

Free Space Optical Communication

3. Parallel Communication

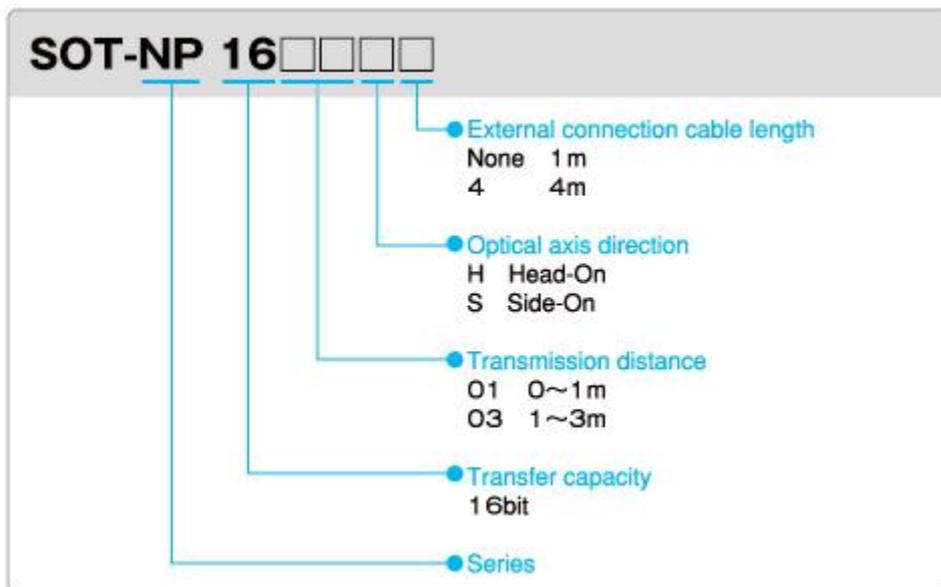
16-bit Communication SOT-NP16 Series

■ Feature

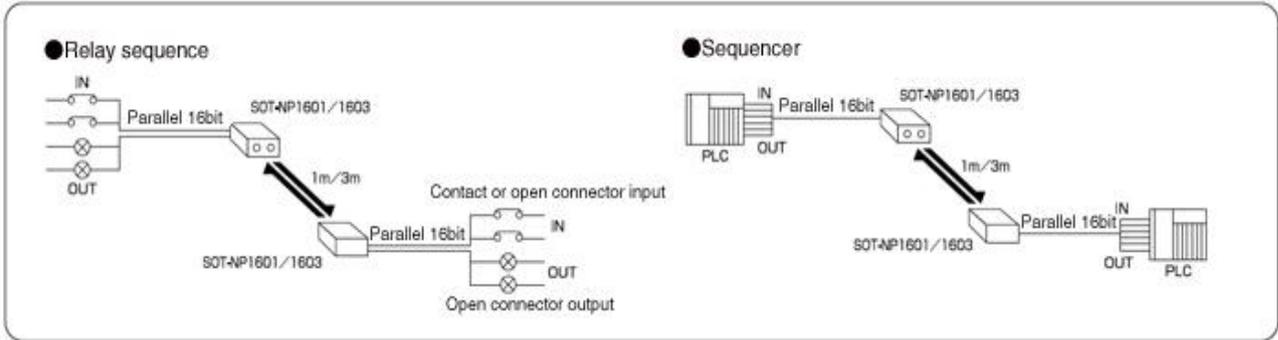
Supports 16 bit transfer points
There are two types of communication range: 0 to 1 meter, and 0 to 3 meters. Choose the one suited to your application. The device can be switched between two-way and one-way communication via operation-mode switch input. Display lamps are installed on top of the unit, making it possible to determine at a glance whether it is inputting (red) or outputting (green).



■ Model No. Descriptions



■ Sample System Configuration



Specifications

Model	SOT-NP1601H	SOT-NP1601S	SOT-1603H	SOT-1603S
Optical axis direction	Head-On	Side-On	Head-On	Side-On
Rated voltage	DC24V 10% or less ripple			
Operating voltage	DC18 – 30V Ripple			
Current consumption	100mA MAX			
Transfer distance	0 to 1m (with light intensity control knob set to MAX)		0 to 3m (with light intensity control knob set to MAX)	
Emitting direction	30 degrees or more (at 1m distance)		5 degrees or more (at 3m distance)	
No. of transfer bits	16 input bits and 16 output bits			
Transfer method	Semi-dual bi-directional or uni-directional			
Detection method	Continuous monitoring of bit status changes			
Transfer time	20ms max. (in M/S mode) or 30ms max. (in X mode)			
Sender element	Near infrared light emitting diode			
Receiver element	Photo-transistor			
Modulation method	Pulse width modulation			
Input data points	16 points			
	Input style : Photo-coupler insulation (sink input) Input signal : Contact or open collector Input voltage : 10 to 30 VDC (as measured between EXT+V and IN wires) Input current : 4 0.5mA (at 24 VDC) Residual voltage should be 2V or less with input current on and leaked current should be 0.5mA or less with input current off. See 7-1 "Input circuit".			
Input data points	16 points			
	Output style : Open collector output with non-insulated NPN transistor (sink output) Applied voltage : 4.5 to 30 VDC Applied current : 100mA/output max. Residual voltage should be 1.5V or less with output current on and total applied current should be 500mA or less. See 7-2 "Output circuit".			
Indicators	POW: Lights up (red) when power is on CTL/TCD: Lights up (red) when CTL input is on/lighted (green) when TCD input is on DT/RCV: Lights up (red) during successful data reception/lighted (green) during stable optical reception			

	IN: Lights up (red) when data input is on OUT: Lights up (green) when data output is on
Connection	With attached 1-m cable (standard) 18C $\times 0.14\text{mm}^2$ (AWG26) 26C $\times 0.14\text{mm}^2$ (AWG26)
Ambient operating temperature	-20 – +50 °C No freezing temperatures allowed.
Ambient operating humidity	40 – 85% RH No condensation allowed.
Ambient operating illumination	4,000lx or less for incandescent and fluorescent lamps No externally disturbed light shall directly enter the receiver.
Vibration resistance	10 to 55Hz in frequency, 1.5mm in complex amplitude and 5minutes for sweep 20 cycles in each of X, Y and Z directions
Shock resistance	500m/s ² , 20 cycles in each of X, Y and Z directions
Enclosure rating	IP64
Outside dimensions	90mm (W) $\times 90\text{mm}$ (D) $\times 20\text{mm}$ (H)