■ Standard specifications

ITEM	COM-28	COM-28S
Titration method	Potentiometric titration	Potentiometric titration Photometric titration (using M-28 unit for photometric titration)
Titration mode	Learn titration, Inflection-point detection, Set-point detection, Set point/Inflection-point detection, Cross-point (F, B) detection Other functions: pH-Stat, pH measurement, Dispensing, Calculation	
Measuring range	pH : 0.00 ～ 14.00pH mV : -2000 ～ +2000mV Temperature : 0 ～ 100℃　Automatic/manual temperature compensation	
Endpoint detection mode	Auto-detection using a second derivative, Set-point detection, Cross-point detection	
Number of endpoints detected	Up to 5 end points with a Learn titration file. Condition connection: Max. 3 endpoints	
Display	4.3 inch color LCD touch panel	
Displayed content	Titration conditions, Data per drip, Titration results, Titration curve, Differential curve, List of titration results, Statistics calculation results, Condition settings display	
Memory data capacity	Built-in memory: 50 data points USB flash memory: (≧256MB) Maximum capacity approx. 9,900 data points	Built-in memory: 100 data points USB flash memory: (≧256MB) Maximum capacity approx. 9,900 data points
Settings input method	Key touch input	
Sample data	Sample No.: 2 digits, ID code: 16 alphanumeric characters	
Master file	21 files	51 files
Conditions file	21 files	51 files
Number of linked condition file	3 files	5 files
Titration control mode file	Standard files: 51 Manufacturer settings modes (0–11), Blank modes (12–19), User setting mode (20–50)	
Constant file	51 files K, L (constants), F (factors), M or N (molarity or normality), B (blank mL), S (sample size)	
Sample files	20 files	50 files
Auto input function	Function to automatically set titration results to constant parameters (blank, factor, etc.) . Condition files for automatic input can be designated.	
Calculation function	Concentration calculation, Statistics calculations, pH automatic compensation	
Branching function	After measuring the potential prior to titration, branching into maximum 2 condition files	
Smoothing function	No	Yes
Number of electrode connectors	For Potentiometric : 2ch （BNC x2）φ2 pin conversion plug included For thermistors : 1ch *Compatible electrode is TE-405	
Buret	1 Built-in	1 Built-in, 2 Expansion (optional)
Buret capacity	Standard: 20 mL transparent syringe (with UV light shield protective cover) 10 and 50mL syringes available separately.	
Min. dispensing volume	0.005 mL (with 20-mL syringe)	
Buret accuracy	Relative accuracy: ±0.1% or less (with full capacity discharge from 20-mL syringe at factory settings (new)) Repeat accuracy: 0.01 mL or less (with full capacity discharge from 20-mL syringe, n=6 standard deviation)	
GLP-compliant function	1) Buret precision check, 2) Electrode check, 3) Buret use frequency (display/print), 4) Electrode maintenance (display/print), 5) Reagent level display and alarm	
Stirrer	Magnetic stirrer 1 Stirring bar included	
External input/output	RS-232C: 2 ports　(For Balance 1, Computer or Printer connection 1) USB flash memory stick: 1 port	
Power supply	Does not included AC/DC conversion adapter. Please prepare the following AC adapter. 1) AC Inlet : IEC60320 C14 2) DC output rated voltage : DC24V 3) DC output capacity : 60W or more (less than 100W) 4) Rated input voltage : AC 90V-240V (for the voltage of the place of use) 5) AC input frequency : 45～66Hz 6) Polarity symbols : Center positive 7) DC plug shape : Inner diameter: 2.1mm, Outer diameter: 5.5mm, Length: 9.5mm 8) Certified standards : CE marking 9) AC CODE : Must be compatible with the adapter specifications to be connected	
Dimensions / weight	255(W) × 290(D) × 430(H) mm / Approx. 6.0 kg	

Note: The color of the actual product may differ from what you see here due to printing-related issues.
Note: The appearance, specifications, and accessories may be changed without prior notice for the purpose of making improvements.
Caution regarding safety: Be sure to read the instructions before use, and use the equipment as intended.

HIRANUMA

Automatic Titrator
Since 1965
COM-28 / 28S

Color Touch Panel in a Compact Body

COM-28,
Touch panel makes operation easy for users who do repeat titration on a single item. Titration curves are displayed in real time.

Expandable

COM-28S with Added Features and Expandability

Burets can be added to accommodate the titration of multiple items with different titrant solutions. COM-28S is the standard for the future for users looking to automate analysis and make effective use of their time.

Syringe

In addition to the standard 20mL, 50mL is available for use when more than 20mL is used per measurement, such as in isocyanate (NCO) analysis. An "economy purge function" is provided to automate reagent exchange and reduce liquid waste. (Available exclusively for 10mL and 20mL syringes.)

Touch panel

4.3-inch color LCD touch panel offers a clear and easy-to-see image. Also comes with a stylus for precise control.

Space-Saving

Width 255 mm, depth 290 mm. Stirrer and burette integrated. It takes up little space and is easy to move.

Titration Curve

Displays titration curves in real time. This makes it easier to consider appropriate measurement conditions and to identify factors that may cause variations or failures in measurement results.

Data Control

Able to store 50 previous data results in the main unit, upgradable to 9,900 results with USB memory. Optional software is available to view results on PCs and use the Recalc function.

*Example of maximum configuration. 2 burets, 1 Sample changer.

Sequential

Different components in a single sample can be measured sequentially. The results are obtained automatically, without the need to prepare each sample individually. Up to 3 items can be measured sequentially.

Buret Expansion

Along with the built-in buret, up to two additional burets (B-28) can be installed. By specifying the buret number, various titrations can be performed without changing the titrant each time.

Photometric

By connecting an optional measuring unit for photometric titration (M-28), it can be used for photometric titration to measure metal ions.

Sample Changer

The optional sample changer C-1712 helps productive and efficient measurement. (Installation stands required separately.)