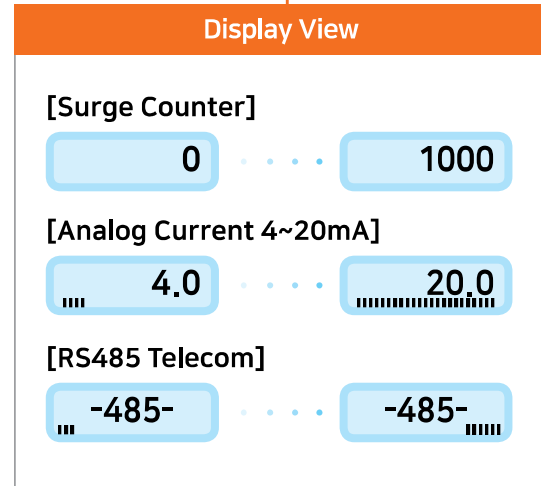


2-Wire Signal/Telecom Line



Signal/Telecom Counter-Type SPD



Function

Surge counter (battery-type counter, Battery life ≥ 10 years, replaceable)

4-20 mA analog signal display (easy-to-inspect and easy-to-maintain)

Communication status display (easy-to-inspect and easy-to-maintain)

Specification

Product Features

Voltage	DC 185V/ 48V/ 24V/ 12V /5V	<p>* Jointly developed with K-Water CE certificate, Patented [No. 10-1736675] Achievement sharing system certified, 2018 Korea Invention Competition Award, 2019 Water Industry Technology Competition Award Performance in compliance with KS C IEC standard [When 20 kV/10 kA (Voltage 1.2/50 μs, Current 8/20 μs) is applied, within 150 V-300 V] High surge capacity - 100 kA in all, the highest in the world Indicator function - first in the world, Domestically patented [Surge counter, Analog signal detection, Communication state detection, Battery life ≥ 10 years, Replaceable] Quadruple hybrid design - first in the world Reverse surge protection - first in the world Fastening by DIN-rail or Bolt Flame-retardant ABS case</p>
Type	Signal/Telecom Line 2-Wire Type (Serial)	
Capacity	100kA - total / 50kA - mode	

Application

4-20 mA Analog Signal Line, RS485, F-net Telecom Line, Load cell, Data Line, ADSL Modem Surge Protection



2-Wire Signal/Telecom

SPD Class	Category C1, C2, D1
Model	KOS-A-12DC [2-Wire Type]
Application	Data Line, Analog / Digital Signal Line, Telecom Line Protection
Application Field	RS 485 Telecom Line 4~20mA / 0~10V Analog Signal, Modem, RTU, PLC, SCADA, Load Cell etc



Electrical property

Rated voltage	Un	12V DC
Max Continuous Operating Voltage (MCOV)	Uc	15V DC
Nominal current		300 mA
Insulation resistance (@DC)	RIN	Above 20 MΩ
DC Loop resistance	R	Less than 50 Ω/1wire

Protection property

Protection mode		L1-L2	L1-G	L2-G
Voltage protection level Category C2 (@20kV/10kA Voltage 1,2/50μs, Current 8/20μs) – IEC 61643-21	Up	≤ 100V	≤ 150V	≤ 150V
Maximum discharge Current DM:0kA, CM:100kA (@Current 8/20μs)	I _{max}	0kA	50kA	50kA
Nominal discharge current (@Current 8/20μs)	I _n	20kA		
Response time (@10kV/μs)	t _a	Less than 5 ns		

Features

	Transmission property	Free of Voltage drop, Signal attenuation, Distortion
Common	Protection circuit	Four-stage hybrid protection circuit
	Protection method	Reverse surge protection
	Surge counter	Input surge counter display (1,000)
Indicator type	4~20mA analog SPD	Analog current display
	RS 485 communication SPD	RS 485 communication state display

Mechanical property

Protection rating level	IP20 (@IEC 60529), NEMA1
Operating temperature	-40 ~ 90°C
Operating humidity	Less than 95%
Size	(W)32 X (L)96 X (H)95 mm cf. p63
Installation	DIN-rail or Bolt fastening
Weight	Less than 300g

Test standard & Reference

- IEC 61643-21 [2015] Category A, B, C Performance and Test Criteria for Data/Telecom/Signal Line Surge Protector
- IEC 61643-12 [2017] Lightning Protection Zone 1, 2, 3
- IEC 62305-1,2,3,4 [2017]
- ANSI/IEEE Std C62.41 [2002] Category A, B, C
- ANSI/IEEE Std C62.64 [2009] Data/Telecom/Signal Surge Line Surge Protector standard test specification
- IEEE Std C62.36 [2016] Data/Telecom/Signal Line Surge Protector performance standard

*DM(Differential Mode[Differential Mode])=NM(Normal Mode[Normal Mode])=Symmetrical Mode
 *CM(Common Mode[Common Mode])=LM(Longitudinal Mode[Longitudinal Mode])=Asymmetrical Mode

Size

Signal/Telecom Line [2-Wire, 3-Wire, 4-Wire]



Model List

Indicator Type / Counter Type / Normal Type
(W)32 x (L)96 x (H)95

- | | | |
|-------------|---------------|-------------------------|
| | • KOS-A-5DC | : Data Line(5V) |
| | • KOS-A-12DC | : RS 485 Telecom Line |
| 2-Wire Type | • KOS-A-24DC | : 4~20mA Analog Line |
| | • KOS-A-48DC | : KT Private Modem Line |
| | • KOS-A-185DC | : KT ADSL, VDSL Line |
| <hr/> | | |
| 4-Wire Type | • KOS-B-12DC | : RS 422 Telecom Line |
| | • KOS-B-48DC | : KT Private Modem Line |
| | • KOS-B-185DC | : KT ADSL, VDSL Line |
| <hr/> | | |
| 3-Wire Type | • KOS-C-5DC | : RTD Sensor Line |
| | • KOS-C-24DC | : RS 232 Telecom Line |

[Unit : mm]

Indicator Type / Counter Type / Normal Type

