Minebea intec
The true measure

Combics Indicators

Tailor-made solutions for demanding weighing tasks

GERMAN
QUALITY

German Quality

Ex

Explosion protection
available

ⓘ Advantages

- Minimize product rejections with high resolution indicators

- Flexible configuration for all requirements

- Hygienic, rugged design for industrial use

- "German Quality" guarantees years of trouble free, accurate weight results

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Combics industrial indicators combine precision with flexibility for chemical pharmaceutical and logistics industries. From basic to full featured, Combics indicators are the perfect complement to digital and analog bases.

High-resolution indicators for versatile applications

ⓘ For counting, manual formulation or checkweighing the resolution of up to 60,000 displayed divisions provides precise measurement that increases product quality and decreases production costs.

ⓘ Flexible display mounting for bench, wall or attached to the scale base allows easy integration into your existing workflow. Remote auxiliary display compatibility is standard.

ⓘ Combics control interfaces are numerous. Targeted at food, pharmaceutical and process applications, there is a control or data collection interface to fit your requirements.

ⓘ Choose the perfect indicator for your application from three performance levels, all compatible with digital and analog weighing bases.

Combics Analog Base Indicators
(digital input optional or use –UV1 versions on IS data sheet)

Combics 1

Combics 2

Combics 3

Available Applications

Standard Hardware	Combics 1 - CAIS1 and CAIS1L	Combics 2 - CAIS2 and CAIS2L	Combics 3 - CAIS3 and CAIS3L
Keyboard	6 keys	28 keys Numerical keyboard	30 keys Alphanumeric keyboard
Display	14 segments 20 mm weight readout	14 segments 20 mm weight readout plus application symbols	Graphic 20 mm weight readout plus application symbols
Standard Applications			
Straight weighing	•	•	•
Data transfer to printer/PC	•	•	•
ISO test - calibration check/auto adjustment Parts	•	•	•
Parts Counting		•	•
Percentage weighing		•	•
Vibration or motion averaging		•	•
Check weighing / Weight sorting		•	•
Totalizing		•	•
Combining applications (up to three)		•	•
Sample weight and counting to target value (from memory)		•	•
SQ Min - set minimum allowed sample weight	•	•	•
Descriptive sample identifier		•	•
Product data memory		•	•
Date/Time (US and military)		•	•
Integrated red/green/yellow check weigh lights		•	•
Custom printout headers	•	•	•

Available Data Interfaces

Standard Data Ports		CAISL1	CAIS1	CAISL2	CAIS2	CAISL3	CAIS3
COM 1 RS232		•	•	•	•	•	•
COM 2 RS232						•	•
PS 2 Barcode / Keyboard						•	•
Optional Unicom Accessories							
RS232	YDO02C-232		•	•	•	•	•
RS422 and 485	YDO02-485		•	•	•	•	•
Digital 5 input/5 output	YDO02-DIO		•	•	•	•	•
4-20mA / 0 - 10 volt	YDO02-AO		•	•	•	•	•
Profibus DP	YDO02-DP		•		•		•
DeviceNet	YDO02-DN		•		•		•
Ethernet TCP/IP	YDO02-ETH		•		•		•

Dimensions and Port Configurations

Combics 1, 2 & 3
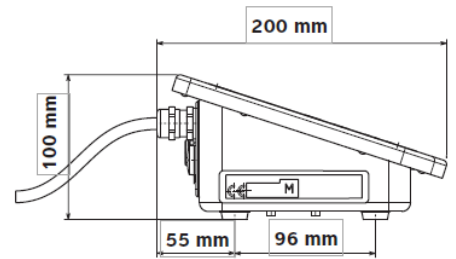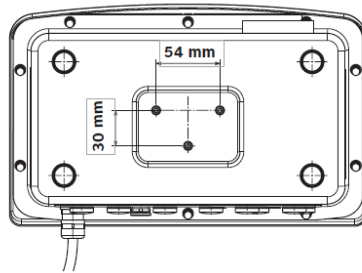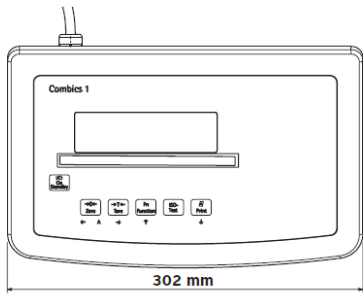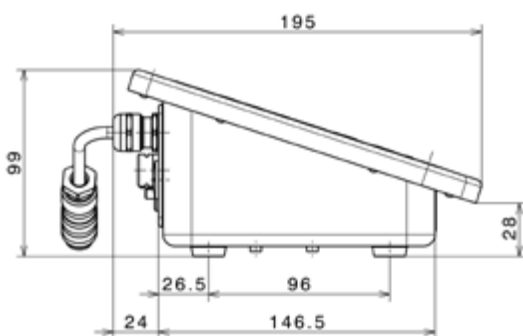

CAIS1L

CAIS2L

CAIS3L

CAIS1   CAIS2   CAIS3

Combics 2 Ex

Cable length 200 mm
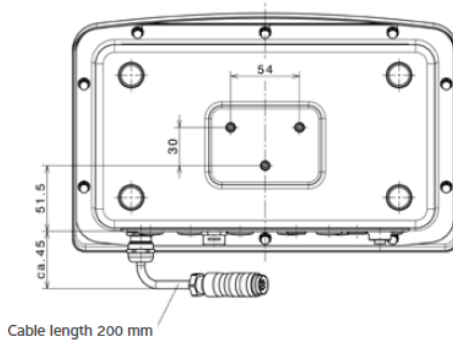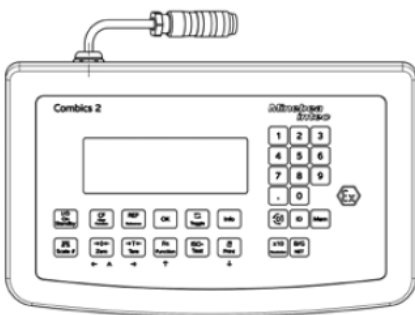
NTEP APPROVED

Class: III and IIIL
C of C: 19-055
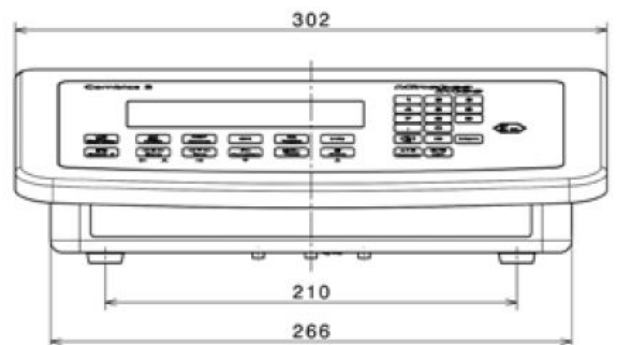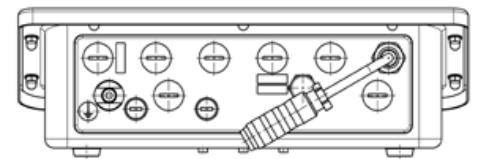
Technical Specifications (non-Ex)

Housing Material	Stainless steel 1.4301 RoHs compliant
Dust and Water Protection	CAIS Versions: IP69K CAISL Versions: IP44 (with optional boot kit IP65)
Display	Combics 1 & 2: back lit LCD, 14 segment/20 mm character height, 7 digit, status symbols Combics 3: Graphical back lit LCD, 20 mm character height, 7 digit, status symbols
Display Mounting	Bench top Wall (with optional wall bracket)
Keypad	Combics 1: 6 key positive click foil Combics 2: 28 key positive click foil, 0-9 keypad, integrated check weigh lights Combics 3: 30 key positive click foil, 0-9 keypad, integrated check weigh lights, graphic soft keys
Net Weight	5.1 pound
Platform Connections	Combics 1: Two possible, 1 analog and 1 digital Combics 2: Two possible, 2 analog, 2 digital or 1 of each Combics 3: Three possible, 2 analog, 1 digital or 2 digital and 1 analog
Maximum Resolution	Smallest usable signal: 0.2 or 0.1 µV/d
Power Cable	8 feet, grounded 3-wire plug
Load Cell Supply	8.4 V
Minimum Load Cell Impedance	83 Ohm to 2,000 Ohm
Measuring Signal	0 mV to 29.4mV
Standard Power Supply	Internal self sensing 100–240 VAC (-15%|+10%), 50–60 Hz, max. 17 W/23 VA
Optional Power Supply	15.5–24 VDC (±10%), max. 12 W 13–17 VAC (±10%), 50–60 Hz, max. 12 W
Immunity to Interference	In accordance with EN 61326-1, industrial areas (IEC 61326-1)
Maximum Number of Load Cells	350 ohm cells - 4 650 ohm cells - 8
Electrical Safety	According to EN 61010-1 (IEC 61010-1), EN60950 (IEC950)

Technical Specifications (CAIXS2-U)

Data Interfaces	RS232 Switchable to RS485 or RS422
Power Supply	Via external power supply unit Connection via 14-pin round connector (cable 20 cm) Inside the area with potentially explosive atmosphere: FM (US): YPS02-XUR CSA: YPS02-XKR FM/CSA: YPS02-ZKR (safe area installation) Battery mode via external battery YRB02-X FM/CSA
Scale Connection	Standard: A/D converter Optional: digital scale interface RS485 or RS232 for connecting xBPI scales, such as IS-Ex platforms or Signum-Ex scales Combics 2 supports two weighing platforms, only one can be analog
Maximum Resolution	Smallest measurement signal 0.2 µV/e
Dead Load	Up to 100% of the weighing range
Load Cell Electrical Supply	2.5 V
Load Impedance	83 ohm up to 2,000 ohm
Measuring Signal	0 mV to 7.5 mV
Measurement Signal for Dead Load	0 mV to 2.5 mV
Ex-approvals	USA: IS/CL I,II,III/DIV 1/GP A,B,C,D,E,F,G T4 CL I/AEx ia IIC T4 /AEx ia IIIC T80^{0}C Canada: IS/CL I,II,III/DIV 1/GP A,B,C,D,E,F,G T4 CL I/Ex ia IIC T4
Humidity	85% relative (non-condensing) to 31°C; 50% relative to 40°C
Maximum Number of Load Cells	350 ohm cells - 4 650 ohm cells - 8
Dust and Water Protection	IP69K
Ambient Temperature	–10°C to +40°C