

Nomor : CBT/SPPH/26/MH/0792

Tanggal : 18 September 2026

**Kepada Yth,
Pimpinan/Direktur
Utama
Rekanan PT SUCOFINDO (Persero)**

Perihal : **informasi Tender**

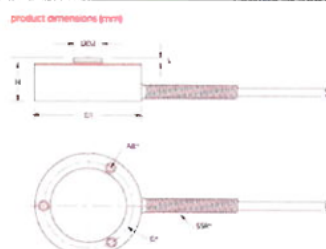
Bersama ini disampaikan informasi kebutuhan untuk Perusahaan kami yang akan kami adakan sebagaimana terinci dalam uraian barang/pekerjaan sebagai berikut:

No	Deskripsi	Jumlah	Pemenuhan	Pengguna
1	Button load cell 150 kN	1	Desember 2026	SBU Laboratorium
2	Calibrator colorimeter	1	Desember 2026	SBU Laboratorium
3	Chamber for Humadity (35% - 90% RH) dan Temperatur (15 C -50 C)	1	Desember 2026	Cabang Makassar
4	Chub E4	1	Desember 2026	Cabang Balikpapan
5	Cuvet Calibrator (set) for Spectrofotometer	1	Desember 2026	Cabang Makassar
6	Data logger 20 Channel	1	Desember 2026	Cabang Makassar
7	Hart Communicator	2	Desember 2026	SBU Laboratorium
8	Calibrator HVAS TSP PM 10 PM 2.5	1	Desember 2026	SBU Laboratorium
9	Memory Hi Logger 10 Channel	1	Desember 2026	SBU Laboratorium

Untuk kelancaran proses pengadaan, diharapkan perusahaan saudara dapat memenuhi persyaratan berikut:

1. Peserta tender harus sudah memenuhi lampiran wajib pada **aplikasi e-procurement SUCOFINDO**.
2. Memiliki Nomor Induk Berusaha (NIB) sesuai dengan kategori barang yang akan di supply.
3. Peserta wajib klik **Ikut Pengadaan** sebelum batas waktu.
4. Peserta tender yang memenuhi persyaratan akan mendapatkan undangan anwizjizing.

Lampiran Spesifikasi CBT/SPPH/26/MH/0792

Nama barang ^{a)}	Button Loadcell 150 Kn																								
Merk	Mates / Setara																								
Type	-																								
Persyaratan tambahan	Sesuai Detail Spesifikasi																								
Jumlah	1 Set																								
Gambar																									
Detail Spesifikasi	Button Loadcell 150 Kn With Display GENERAL SPECIFICATIONS • Capacity range 150kN • Stainless steel construction Environmental protection to IP64 • High accuracy $\pm 0.5\%$ • Low profile, small diameter and low weight design • Temperature compensated from -15°C to $+70^{\circ}\text{C}$																								
	• Rentang pengukuran: 1.2~220mm (Baja) • Allowable maximum load % full scale 150 • Non-linearity % FS Max 0.5 • Repeatability % FS Max 0.1 • Total error % FS Max 0.8 • Zero balance % FS Max • Display resolusi $\leq 0.001\text{kN}$ <table><tr><th>Capacity</th><th>D1 mm [in]</th><th>D2 mm [in]</th><th>H mm [in]</th><th>L mm [in]</th><th>A</th><th>B mm [in]</th><th>G mm [in]</th></tr><tr><td>100kN</td><td>50.3 [1.98]</td><td>15.24 [0.60]</td><td>22.35 [0.88]</td><td>3.05 [0.12]</td><td>M4</td><td>6.35 [0.25]</td><td>41.3 [1.625]</td></tr><tr><td>150kN</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	Capacity	D1 mm [in]	D2 mm [in]	H mm [in]	L mm [in]	A	B mm [in]	G mm [in]	100kN	50.3 [1.98]	15.24 [0.60]	22.35 [0.88]	3.05 [0.12]	M4	6.35 [0.25]	41.3 [1.625]	150kN							
Capacity	D1 mm [in]	D2 mm [in]	H mm [in]	L mm [in]	A	B mm [in]	G mm [in]																		
100kN	50.3 [1.98]	15.24 [0.60]	22.35 [0.88]	3.05 [0.12]	M4	6.35 [0.25]	41.3 [1.625]																		
150kN																									

Nama barang ^{a)}	Calibrator Colorimeter
Merk	Hach
Type	CSA-20V
Persyaratan tambahan	Sesuai Detail Spesifikasi
Jumlah	1 Set
Gambar	 *gambar hanya ilustrasi
Detail Spesifikasi	GENERAL SPECIFICATION Type / model : CSA-20V • White calibration Plate • 45/0 : 45° illumination, 0° viewing • 2° Observer • Source : A parameter: "Y" value, "x" value, "y" value • Source : C parameter: "Y" value, "x" value, "y" value • Source : D65 parameter: "Y" value, "x" value, "y" value

Nama barang ^{a)}	Chamber for Humidity (35% - 90% RH) dan Temperatur (15 C - 50 C)
Merk	Thermoscientific
Type	-
Persyaratan tambahan	Sesuai Detail Spesifikasi
Jumlah	1 Unit
Gambar	
Detail Spesifikasi	General Spesification : • -40°C to +180°C, • 35% - 90% RH • Temperature changing rate : 6 K/min cooling, • Test space dimensions (mm) : Height 310, Width 350, Depth 300, • Observation window test space lighting, • Adjustable temperature limiter tmin/tmax,
	• RS-232 remote control, • 100 Kg Weight.

Nama barang a)	CHUB E4																				
Merk	Fluke																				
Type	E4																				
Persyaratan tambahan	Sesuai Detail Spesifikasi																				
Jumlah	1																				
Gambar																					
Detail Spesifikasi	<table><thead><tr><th></th><th>PRT / RTD</th><th>Thermistor</th><th>Thermocouple</th></tr></thead><tbody><tr><td>Inputs</td><td colspan="3">2 channels PRT/thermistor and 2 channels TC, or 4 channels PRT/thermistor, or 4 channels TC, specify when ordering PRT/thermistor channels accept 2, 3, or 4 wires; TC inputs accept B, E, J, K, N, R, S, T, and Au-Pt TC types. (Support for C and U type thermocouples is available. Download the application note Using Fluke Calibration Readouts with Tungsten-Rhenium and other Thermocouples)</td></tr><tr><td>Temperature Range</td><td>-189 °C to 960 °C</td><td>-50 °C to 150 °C</td><td>-270 °C to 1800 °C</td></tr><tr><td>Measurement Range</td><td>0 to 400 Ω</td><td>0 to 500 KΩ</td><td>-10 to 100 mV</td></tr><tr><td>Characterizations</td><td>ITS 90, IEC 751 (DIN "385"), Callendar-Van Dusen</td><td>Steinhart-Hart, YSI 400</td><td>NIST Monograph 175, 3-point deviation function applied to NIST 175, 6th-order polynomial</td></tr></tbody></table>		PRT / RTD	Thermistor	Thermocouple	Inputs	2 channels PRT/thermistor and 2 channels TC, or 4 channels PRT/thermistor, or 4 channels TC, specify when ordering PRT/thermistor channels accept 2, 3, or 4 wires; TC inputs accept B, E, J, K, N, R, S, T, and Au-Pt TC types. (Support for C and U type thermocouples is available. Download the application note Using Fluke Calibration Readouts with Tungsten-Rhenium and other Thermocouples)			Temperature Range	-189 °C to 960 °C	-50 °C to 150 °C	-270 °C to 1800 °C	Measurement Range	0 to 400 Ω	0 to 500 KΩ	-10 to 100 mV	Characterizations	ITS 90, IEC 751 (DIN "385"), Callendar-Van Dusen	Steinhart-Hart, YSI 400	NIST Monograph 175, 3-point deviation function applied to NIST 175, 6th-order polynomial
	PRT / RTD	Thermistor	Thermocouple																		
Inputs	2 channels PRT/thermistor and 2 channels TC, or 4 channels PRT/thermistor, or 4 channels TC, specify when ordering PRT/thermistor channels accept 2, 3, or 4 wires; TC inputs accept B, E, J, K, N, R, S, T, and Au-Pt TC types. (Support for C and U type thermocouples is available. Download the application note Using Fluke Calibration Readouts with Tungsten-Rhenium and other Thermocouples)																				
Temperature Range	-189 °C to 960 °C	-50 °C to 150 °C	-270 °C to 1800 °C																		
Measurement Range	0 to 400 Ω	0 to 500 KΩ	-10 to 100 mV																		
Characterizations	ITS 90, IEC 751 (DIN "385"), Callendar-Van Dusen	Steinhart-Hart, YSI 400	NIST Monograph 175, 3-point deviation function applied to NIST 175, 6th-order polynomial																		

Temperature Accuracy (meter only)	$\pm 0.004^{\circ}\text{C}$ at -100°C $\pm 0.006^{\circ}\text{C}$ at 0°C $\pm 0.009^{\circ}\text{C}$ at 100°C $\pm 0.012^{\circ}\text{C}$ at 200°C $\pm 0.018^{\circ}\text{C}$ at 400°C $\pm 0.024^{\circ}\text{C}$ at 600°C	$\pm 0.0025^{\circ}\text{C}$ at 0°C $\pm 0.0025^{\circ}\text{C}$ at 25°C $\pm 0.004^{\circ}\text{C}$ at 50°C $\pm 0.010^{\circ}\text{C}$ at 75°C $\pm 0.025^{\circ}\text{C}$ at 100°C	Ext. RJC Int. RJC B at $1000^{\circ}\text{C} \pm 0.6^{\circ}\text{C}$ $^{\circ}\text{C} \pm 0.6^{\circ}\text{C}$ E at $600^{\circ}\text{C} \pm 0.07^{\circ}\text{C}$ $^{\circ}\text{C} \pm 0.25^{\circ}\text{C}$ J at $600^{\circ}\text{C} \pm 0.1^{\circ}\text{C}$ $\pm 0.35^{\circ}\text{C}$ K at $600^{\circ}\text{C} \pm 0.15^{\circ}\text{C}$ $^{\circ}\text{C} \pm 0.4^{\circ}\text{C}$ N at $600^{\circ}\text{C} \pm 0.15^{\circ}\text{C}$ $^{\circ}\text{C} \pm 0.3^{\circ}\text{C}$ R at $1000^{\circ}\text{C} \pm 0.4^{\circ}\text{C}$ $^{\circ}\text{C} \pm 0.5^{\circ}\text{C}$ S at $1000^{\circ}\text{C} \pm 0.5^{\circ}\text{C}$ $^{\circ}\text{C} \pm 0.6^{\circ}\text{C}$ T at $200^{\circ}\text{C} \pm 0.1^{\circ}\text{C}$ $\pm 0.3^{\circ}\text{C}$
Temperature Resolution	0.001 °	0.0001 °	0.01 to 0.001 °
Resistance/Voltage Accuracy	$0\ \Omega$ to $20\ \Omega \pm 0.0005\ \Omega$ $20\ \Omega$ to $400\ \Omega \pm 25\ \text{ppm of rdg.}$	$0\ \Omega$ to $5\ \text{K}\Omega \pm 0.5\ \Omega$ $5\ \text{K}\Omega$ to $200\ \text{K}\Omega \pm 100\ \text{ppm of rdg.}$ $200\ \text{K}\Omega$ to $500\ \text{K}\Omega \pm 300\ \text{ppm of rdg.}$	-10 to $50\ \text{mV} \pm 0.005\ \text{mV}$ 50 to $100\ \text{mV} \pm 100\ \text{ppm of rdg.}$ Internal RJC $\pm 0.25^{\circ}\text{C}$
Operating Range	16°C to 30°C		
Measurement Interval	0.1 second to 1 hour; inputs may be read sequentially or simultaneously at 1 second or greater interval		
Excitation Current	1 mA, reversing	2 and 10 μA , automatically selected	n/a
Display	33 x 127 mm (1.3 x 5 in) backlit LCD graphical display		
Display Units	$^{\circ}\text{C}$, $^{\circ}\text{F}$, K, Ω , $\text{K}\Omega$, mV		
Data Logging	Up to 8,000 time- and date stamped measurements can be logged		
Logging Intervals	0.1, 0.2, 0.5, 1, 2, 5, 10, 30, or 60 seconds; 2, 5, 10, 30, or 60 minutes		
Averaging	Moving average of most recent 2 to 10 readings, user selectable		
Probe Connection	Patented DWF Connectors accept mini spade lug, bare wire, or mini banana plug terminations		Universal receptacle accepts miniature and standard TC connectors
Communications	RS 232 included, IEEE 488 (GPIB) optional		
AC Power	100-240 V ac, 50-60 Hz, 0.4 A		
DC Power	12-16 VDC, 0.5 A (battery charges during operation from 14.5 to 16V DC, 1.0A)		
Battery	NiMH, 8 hours of operation typical without backlight, 3 hours to charge, 500 cycles		

* dilengkapi dengan hardcase.

Nama barang ^{a)}	Cuvet Calibrator (set) for Spectrofotometer
Merk	Starna
Type	RM-1N2N3NHGDG
Persyaratan tambahan	Sesuai Detail Spesifikasi
Jumlah	1 Unit
Gambar	
Detail Spesifikasi	General Specification : - Starna Neutral Density Filter Set (Wavelength (nm) 440.0; 465.0; 546.1; 590.0; 635.0) - Holmium glass filter for use as a wavelength accuracy reference in the UV and visible spectrum (219 - 641 nm)
	Didymium glass filter for use as a wavelength accuracy reference in the UV and visible spectrum (431 – 879 nm)

Nama barang ^{a)}	Data logger 20 Channel
Merk	Hioki
Type	LR 8401-20
Persyaratan tambahan	Sesuai Detail Spesifikasi
Jumlah	1 Set
Gambar	

Detail Spesifikasi

General specifications (product and accuracy guaranteed for one year)	
Internal memory	16 Mega-bytes (8M data points)
Internal clock	Auto calendar, Precision ± 3 s/day (at 23 °C/ 73 °F)
Accuracy of timebase	± 0.2 s/day on measurement (at 23 °C/ 73 °F)
Backup battery	For clock and setting conditions; battery life 5 years (at 23 °C/ 73 °F)
Operating temp. & humidity	0 °C (32 °F) to 40 °C (104 °F), 80 % rh or less (non-condensating, when charging, 10 °C/ 50 °F to 40 °C/ 104 °F)
Storage temp. & humidity	-10 °C (14 °F) to 60 °C (140 °F), 80 % rh or less, (non-condensating)
Conforming standards	Safety : EN61010-1, EMC : EN61326-1, EN61000-3-2, EN61000-3-3
Anti-vibration	JIS D1601 : 1995 5.3 (I) Corresponds to Class I: a passenger car, Condition: class A
External control terminal	External trigger input, Trigger output, 4 channel alarm outputs, ~ 12 V/ 100 mA max. output, GND
Dimensions & Mass	Approx. 272 mm (10.71 in) W $\times$ 182.4 mm (7.18 in) H $\times$ 66.5 mm (2.62 in) D, 1.8 kg (4.05 oz), (LR8400 main unit, except the Battery Pack 370 g/ 13.1 oz) Approx. 272 mm (10.71 in) W $\times$ 234.8 mm (9.24 in) H $\times$ 66.5 mm (2.62 in) D, 2.6 kg (5.7 oz), (LR8500 $\times$ 2 and LR8400 $\times$ 1, except the Battery Pack 370 g/ 13.1 oz)
Accessories	Detailed operating manual $\times$ 1, Measurement guide $\times$ 1, AC ADAPTER 9418-15 $\times$ 1, USB cable $\times$ 1, CD-R (data collection software "Logger Utility") $\times$ 1
Data storage media	
CF card	CF card slot $\times$ 1, HIOKI 9727 (256 MB), 9728 (512 MB), 9729 (1 GB), 9830 (2 GB), Data format: FAT, FAT32
USB memory	Series A receptacle
Communication function	
LAN interface (ver. 1.20 or later)	IEEE 802.3 Ethernet 100BASE-TX, DHCP, DNS capable • Data acquisition, condition settings used with the Logger Utility software (supplied as standard) • Use the communication command to set and measure • Data download via FTP server function (stored in the CF card or the USB memory) • Automatically transmit data via FTP client function • Remote control via HTTP server function • Send mail function via E-mail system
USB communication interface	USB 2.0 High-speed capable, series mini-B receptacle • Data acquisition, condition settings used with the Logger Utility software (supplied as standard) • Configure the unit and measure using communication commands • Transfer data from the CF card to a PC via USB drive mode (data transfer not possible from USB memory sticks)
Display section	
Display device	5.7 inch TFT color liquid crystal display (640 $\times$ 480 pixel), horizontal 15 division, vertical 10 division, selectable between English and Japanese displays, Back light saver available
LCD Brightness	Selectable from 100, 70, 40, or 25 %
Power supplies	
AC Power	Using the AC ADAPTER 9418-15 (supplied as standard, 100 to 240 VAC, 50/60 Hz) Power consumption: 7 VA (with battery pack removed and maximum brightness)
DC Power	Using the BATTERY PACK Z1000 (optional accessory, AC adapter has priority when used in combination with battery pack) Continuous operation time: 5 hours (at 23 °C, LCD brightness 25 %) Fast recharging time: 3 hours (using the AC adapter and main unit to recharge the battery, at 23 °C, reference value)
External	10 to 28 VDC (Rechargeable voltage 12 to 16 VDC, Please contact your HIOKI distributor for connection cord) Maximum rated power: 24 VA at 16 VDC external power supply, battery

Trigger functions	
Trigger mode, timing	Modes : Single / Repeat, Timing : Start / Stop / Start & Stop, Logical sum (OR) and product (AND) of each trigger source, Selectable for each channel
Analog signal source	Configure each individual channel for 30 channels or up to 60 channels depending on number of additional terminal modules installed. [Level trigger] Triggers when rising or falling through preset level [Window] Triggers when entering or exiting range defined by preset upper and lower limit values
Pulse signal source	8 channels of pulse totalizer inputs [Level trigger] Triggers when rising or falling through preset level [Window] Triggers when entering or exiting range defined by preset upper and lower limit values
Digital signal source	8 channels of digital signal inputs [Logic pattern trigger] agreement (or disagreement) in the specified [1/0/*] pattern
Timer trigger	Set up for year/ month/ day/ hour/ minute/ second
Trigger output	Open collector (active low, with 5 V output, at least 10 ms pulse width), M3 mm screw terminal
Alarm output	
Number of channels	4 channels, non-isolated (common ground with chassis)
Alarm source	60 channels of analog input, 8 channels of pulse totalizer inputs or digital inputs, Thermocouple burn-out detection
Alarm type	Level, Window, Logic pattern, Output latch/ no latch, Cancel alarm while measuring
Alarm sound	Buzzer, ON/OFF possible
Alarm output	Open collector (active low, with 5 V output), M3 mm screw terminal, Output refreshed at every recording interval
Output sink current	200 mA at 5 V to 30 VDC
Measurement Settings	
Recording Intervals (sampling period)	10 ms ^{*1} , 20 ms ^{*2} , 50 ms ^{*3} , 100 ms to 1 hr (19 selections) Note: All input channels are scanned at high speed during every recording interval. ^{*1} Thermocouple burn-out detection OFF, and using up to 15 channels. ^{*2} Thermocouple burn-out detection OFF, and using up to 30 channels, or Thermocouple burn-out detection ON, and using up to 15 channels. ^{*3} Thermocouple burn-out detection OFF, and using up to 60 channels, or Thermocouple burn-out detection ON, and using up to 30 channels.
Graph time axis	100 ms/ div to 1 day/ div (21 selections) Note: Setting is independent from the recording interval
Recording Time	Enable continuous recording ON (records until the Stop key is pressed), or continuous recording OFF (enable a specified time span)
Repeating Recording	(ON/OFF) Enable to repeat recording after the specified recording time span has elapsed
Data Saving	
Storage media	Select a CF card or USB memory (Use only PC Cards sold by HIOKI)
Storage operation	Auto: Save waveform data or time divided calculation results in real time Manual: Push the save key (operation select, item choose, directly save)
Real-time saving	Possible: Waveforms are saved approximately one minute as binary or CSV data to the CF card or the USB memory (if sampling rate is slower than 1 minute, waveforms are saved at each interval). To the PC: Waveforms are saved to the HDD in the PC via LAN or USB communication when used with the Logger Utility Software. Data can be saved in real time to the CF card or USB memory at the same time.
Divided saving	Simple divide: Save waveform data at pre-set times into separate files from the time measurement starts. On schedule: Designate a reference time within 24 hours and save data into separate files at every set time interval starting from the reference time.
Delete & save	Endless loop saving: New file overwrites the oldest file when the CF card or USB memory capacity runs short
Interruptions during saving	Storage media may be removed during real-time save after message confirmation. Upon inserting the storage media again, data saved in internal memory during that time will be saved as a separate file in the media.
Data protect	Possible: When a power failure occurs during real-time save, the file close sequence is completed before the unit is shut down. When powering with batteries and low battery power is detected, the file close sequence will automatically be executed.
Saved data types	Setting condition, Waveform data (binary or text style), Calculation of numerical value, Screen data (compressed BMP)
Loading data	Stored binary data can be recalled by the HiLOGGER in 16 MB quantities

Calculation function

Numerical value calculations	No. 1 to 6, maximum 6 calculations can be conducted simultaneously Selections: average value, peak value, maximum value, time at maximum value, minimum value, time at minimum value
Data range of calculation	During measurement or after stopping: Store all data or data between A and B cursors into internal memory Times: Calculate values at pre-determined 1 sec to 1 day intervals and display the latest value
Calculation value save	Possible: After measuring the last calculated value is automatically saved to the CF card or USB memory as a text file Timed save: Save calculated data at pre-determined 1 sec to 1 day intervals as text data to the CF card or USB memory in real time
Waveform calculations	*4 arithmetic calculations between each channel *Separate display of calculation graphs (only during measurement) and input waveforms *Real-time save of calculation graph data

Other functions

Event marking	Search: Move to the event number entered and display the waveforms appearing before and after event Number of events: Maximum 100 per measurement
A-B cursor	Measurement: time difference between A and B, electric potential difference, electric potential of A or B and time Type: Trace the data, amplitude axis, time axis
Scaling	Convert and display the measurement value of each channel as a scaled value
Rate adjustment	Scaling can be set for a channel so that its value is the same as that for UNIT1-CH1
Comment input	Enter a title or a comment for each channel
Other	Start backup, save ten types setting conditions into main unit, auto set up, start-stop key lock, key-lock, beep sound

Pulse, Digital input

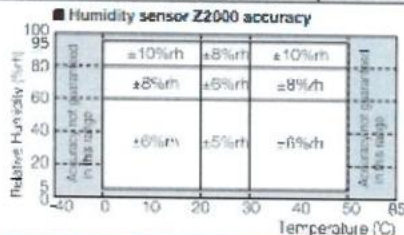
Number of channels	8 channels, (digital / pulse selectable for each channel, M3 screw terminal * 8ch, 2 terminals per channel, not isolated, common ground)		
Input condition	No-voltage 'u' contact (normally open contact), open collector or voltage input, Input resistance: 11 MΩ		
Max. allowable input	0 V to 50 VDC (maximum voltage between input terminals that does not cause damage)		
Max. rated voltage between channels	Not isolated (common ground)		
Max. rated voltage to earth	Not isolated (common ground)		
Detect level	2 selectable levels (H: over 1.0 V, L: 0 - 0.5 V) (H: over 4.0 V, L: 0 - 1.5 V)		
Pulse input period	With filter OFF: 200 μs or more (both H and L periods must be at least 100 μs) With filter ON: 160 ms or more (both H and L periods must be at least 50 ms)		
Slope	Rising or falling edge can be set for each channel		
Pulse measurement mode	Totalized pulses: Integrated (pulse count integration from start), Instantaneous (pulse count value at each sampling, and integrated value is reset each time) Rotation count: Count input pulses during one second		
Filter	For contact bound resistant (ON/OFF set for each channels)		
Measurement parameters	Ranges	Finest Resolution	Range of Measurements
Pulse totalization	1,000 M (pulse) f.s.	1 (pulse)	0 to 1,000 M (pulse)
Pulse revolutions	5,000 n (r/s) f.s.	1 n (r/s)	0 to 5,000 n (r/s)
	"n" above is the number of sensor output pulses per revolution, 1 to 1,000		
Digital input	Record logical "1" or "0" at each sampling		

Analog input section (at 23 ± 5°C / 73 ± 9°F, 30 to 80% rh, from 30 minutes after power on)

Voltage Setting Ranges	Resolution	Measurement range	Accuracy
10 mV f.s.	500 nV	-10 mV to 10 mV	±10 μV
20 mV f.s.	1 μV	-20 mV to 20 mV	±20 μV
100 mV f.s.	5 μV	-100 mV to 100 mV	±100 μV
200 mV f.s.	10 μV	-200 mV to 200 mV	±200 μV
1 V f.s.	50 μV	-1 V to 1 V	±1 mV
2 V f.s.	100 μV	-2 V to 2 V	±2 mV
10 V f.s.	500 μV	-10 V to 10 V	±10 mV
20 V f.s.	1 mV	-20 V to 20 V	±20 mV
100 V f.s.	5 mV	-100 V to 100 V	±100 mV
1 - 5 V f.s.	500 μV	1 V to 5 V	±10 mV

Temperature Thermocouples (Excluding standard reference contact accuracy)
(Compliance standard)
K, J, E, I, N, R, S, B: JIS C7602-1995, IEC 584
W: ASTM E-988-96

Thermocouple	Setting Ranges	Resolution	Measurement range	Accuracy
K	100 °C f.s.	0.01 °C	-100 to less than 0 °C	±0.8 °C
			0 to 100 °C	±0.6 °C
	500 °C f.s.	0.05 °C	-200 to less than -100 °C	±1.5 °C
			-100 to less than 0 °C	±0.8 °C
			0 to 500 °C	±0.6 °C
	2000 °C f.s.	0.1 °C	-200 to less than -100 °C	±1.5 °C
			-100 to less than 0 °C	±0.8 °C
			0 to 1350 °C	±0.8 °C
			-100 to less than 0 °C	±0.8 °C
			0 to 100 °C	±0.6 °C
J	100 °C f.s.	0.01 °C	-100 to less than 0 °C	±1.0 °C
			0 to 100 °C	±0.6 °C
	500 °C f.s.	0.05 °C	-200 to less than -100 °C	±1.0 °C
			-100 to less than 0 °C	±0.8 °C
			0 to 500 °C	±0.6 °C
	2000 °C f.s.	0.1 °C	-200 to less than -100 °C	±1.0 °C
			-100 to less than 0 °C	±0.8 °C
			0 to 1200 °C	±0.6 °C
			-100 to less than 0 °C	±0.8 °C
			0 to 100 °C	±0.6 °C
E	100 °C f.s.	0.01 °C	-100 to less than 0 °C	±0.8 °C
			0 to 100 °C	±0.6 °C
	500 °C f.s.	0.05 °C	-200 to less than -100 °C	±1.0 °C
			-100 to less than 0 °C	±0.8 °C
			0 to 500 °C	±0.6 °C
	2000 °C f.s.	0.1 °C	-200 to less than -100 °C	±1.0 °C
			-100 to less than 0 °C	±0.8 °C
			0 to 1000 °C	±0.6 °C
			-100 to less than 0 °C	±0.8 °C
			0 to 100 °C	±0.6 °C
T	100 °C f.s.	0.01 °C	-100 to less than 0 °C	±0.8 °C
			0 to 100 °C	±0.6 °C
	500 °C f.s.	0.05 °C	-200 to less than -100 °C	±1.5 °C
			-100 to less than 0 °C	±0.8 °C
			0 to 400 °C	±0.6 °C
	2000 °C f.s.	0.1 °C	-200 to less than -100 °C	±1.5 °C
			-100 to less than 0 °C	±0.8 °C
			0 to 400 °C	±0.6 °C
			-100 to less than 0 °C	±0.8 °C
			0 to 100 °C	±0.6 °C
N	100 °C f.s.	0.01 °C	-100 to less than 0 °C	±1.2 °C
			0 to 100 °C	±1.0 °C
	500 °C f.s.	0.05 °C	-200 to less than -100 °C	±2.2 °C
			-100 to less than 0 °C	±1.2 °C
			0 to 500 °C	±1.0 °C
	2000 °C f.s.	0.1 °C	-200 to less than -100 °C	±2.2 °C
			-100 to less than 0 °C	±1.2 °C
			0 to 1300 °C	±1.0 °C
			-100 to less than 0 °C	±1.2 °C
			0 to 100 °C	±1.0 °C
Thermocouple	Setting Ranges	Resolution	Measurement range	Accuracy
R	100 °C f.s.	0.01 °C	0 to 100 °C	±4.5 °C
			0 to less than 100 °C	±4.5 °C
	500 °C f.s.	0.05 °C	100 to less than 300 °C	±5.0 °C
			300 to 500 °C	±2.2 °C
	2000 °C f.s.	0.1 °C	0 to less than 100 °C	±1.5 °C
			100 to less than 300 °C	±3.0 °C
			300 to 1700 °C	±2.2 °C
	100 °C f.s.	0.01 °C	0 to 100 °C	±4.5 °C
			0 to less than 100 °C	±4.5 °C
	500 °C f.s.	0.05 °C	100 to less than 300 °C	±3.0 °C
S			300 to 500 °C	±2.2 °C
	2000 °C f.s.	0.1 °C	0 to less than 100 °C	±4.5 °C
			100 to less than 300 °C	±3.0 °C
			300 to 1700 °C	±2.2 °C
	2000 °C f.s.	0.1 °C	400 to less than 600 °C	±5.5 °C
B			600 to less than 1000 °C	±3.8 °C
			1000 to 1800 °C	±2.5 °C
W	100 °C f.s.	0.01 °C	0 to 100 °C	±1.8 °C
	500 °C f.s.	0.05 °C	0 to 500 °C	±1.8 °C
	2000 °C f.s.	0.1 °C	0 to 2000 °C	±1.8 °C
Other specifications about thermocouple measurement				
Reference junction compensation		Internal/ External, at INI RJC, total accuracy = add ± 0.5 °C		



Digital filter	Select OFF: 50 Hz/ 60 Hz (In order to remove harmonic components, during analog input the cut-off frequency is automatically set according to the sampling rate)
----------------	--

- Humidity Sensor : 10 Pcs
- Thermocouple Type K : 1 Roll (100 m)
- Include Hardcase

NO	NAMA BARANG	SAT	QTY
1.	HART COMUNICATOR A. GENERAL SPECIFICATIONSE • HART Support: Fully compliant with HART protocols 4, 5, 6, and 7, supporting universal, common practice, and device-specific commands. • Processor & Memory: Typical processors range from 80 MHz to 800 MHz, with 256 MB RAM and 512 MB+ internal flash storage. • Display & Interface: 3.5-inch color LCD touchscreen (transflective) or similar, with alpha-numeric membrane keypads. • Power Supply: Rechargeable Lithium-Ion battery packs providing 10–20+ hours of continuous operation, with 100-240 VAC chargers. • Connectivity: USB ports, IrDA (Infrared) for older devices, and Bluetooth v2.0/v4.0 for wireless data transfer to laptops or tablets. • Environmental Ratings: Often ruggedized for hazardous environments, featuring IP54 or higher ratings and hazardous area certifications (e.g., ATEX, Class I, Div 1) • DD Library: Supports a comprehensive Device Description (DD) library for nearly all major instrument manufacturers (Rosemount,	Unit	2
	Yokogawa, ABB, ENDRESS+HAUSER etc.) • System Integration: Compatible with Asset Management Systems (AMS) and can store numerous device configurations in PDF/TXT formats • Loop Resistance: Requires a Resistor in the loop for proper signal communication		

Nama barang ^{a)}	Calibrator HVAS TSP PM 10 PM 2.5
Merk	Tisch
Type	TSP PM 10 PM 2.5
Persyaratan tambahan	Sesuai Detail Spesifikasi
Jumlah	1 Unit
Gambar	 *gambar hanya ilustrasi
Detail Spesifikasi	A. GENERAL SPECIFICATIONSE VALUE • Flow measurement = 25 – 50 CFM (700 ~ 1400 L/M) • Flow accuracy =0.75 % reading • Ambient Temperature Range: -35°C to +65°C • Ambient Temperature Accuracy: +/- 2 °C • Orifice Pressure Range: 0-10 inches H2O • Orifice Pressure Accuracy: 0.5% of Full Scale • Ambient Pressure Range: 625 to 825 mmHg • Ambient Pressure Accuracy: +/- 10 mmHg • Five Key Configuration: Four Quadrants & Center 2.8 Inch LCD Display 240 x 320 Color • 4AA Batteries Micro USB (+5v @ 500 mA)

Nama barang ^{a)}	MEMORY HI LOGGER 10 CHANEL
Merk	HIOKI
Type	10 Channel
Persyaratan tambahan	Sesuai detail spesifikasi
Jumlah	1
Gambar	
Detail Spesifikasi	• 10 Chanel • Measurement recording interval 10ms to 1hour • Recording time continuous reading • Pembacaan : -80 ~ 999 • Ketelitian 0.01 • Include accesoris (memory card, Battery, ac adapter, softcase)