Module	
701255	High-speed 10 MS/s 12 Bit non-Isolation Module	
720268	High-Voltage 1 MS/s, 16 Bit Isolation Module (with AAF, RMS)	
720220	Voltage Input Module (16 CH)	
701261	Universal Module	
701262	Universal Module (with Anti-Aliasing Filter)	
701265	Temperature/High-Precision Voltage Module	
720266	Temperature/High-Precision Voltage Isolation Module (Low Noise)	
720221	16 CH Temperature/Voltage Input Module	
701953-L1	16 CH Scanner Box (provided with 1 m cable)	
701953-L3	16 CH Scanner Box (provided with 3 m cable)	
701270	Strain Module (NDIS)	
701271	Strain Module (DSUB, Shunt-CAL)	
701275	Acceleration/Voltage Module (with Anti-Aliasing Filter)	
720281	Frequency Module	
720230	Logic Input Module	
720245	CAN FD/LIN Monitor Module	
	SENT Monitor Module	

"The External Scanner Box (model 701953) is required to use the the 720221 module

*Firmware update may be required when using these modules. *The specifications of these modules are expressed differently in the case of the SL1000.

See the SL1000 user's manual.

* The 720220 does not support the DL950.

This is a Class A instrument based on Emission standards EN61326-1 and EN55011, and is designed for an industrial environment.

Operation of this equipment in a residential area may cause radio interference, in which case users will be responsible for any interference which they cause.

See previous page for detail about probes, cables, and converters.

The DL950, SL2000, DL350, 720212, and 720211 use an Internal laser light source.



Complies with 21 CFR 1040.10 and 1040.11 except for conformance with IEC 60825-1 Ed. 3., as described in Laser Notice No. 56, dated May 8, 2019. 4-9-8 Myojin-cho, Hachioji-shi, Tokyo 192-8566, Japan

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- Yokogawa's electrical products are developed and produced in facilities that have received ISO14001 approval.
- In order to protect the global environment, Yokogawa's electrical products are designed in accordance with Yokogawa's Environmentally Friendly Product Design Guidelines and Product Desion Assessment Criteria.

-NOTICE-

 Before operating the product, read the user's manual thoroughly for proper and safe operation.



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