SHIMADZU

Specifications: Model TNPC-4110C On-line Total Nitrogen/Phosphorus Analyzer

Types of measurement	Total Nitrogen, Total Phosphorus, and Total Organic Carbon Items can be measured individually or simultaneously.
Measurement principle	TN: Catalytic thermal decomposition - Chemiluminescence TP: UV oxidative decomposition – molybdenum blue absorption TOC: Catalytic combustion oxidation – CO_2 detection utilizing a non dispersive infrared detector
Measurement range	TN: From 0 to 2/5/10/20/50/100/200/500/1000/2000/4000 mg N/L TP: From 0 to 0.5/1/2/5/10/20/50/100 mg P/L TOC: From 0 to 2/5/10/20/50/100/200/500/1000/2000/5000/10000-/20000 mg C/L
Measurement Cycle	Selectable 1/2/3/4/6/12/24 Hours
Reproducibility	TN: Within ±2% full scale (more than 5 mg N/L) Within ±4% full scale (2 mg N/L full scale) TP: Within ±3% full scale (up to 20 mg P/L) Within ±5% full scale (more than 50 mg P/L) TOC: Within ±2% full scale
Measurement/ delivery of sample /reagents	Automatic dilution in the syringe with the syringe pump
Auto-calibration	Automatic calibration at set times/cycles
Concentration conversion function	Possible conversion into COD
Load Calculation function	Load calculation is possible through multiplication with the flow rate input signal.
Multi-stream switc hing	Max. 3 flow-lines possible with optional Suspended Solids Sample Pretreatment Unit
Display	Backlit LCD, 40 characters/line x 14 lines
Data recorder	Thermal printer is included as standard, 42 characters, chart width 110 mm
Analog output	Choose from 0 -1 VDC, 4 - 20 mA DC or 0 - 16 mA DC (Normal: 2 outputs; Maximum: 10 outputs)
Digital output	RS-422 or RS-232C
Alarm output	Warning, system stop error, abnormal concentration error (choose two from upper limit, lower limit, upper/upper limit or lower/lower limit)
Event signals	Ready for measurement, operating on-line, measuring, measurement complete, calibrating, regenerating catalyst, stopped, data output trigger, sampling active flow line, and power off
Input signals	Start calibration, start sample measurement, stop measurement and reset alarm
Air Source	Compressed air or oxygen, at 250 - 300 kPa supply pressure for Sample Pretreatment unit
Sample conditions	Flow rates: With the Sample Flow Line Set (optional) approx. 3 L/min

	With the Back Wash Strainer Sample Pretreatment Unit (optional) approx. 3 L/min With the Single Stream Suspended Solids Sample Pretreatment Unit approx. 1 L/min With the Multi-Stream Suspended Solids Sample Pretreatment Unit approx. 10 L/min Temperature: 1 - 40 ºC Other: Use a Suspended Solids Sample Pretreatment Unit when samples include suspended solids. This requires a tap water connection (at 300 kPa or greater) for rinsing at the sampling and pretreatment sections.
Power supply	AC 100/120V±10 % 8A (breaker capacity), 50 - 60 Hz
Ambient temperature	0 - 40 ºC
Exterior dimensions	Refer to the Exterior Dimensions Diagram
Weight	Approx. 70 kg