

4.4 TitroLine® 7500 KF and TitroLine® 7500 KF *trace* –

You can't go wrong with the latest TitroLine® KF titrators from SI Analytics

The TitroLine® 7500 KF is the volumetric generalist for a wide range of use and the TitroLine® 7500 KF *trace* is the specialist for low water contents. Both new titrators are to be characterized by following features:

- Fast, easy and precise
- With standard methods for different applications (titer, blank value, 1 or 2 component reagent)
- The addition of solvent and the extraction of the titrated sample are managed by the titration stand TM 235 KF (optional for TitroLine® 7500 KF *trace*)
- Online display of curve and measurement drift during titration

Benefits
TitroLine® KF (*trace*)

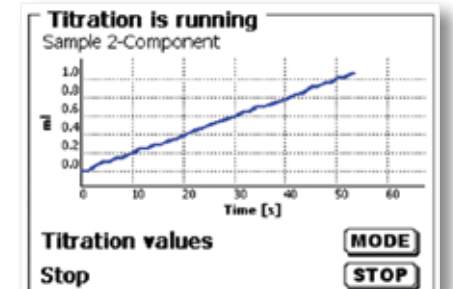


TitroLine® 7500 KF *trace*

Karl Fischer - Titration made easy

Live Titration curve

The online display of the measurement curve, measurement drift and titration solvent consumption (TitroLine® 7500 KF only) make accurate monitoring of the titration possible and one can determine any unwanted side reactions immediately.



TitroLine® 7500 KF

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Specifications –
Piston burette TITRONIC® 500

and titrators TitroLine® 7000/7500/7750/7800

Features	TITRONIC® 500	TitroLine® 7000	TitroLine® 7500 KF	TitroLine® 7500 KF trace	TitroLine® 7750	TitroLine® 7800
Display	Color online graphic	Color online graphic	Color online graphic	Color online graphic	Color online graphic	Color online graphic
Measuring input 1 pH/mV with reference input	—	■	—	—	■	■
Measuring input 2 digital (IDS)	—	—	—	—	—	■
Wireless electrode recognition	—	■	—	—	■	■
Measuring input Dead stop (2 x 4 mm connector)	—	■	■	■	■	■
Measuring input generator electrode (2 x 4 mm connector)	—	—	—	■	—	—
Measuring input temperature (2 x 4 mm connector)	—	■	—	—	■	■
Interfaces	1 x LAN, 2 x USB-A, 1 x USB-B 2 x RS 232	1 x LAN, 2 x USB-A, 1 x USB-B 2 x RS 232	1 x LAN, 2 x USB-A, 1 x USB-B 2 x RS 232	1 x LAN, 2 x USB-A, 1 x USB-B 2 x RS 232	1 x LAN, 2 x USB-A, 1 x USB-B 2 x RS 232	1 x LAN, 2 x USB-A, 1 x USB-B 2 x RS 232
Balance connection	RS232	RS232	RS232	RS232	RS232	RS232
Printer (USB-A)	HP PCL, Seiko DPU S445, PDF	HP PCL, Seiko DPU S445, PDF	HP PCL, Seiko DPU S445, PDF	HP PCL, Seiko DPU S445, PDF	HP PCL, Seiko DPU S445, PDF	HP PCL, Seiko DPU S445, PDF
Intelligent interchangeable modules (5, 10, 20 and 50 ml)	■	■	■	—	■	■
Burette solution (steps)	20,000	20,000	20,000	—	20,000	20,000
Manual titration	■	■	—	—	■	■
Dosing applications	■	■	■	—	■	■
Solution preparation (manual or automatic when connected to balance)	■	■	■	—	■	■
Automatic Titration (Independent without external software)	1)	■	■	■	■	
Titration to mV and pH end points	—	2 EP	—	—	2 EP	2 EP
Dynamic and linear titration to inflection points (EQ) mV and pH	—	2 EQ	—	—	2 EQ	2 EQ
Particularly suitable for non aqueous titrations	—	■	—	—	■	■
Dead-stop-titration	—	■	■	—	■	■
pH-stat-titration	—	■	—	—	■	■
Water determination according to KF volumetry (10 ppm - 100 %, recommended)	—	—	■	—	■	■
Accuracy volumetric Measurements	—	—	< 0.3% at ≥ 10mg H ₂ O	—	< 0.3% at ≥ 10mg H ₂ O	< 0.3% at ≥ 10mg H ₂ O
Water determination according to KF coulometry (1 ppm - 5 %, recommended)	—	—	—	■	—	—
Accuracy coulometric Measurements	—	—	—	< 0.3% at ≥ 10mg H ₂ O	—	—
Standard methods	■	■	■	■	■	■
Number of user methods	15	50	50	50	50	50
Connection and control of autosamplers	—	■	—	—	■	■
Controlable via TitrSoft 3.3 and higher	■	■	■	■	■	■

1) Can be used as titration and dosing burette in automatic titration systems

Specifications – Piston burette TITRONIC® 500

and TitroLine® 7000/7500/7500/7750/7800

Features	TITRONIC® 500	TitroLine® 7000	TitroLine® 7500 KF	TitroLine® 7500 KF trace	TitroLine® 7750	TitroLine® 7800
Analogue measuring inputs						
Measuring input 1 (analog) pH/mV with reference electrode input	—	pH/mV-input with 24 bit transducer Electrode socket according to DIN 19 262 or additional with BNC socket insert RFID receiver for SI Analytics ID electrodes	—	—	pH/mV-input with 24 bit transducer Electrode socket according to DIN 19 262 or additional with BNC socket insert RFID receiver for SI Analytics ID electrodes	pH/mV-input with 24 bit transducer Electrode socket according to DIN 19 262 or additional with BNC socket insert RFID receiver for SI Analytics ID electrodes
Measuring range pH	—	-3.0 to 18.00	—	—	-3.0 to 18.00	-3.0 to 18.00
Display resolution pH / Accuracy pH (without sensor probe)	—	0.001 / 0.002 ± 1 Digit	—	—	0.001 / 0.002 ± 1 Digit	0.001 / 0.002 ± 1 Digit
Measuring range mV	—	-2000 to 2000	—	—	-2000 to 2000	-2000 to 2000
Display resolution mV / Accuracy mV (without sensor probe)	—	0.1 / 0.1 ± 1 Digit	—	—	0.1 / 0.1 ± 1 Digit	0.1 / 0.1 ± 1 Digit
Analogue measuring inputs - Dead Stop						
Measuring input Dead stop (2 x 4 mm socket)	—	Connector (µA) for double platinum electrodes Polarisation voltage adjustable from 40 to 220 mV	Connector (µA) for double platinum electrodes Polarisation voltage adjustable from 40 to 220 mV	Connector (µA) for double platinum electrodes	Connector (µA) for double platinum electrodes Polarisation voltage adjustable from 40 to 220 mV	Connector (µA) for double platinum electrodes Polarization voltage adjustable from 40 to 220 mV
Display resolution µA / Accuracy µA (without sensor probe)	—	0.1 / 0.2 ± 1 Digit	0.1 / 0.2 ± 1 Digit	—	0.1 / 0.2 ± 1 Digit	0.1 / 0.2 ± 1 Digit
Measuring input temperature (2 x 4 mm socket)	—	Connector for Pt 1000 / NTC 30kΩ	—	—	Connector for Pt 1000 / NTC 30kΩ	Connector for Pt 1000 / NTC 30kΩ
Measuring range temperature °C	—	Pt 1000: -75 to 195 / NTC 30kΩ -40...125°C	—	—	Pt 1000: -75 to 195 / NTC 30kΩ -40...125°C	Pt 1000: -75 to 195 / NTC 30kΩ -40...125°C
Display resolution °C / Accuracy °C (without sensor probe)	—	0.1 / Pt 1000: 0.2 K ± 1 Digit NTC 30kΩ: 1.0 K (-40...0°C)/0.3 K (0...125 °C) ± 1 Digit	—	—	0.1 / Pt 1000: 0.2 K ± 1 Digit NTC 30kΩ: 1.0 K (-40...0°C)/0.3 K (0...125 °C) ± 1 Digit	0.1 / Pt 1000: 0.2 K ± 1 Digit NTC 30kΩ: 1.0 K (-40...0°C)/0.3 K (0...125 °C) ± 1 Digit
Digital measuring inputs						
Measuring input 2 (IDS)	—	—	—	—	—	Accuracy ± 1 Digit depending on the used IDS electrode
Messbereich pH	—	—	—	—	—	0.000 to 14.000 ± 0.004 pH
Messbereich mV	—	—	—	—	—	± 1200.0 mV ± 0.2 mV
Messbereich Temperatur °C	—	—	—	—	—	-5.0 ... 105.0 °C ± 0.2 mV
Messbereich Leitfähigkeit	—	—	—	—	—	0.00 ... 2000 mS/cm ± 0.5% v. Mw.
Display	3.5 inches -1/4 VGA TFT display with 320 x 240 pixels	3.5 inches -1/4 VGA TFT display with 320 x 240 pixels	3.5 inches -1/4 VGA TFT display with 320 x 240 pixels	3.5 inches -1/4 VGA TFT display with 320 x 240 pixels	3.5 inches -1/4 VGA TFT display with 320 x 240 pixels	3.5 inches -1/4 VGA TFT display with 320x240 pixels
Housing material	Polypropylene	Polypropylene	Polypropylene	Polypropylene	Polypropylene	Polypropylene
Front keyboard	Polyester coated	Polyester coated	Polyester coated	Polyester coated	Polyester coated	Polyester coated
Housing dimensions	15.3 x 45 x 29.6 cm (W x H x D), height with interchangeable unit	15.3 x 45 x 29.6 cm (W x H x D), height with interchangeable unit	15.3 x 45 x 29.6 cm (W x H x D), height with interchangeable unit	15,3 x XX x 29,6 cm (W x H x D)	15.3 x 45 x 29.6 cm (W x H x D), height with interchangeable unit	15.3 x 45 x 29.6 cm (W x H x D), height with interchangeable unit
Weight	2.2 kg for basic unit 3.5 kg for complete device incl. interchangeable unit (with empty reagent bottle, without magnetic stirrer)	2.3 kg for basic unit 3.5 kg for complete device incl. interchangeable unit (with empty reagent bottle, without magnetic stirrer)	2.3 kg for basic unit 3.5 kg for complete device incl. interchangeable unit (with empty reagent bottle, without magnetic stirrer or TM 235 KF)	2.3 kg for basic unit without magnetic stirrer TM 235 or TM 235 KF	2.3 kg for basic unit 3.5 kg for complete device incl. interchangeable unit (with empty reagent bottle, without magnetic stirrer or TM 235 KF)	2.3 kg for basic unit 3.5 kg for complete device incl. interchangeable unit (with empty reagent bottle, without magnetic stirrer)
Ambient conditions	Ambient temperature: + 10 to + 40 °C for operation and storage	Ambient temperature: + 10 to + 40 °C for operation and storage	Ambient temperature: + 10 to + 40 °C for operation and storage	Ambient temperature: + 10 to + 40 °C for operation and storage	Ambient temperature: + 10 to + 40 °C for operation and storage	Ambient temperature: + 10 to + 40 °C for operation and storage
Material: intelligent interchangeable units (5, 10, 20 and 50 ml)	Valve: PTFE/ETFE Cylinder: borosilicate glass 3.3 (DURAN®) Hoses: FEP, blue	Valve: PTFE/ETFE Cylinder: borosilicate glass 3.3 (DURAN®) Hoses: FEP, blue	Valve: PTFE/ETFE Cylinder: borosilicate glass 3.3 (DURAN®) Hoses: FEP, blue	—	Valve: PTFE/ETFE Cylinder: borosilicate glass 3.3 (DURAN®) Hoses: FEP, blue	Valve: PTFE/ETFE Cylinder: borosilicate glass 3.3 (DURAN®) Hoses: FEP, blue
Dosing accuracy according DIN EN ISO 8655, part 3	Accuracy : 0.15 % Precision: 0.05 - 0.07 % (Depending on the used interchangeable unit)	Accuracy : 0.15 % Precision: 0.05 - 0.07 % (Depending on the used interchangeable unit)	Accuracy : 0.15 % Precision: 0.05 - 0.07 % (Depending on the used interchangeable unit)	—	Accuracy : 0.15 % Precision: 0.05 - 0.07 % (Depending on the used interchangeable unit)	Accuracy : 0.15 % Precision: 0.05 - 0.07 % (Depending on the used interchangeable unit)

Titration
Burettes

4.8 Ordering information: TITRONIC® 500, TitroLine® 7000/7500/7750/7800

Type No.	Order No.	Description
T 500	285220200	TITRONIC® 500 basic unit without magnetic stirrer, with stand rod and titration clamp Z 305, controller TZ 3880, power supply 100-240 V
T 500-M1	285220210	TITRONIC® 500 basic unit with magnetic stirrer TM 235, with stand rod TZ 1510, electrode clamp Z 305, hand controller TZ 3880, power supply 100-240 V
T 500-M2/20	285220220	TITRONIC® 500 basic unit with magnetic stirrer TM 235 and 20 ml exchange unit WA 20, with stand rod TZ 1510, electrode clamp Z 305, hand controller TZ 3880, power supply 100-240 V
TL 7000	285220100	TitroLine® 7000 basic unit without magnetic stirrer, with stand rod and titration clamp Z 305, power supply 100-240 V
TL 7000-M1/10	285220140	TitroLine® 7000 basic unit with magnetic stirrer TM 235 and 10 ml exchangeable unit WA 10, with brown glass bottle for titrant, GL 45 and S 40-bottle adapter, tubes, drip tube and titration tip
TL 7000-M1/20	285220150	TitroLine® 7000 basic unit with magnetic stirrer TM 235 and 20 ml exchangeable unit WA 20, with brown glass bottle for titrant, GL 45 and S 40-bottle adapter, tubes, drip tube and titration tip
TL 7000-M1/50	285220160	TitroLine® 7000 basic unit with magnetic stirrer TM 235 and 50 ml exchangeable unit WA 50, with brown glass bottle for titrant, GL 45 and S 40-bottle adapter, tubes, drip tube and titration tip
TL 7000-M2/20	285220170	TitroLine® 7000 basic unit with magnetic stirrer TM 235 and 20 ml exchangeable unit WA 20, with brown glass bottle for titrant, GL 45 and S 40-bottle adapter, tubes, drip tube and titration tip. With pH-combination electrode and buffer set.
TL 7000-TitriSoft	285220960	basic unit with magnetic stirrer TM 235, with stand rod and titration clamp Z 305, power supply 100-240 V, software TitriSoft 3.3 (TZ 3071)
TL 7500 KF 05	285220810	Volumetric KF-Titrator, scope of supply: basic titrator unit, exchange unit WA 05, TM 235 KF titration stand with integrated stirrer and pump, titration vessel TZ 1770, micro double platinum electrode KF 1100 and starter kit, power supply 100-240 V
TL 7500 KF 10	285220820	Volumetric KF-Titrator, scope of supply: basic titrator unit, exchange unit WA 10, TM 235 KF titration stand with integrated stirrer and pump, titration vessel TZ 1770, micro double platinum electrode KF 1100 and starter kit, power supply 100-240 V
TL 7500 KF 20	285220830	volumetric KF-Titrator, scope of supply: basic titrator unit, exchange unit WA 20, TM 235 KF titration stand with integrated stirrer and pump, titration vessel TZ 1770, micro double platinum electrode KF 1100 and starter kit, power supply 100-240 V
TL 7500 KF trace M1	285220860	Module 1, coulometric KF-Titrator, scope of supply: basic titrator unit, generator electrode TZ 1752 without junction + connection cable, magnetic stirrer TM 235, stand rod, titration vessel TZ 1751, micro double platinum electrode KF 1150
TL 7500 KF trace M2	285220870	Module 2, coulometric KF-Titrator, scope of supply: basic titrator unit, generator electrode TZ 1752 without junction + connection cable, TM 235 KF titration stand with integrated stirrer and pump, stand rod, titration vessel TZ 1754, micro double platinum electrode KF 1150
TL 7500 KF trace M3	285220880	Module 3, coulometric KF-Titrator, scope of supply: basic titrator unit, generator electrode TZ 1753 with junction + connection cable, magnetic stirrer TM 235, stand rod, titration vessel TZ 1751, micro double platinum electrode KF 1150
TL 7500 KF trace M4	285220890	Module 4, coulometric KF-Titrator, scope of supply: basic titrator unit, generator electrode TZ 1753 with junction + connection cable, TM 235 KF titration stand with integrated stirrer and pump, stand rod, titration vessel TZ 1754, micro double platinum electrode KF 1150
TL 7500 KF trace M5	285221000	Module 5, coulometric KF-Titrator, scope of supply: basic titrator unit, generator electrode TZ 1752 without junction + connection cable, magnetic stirrer TM 235, stand rod, titration vessel TZ 1754, micro double platinum electrode KF 1150
TL 7750	285220240	Basic unit without magnetic stirrer, with stand rod; TZ 1510, electrode clamp Z 305, hand controller TZ 3880, power supply 100-240 V
TL 7750-M1	285220250	Basic unit with magnetic stirrer TM 2325, with stand rod; TZ 1510, electrode clamp Z 305, hand controller TZ 3880, power supply 100-240 V
TL 7750 KF 05	285220930	TitroLine® 7750 with KF accessories, scope of supply: basic titrator unit, exchange unit WA 05, TM 235 KF titration stand with integrated stirrer and pump, titration vessel TZ 1770, micro double platinum electrode KF 1100 and starter kit, power supply 100-240 V
TL 7750 KF 10	285220940	TitroLine® 7750 with KF accessories, scope of supply: basic titrator unit, exchange unit WA 10, TM 235 KF titration stand with integrated stirrer and pump, titration vessel TZ 1770, micro double platinum electrode KF 1100 and starter kit, power supply 100-240 V
TL 7750 KF 20	285220950	TitroLine® 7750 with KF accessories, scope of supply: basic titrator unit, exchange unit WA 20, TM 235 KF titration stand with integrated stirrer and pump, titration vessel TZ 1770, micro double platinum electrode KF 1100 and starter kit, power supply 100-240 V
TL 7750-TitriSoft	285220970	basic unit with magnetic stirrer TM 235, with stand rod and titration clamp Z 305, power supply 100-240 V, software TitriSoft 3.3 (TZ 3071)
TL 7800	285220980	TitroLine® 7800 basic unit with two measuring inputs, one analogue and one digital (IDS) measuring input
TL 7800-M1	285220990	TitroLine® 7800 basic unit with two measuring inputs, one analogue and one digital (IDS) measuring input, with magnetic stirrer TM 235
TL 7800-TitriSoft	285221030	basic unit with two measuring inputs, one analogue and one ein digital (IDS) measuring input, with magnetic stirrer TM 235 and TitriSoft 3.2

Accessories for TITRONIC® 500, TitroLine® 7000/7500/7750/7800

Type No.	Order No.	Description
WA 05	285220300	5 ml exchangeable unit with integrated chip for reagent data, with brown glass bottle for titrant, GL 45 and S 40-bottle adapter, tubes, drip tube and titration tip
WA 10	285220310	10 ml exchangeable unit with integrated chip for reagent data, with brown glass bottle for titrant, GL 45 and S 40-bottle adapter, tubes, drip tube and titration tip
WA 20	285220320	20 ml exchangeable unit with integrated chip for reagent data, with brown glass bottle for titrant, GL 45 and S 40-bottle adapter, tubes, drip tube and titration tip
WA 50	285220350	50 ml exchangeable unit with integrated chip for reagent data, with brown glass bottle for titrant, GL 45 and S 40-bottle adapter, tubes, drip tube and titration tip
TM 235, 115-230 V	285220400	Magnetic stirrer for vessels up to 500 ml, agitator speed infinitely adjustable from 500 - 2000 r/min, for the connection to TitroLine® 6000/7000 and TITRONIC® 500
TM 235 KF, 115-230 V	285220900	Titration stand with pump; Scope of delivery: Basic unit with 1 l DURAN ®-reagent bottle TZ 1791, 1 l DURAN®-waste bottle TZ 1792, moisture bottle, tubes and screw threads, power supply TZ 1855 (110 to 240 V)
TZ 1052	285214721	KF-drying stove, 230 V
TZ 1055	285215183	KF-drying stove, 115 V
TZ 1060	285218115	Accessories set for KF drying stove TZ 1052/TZ1055
TZ 1065	285201973	Flowmeter with valve and hose connectors for gas volumes (air, nitrogen) from 50 - 500 ml/min.
KF 1100	285102030	Micro double platinum electrode for Karl Fischer titrations, with fixed cable, double platinum pin and taper NS 7.5 for TZ 1770 and TZ 1772
TZ 1748	285216560	Stand rod stainless steel Ø 10 mm
TZ 1770	285216677	Karl Fischer titration vessel. DURAN® glass vessel TZ 1775 (approx. 30...150 ml), removable head made of polypropylene/PTFE, 1 drilling NS 19, NS 14,5, NS 7,5 and 3 drillings with screw threads, titration tip, moisture trap and weighing funnel
TZ 1789	285221120	Starter kit KF consisting of molecular sieve, needles with syringes and glass wool
TZ 3863	285220480	USB-thermo printer, 112 mm for TitroLine® 6000/7000/7500 KF/7500 KF trace/7750 and TITRONIC® 500
TZ 3864	285220710	Thermal paper for TZ 3863 with very high durability (5 rolls)
TZ 3865	285220440	DIN A4 standard printer, HP PCL-compatible, with USB-connection cable, 230 V