

# BioEntry P2

Guía de instalación de

Versión 1.02

Español

ES 101.00.BEP2 V1.02A

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# Instrucciones de seguridad

Lea estas instrucciones de seguridad antes de utilizar el producto para evitar lesiones personales y a otras personas, además de daños a la propiedad. El término "producto" en este manual se refiere al producto y a cualquier artículo que se entregue con el producto.

## Íconos de instrucciones



**Advertencia:** Este símbolo indica situaciones que pueden causar la muerte o lesiones graves.



**Precaución:** Este símbolo indica situaciones que pueden causar lesiones moderadas o daños a la propiedad.



**Nota:** Este símbolo indica notas o información adicional.



## Advertencia

### Instalación

**No instale ni repare el producto arbitrariamente.**

- Esto puede provocar descargas eléctricas, incendios o daños en el producto.
- Los daños causados por cualquier modificación o incumplimiento de las instrucciones de instalación pueden anular la garantía del fabricante.

**No instale el producto en un lugar con luz solar directa, humedad, polvo, hollín ni fuga de gas.**

- Esto puede provocar una descarga eléctrica o un incendio.

**No instale el producto en una ubicación con calor proveniente de un calefactor eléctrico.**

- Esto puede provocar un incendio debido a sobrecalentamiento.

**Instale el producto en una ubicación seca.**

- La humedad y los líquidos pueden provocar descargas eléctricas o daños en el producto.

**No instale el producto en un lugar donde se vea afectado por las frecuencias de radio.**

- Esto puede provocar un incendio o daños en el producto.

### Funcionamiento

**Mantenga el producto seco.**

- La humedad y los líquidos pueden provocar descargas eléctricas, incendios o daños en el producto.

**No utilice adaptadores de poder dañados, enchufes ni tomas eléctricas sueltas.**

- Las conexiones inseguras pueden provocar descargas eléctricas o incendios.

**No doble ni dañe el cable de alimentación.**

- Esto puede provocar una descarga eléctrica o un incendio.



## Precaución

### **Instalación**

**No instale el producto bajo la luz solar o la luz UV directas.**

- Esto puede causar daños, mal funcionamiento, decoloración o deformación del producto.

**No instale el cable de la fuente de alimentación en una ubicación por el que pasen personas.**

- Esto puede causar lesiones o daños al producto.

**No instale el producto cerca de objetos altamente magnéticos, como imanes, televisores, monitores (especialmente, los que cuentan con tubos de rayos catódicos) o altavoces.**

- Es posible que el producto no funcione correctamente.

**Mantenga las distancias mínimas entre los productos cuando instale varios de ellos.**

- Es posible que el producto esté afectado por frecuencias de radio emitidas por otros productos y que no funcione correctamente.

**Utilice sólo un adaptador de fuente de alimentación de 12 V DC y 1,500 mA o superior.**

- Si no se utiliza la fuente de alimentación adecuada, el producto podría presentar fallas.

**Utilice una fuente de alimentación independiente para el Secure I/O 2, la cerradura eléctrica y el producto.**

- Si se conecta y utiliza la misma fuente de alimentación, es posible que el producto no funcione correctamente.

### **Funcionamiento**

**No deje caer el producto ni lo someta a impactos.**

- Es posible que el producto no funcione correctamente.

**No desconecte la fuente de alimentación mientras actualiza el firmware del producto.**

- Es posible que el producto no funcione correctamente.

**No divulgue la contraseña a otras personas y cámbiela regularmente.**

- Esto puede provocar una intromisión ilegal.

**No presione los botones del producto con fuerza ni los presione con una herramienta afilada.**

- Es posible que el producto no funcione correctamente.

**No almacene el producto en lugares muy calientes ni muy fríos. Se recomienda utilizar el producto a temperaturas entre -20°C y 50°C.**

- Es posible que el producto no funcione correctamente.

**Cuando limpie el producto, tenga en cuenta los siguientes procedimientos.**

- Limpie el producto con una toalla limpia y seca.
- Si necesita desinfectar el producto, humedezca el paño o la toallita con una cantidad adecuada de alcohol isopropílico y limpie con suavidad todas las superficies expuestas, incluido el sensor de huellas dactilares. Utilice alcohol isopropílico (que contenga un 70 % de alcohol isopropílico) y un paño limpio y no abrasivo, como un paño para limpiar la lente.
- No aplique líquido directamente sobre la superficie del producto.

**No utilice el producto para ningún otro uso que no sea el previsto.**


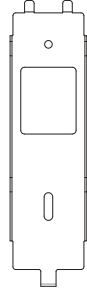
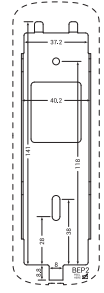
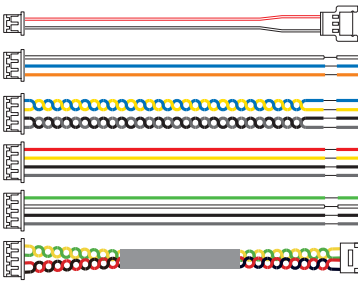
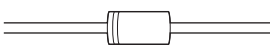

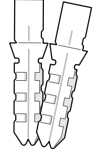
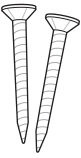

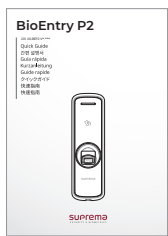

- Es posible que el producto no funcione correctamente.

### **Batería RTC**

Reemplazar la batería por una de un tipo incorrecto podría provocar una explosión. Deseche las baterías de acuerdo con las normas regionales o internacionales correspondientes en materia de residuos.

# Introducción

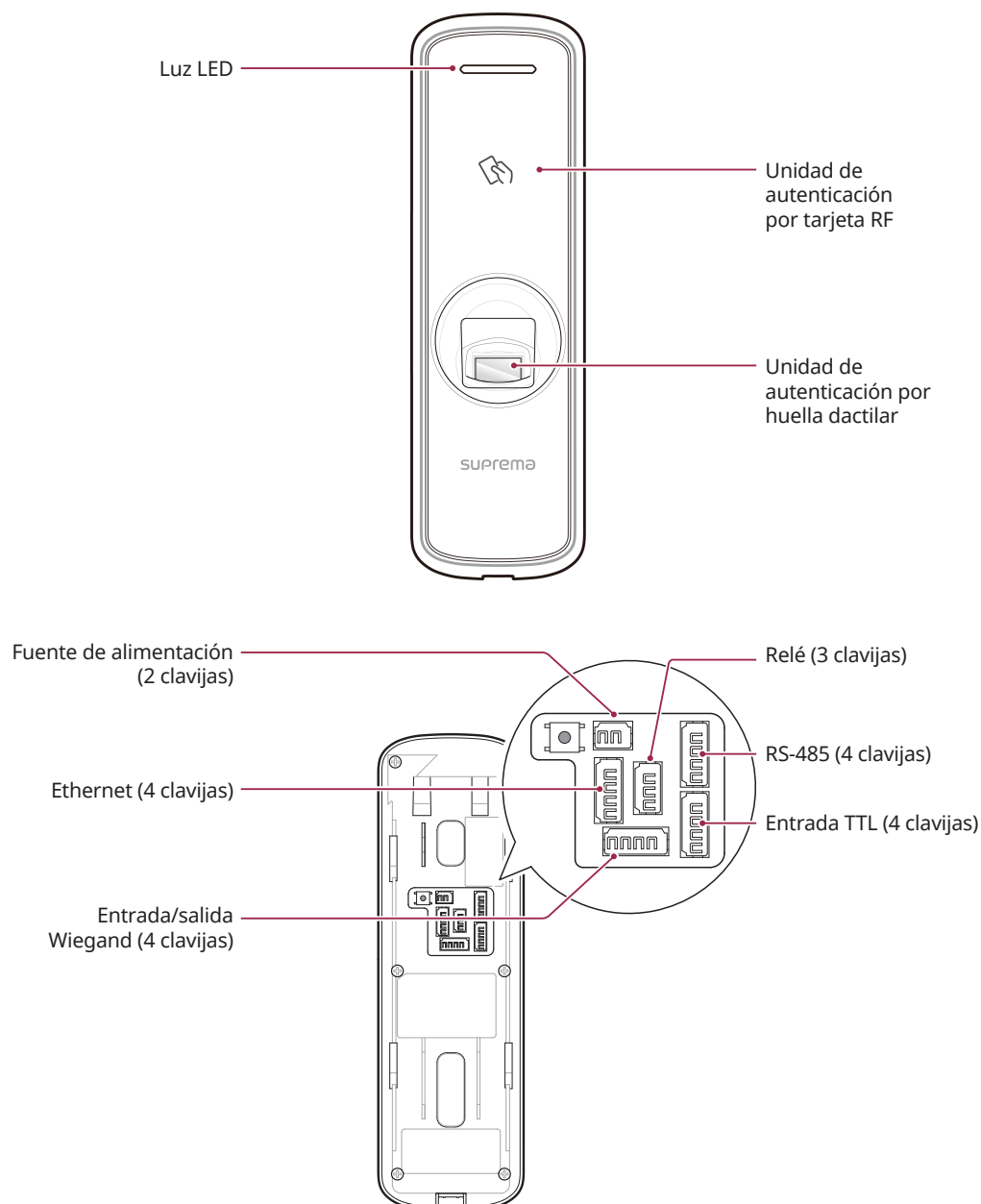
## Componentes

			
<p>BioEntry P2</p>	<p>Soporte de pared</p>	<p>Plantilla de perforación</p>	
			
<p>Cable de conexión</p>	<p>Diodo</p>	<p>Resistencia de 120 <math>\Omega</math></p>	<p>Anclaje de PVC x 2</p>
			
<p>Tornillo de fijación x 2</p>	<p>Tornillo de fijación del soporte (Tipo estrella)</p>	<p>Guía rápida</p>	<p>Guía de software de código abierto</p>



Los componentes podrían variar según el entorno de instalación.

## Nombre y función de cada pieza



Nombre	Descripción
<b>Luz LED</b>	Indica el estado de funcionamiento del producto con el color de la luz LED.
<b>Unidad de autenticación por tarjeta RF</b>	Lee las tarjetas RF para entrar y salir.
<b>Unidad de autenticación por huella dactilar</b>	Lee las huellas dactilares ubicadas en este para entrar y salir.
<b>Fuente de alimentación (2 clavijas)</b>	Permite conectar el cable de la fuente de alimentación.
<b>Relé (3 clavijas)</b>	Permite conectar el cable del relé.
<b>Ethernet (4 clavijas)</b>	Permite conectar el cable Ethernet.
<b>RS-485 (4 clavijas)</b>	Permite conectar el cable RS-485.
<b>Entrada TTL (4 clavijas)</b>	Permite conectar el cable de entrada TTL.

Entrada/salida Wiegand (4 clavijas)	Permite conectar el cable de entrada y salida Wiegand.
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## Cables y conectores

### Fuente de alimentación



Clavija	Nombre	Color
1	PWR +VDC	Rojo (banda blanca)
2	PWR GND	Negro (banda blanca)

### Relé



Clavija	Nombre	Color
1	RLY NO	Blanco
2	RLY COM	Azul
3	RLY NC	Naranja

### RS-485



Clavija	Nombre	Color
1	485 TRXP	Azul
2	485 TRXN	Amarillo
3	485 GND	Negro
4	SH GND	Gris

## Entrada TTL



Clavija	Nombre	Color
1	TTL IN0	Rojo
2	TTL IN1	Amarillo
3	TTL GND	Negro
4	SH GND	Gris

## Entrada y salida Wiegand



Clavija	Nombre	Color
1	WG D0	Verde
2	WG D1	Blanco
3	WG GND	Negro
4	SH GND	Gris

## Ethernet



Clavija	Nombre	Color
1	ENET RXN	Amarillo
2	ENET RXP	Verde
3	ENET TXN	Rojo
4	ENET TXP	Negro

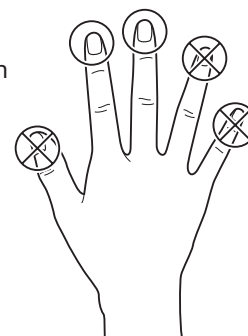


## Cómo enrolar una huella dactilar

Para mejorar la velocidad de autenticación de huellas dactilares, regístrelas correctamente. BioEntry P2 puede reconocer una huella dactilar incluso si cambia el ángulo y la posición de la entrada de la huella dactilar de un usuario. Si en el momento de enrolar una huella dactilar presta atención a los siguientes detalles, podrá mejorar la velocidad de autenticación.

### Selección de un dedo para el ingreso de la huella dactilar

- En preparación para una situación en la que no se pueda utilizar la huella de un dedo específico; por ejemplo, si el usuario tiene una mano ocupada o si se hiere un dedo, se pueden enrolar hasta 10 huellas para cada usuario.
- En el caso de un usuario cuya huella dactilar no se pueda reconocer bien, la tasa de autenticación se puede mejorar si se enrola el mismo dedo dos veces.
- Si un dedo tiene un corte o la huella dactilar está borrosa, seleccione otro dedo para la huella dactilar.
- Se recomienda utilizar el dedo índice o el dedo medio al escanear la huella. La tasa de autenticación se puede reducir si es difícil colocar con precisión otro dedo en el centro del sensor de huellas.



### Método de enrolamiento de la huella dactilar

- 1 Coloque el dedo con la huella dactilar que desea enrolar en la unidad de autenticación de huellas dactilares y presione el dedo suavemente para lograr una mejor autenticación.



- 2 Después del pitido, vuelva a escanear la huella del dedo registrado (debe escanear dos veces la huella dactilar de un dedo para registrarla).



#### Precauciones cuando se enrola una huella dactilar

Cuando se reconoce la huella dactilar, se compara con la huella registrada inicialmente, por lo que el enrolamiento inicial de la huella dactilar es el más importante. Preste atención a las siguientes recomendaciones cuando enrola una huella.

- Coloque el dedo presionándolo lo suficiente como para que entre en contacto por completo con el sensor.
- Coloque el centro de la huella dactilar en el centro del sensor.
- Si un dedo tiene un corte o la huella dactilar está borrosa, seleccione otro dedo para la huella dactilar.
- Escanee la huella dactilar correctamente sin moverla, según las instrucciones de la pantalla.
- Si coloca el dedo en posición vertical y el área de contacto con el sensor disminuye o el ángulo del dedo se deforma, la autenticación de huella dactilar podría no realizarse.



#### Cuando falla el reconocimiento de la huella dactilar

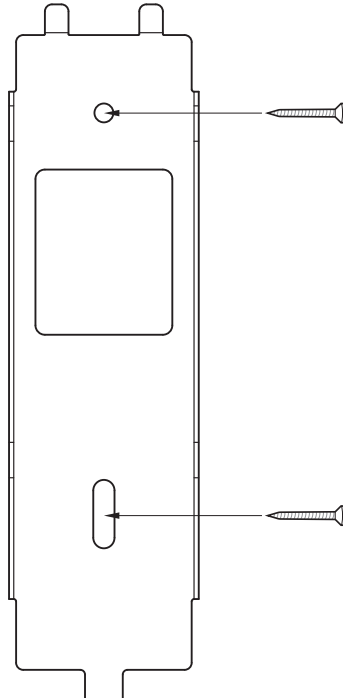
BioEntry P2 puede reconocer una huella dactilar independientemente del cambio de estación o del estado del dedo. Sin embargo, la velocidad de autenticación podría variar según el ambiente externo o el método de entrada de la huella dactilar. Si la autenticación de la huella dactilar presenta problemas, se recomienda tomar las siguientes medidas.

- Si el dedo tiene residuos de agua o sudor, séquelo y luego escanéelo.
- Si el dedo está demasiado seco, sople suavemente sobre las yemas de los dedos y luego escanéelo.
- Si el dedo presenta un corte, registre la huella dactilar de otro dedo.
- Con frecuencia, la huella dactilar inscrita inicialmente podría no escanearse correctamente, en cuyo caso deberá volver a registrarse de acuerdo con lo indicado en **Precauciones cuando se enrola una huella dactilar**.

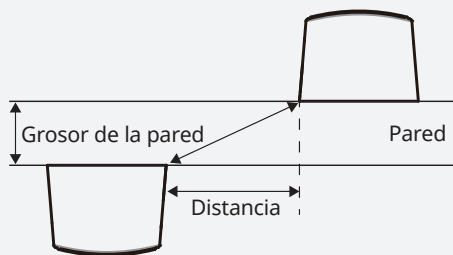
# Instalación

## Fijación del soporte y del producto

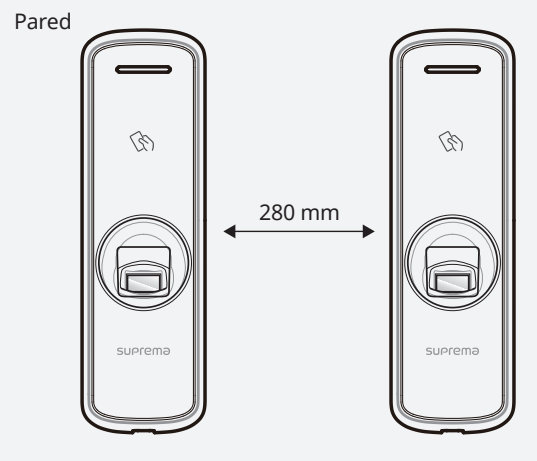
- 1 Determine la posición correcta para instalar el soporte mediante la plantilla de taladrado que se proporciona. Fije con firmeza el soporte con tornillos de fijación a través del soporte hasta la posición en la que va a instalar BioEntry P2.



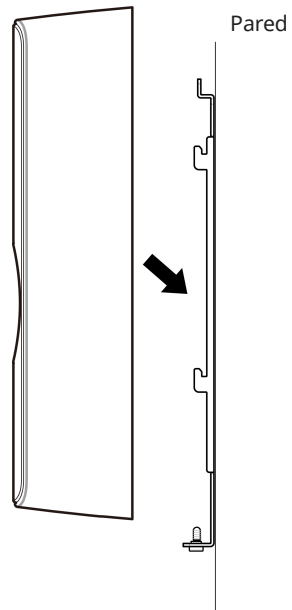
- Si instala BioEntry P2 en una pared de concreto, perfora orificios, inserte los anclajes de PVC y fíjelos con los tornillos de fijación.
- Para evitar interferencias de RF, se debe mantener una distancia mínima de separación.



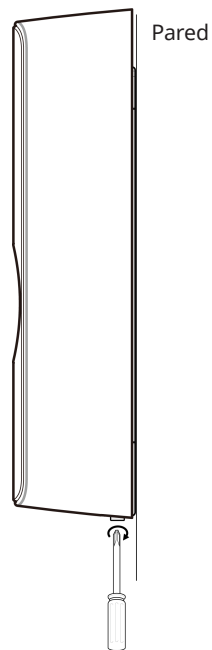
Grosor de la pared	Distancia
100 mm	250 mm
120 mm	250 mm
150 mm	180 mm



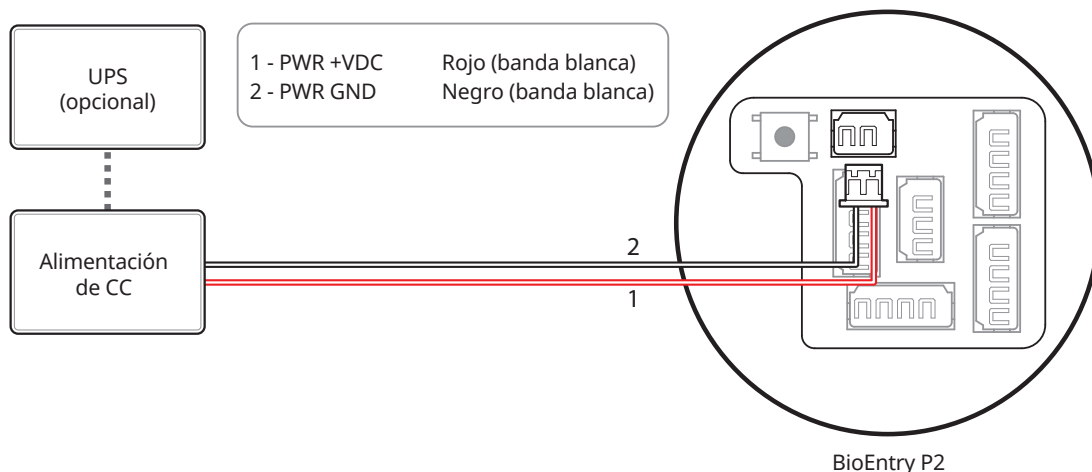
**2** Instale BioEntry P2 en el soporte que fijó.



**3** Conecte BioEntry P2 al soporte girando el tornillo de fijación del producto.



## Conexión de los cables

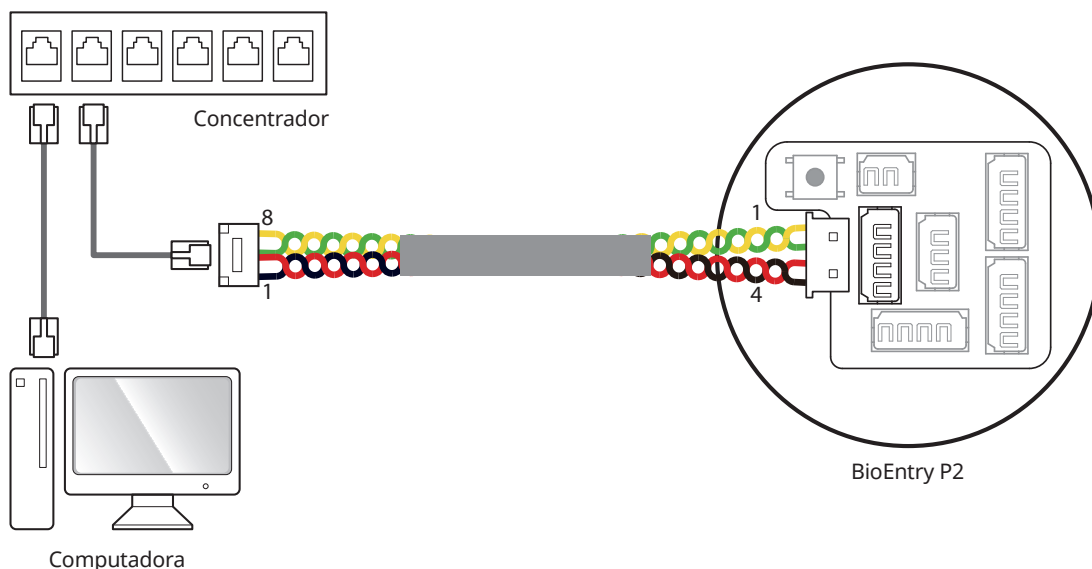


- Utilice un adaptador de alimentación de CC de 12 V ( $\pm 10\%$ ) con un mínimo de 1500 mA con la aprobación de IEC/EN 62368-1. Si desea conectar y utilizar otro dispositivo con la misma fuente de alimentación, debe utilizar un adaptador con una capacidad de corriente igual o superior al consumo total de energía necesario para ambos dispositivos.
- Utilice una fuente de alimentación independiente para Secure I/O 2, la cerradura eléctrica y BioEntry P2, respectivamente. Si conecta y utiliza la misma fuente de alimentación para estos dispositivos podrían funcionar incorrectamente.

## Conexión de red

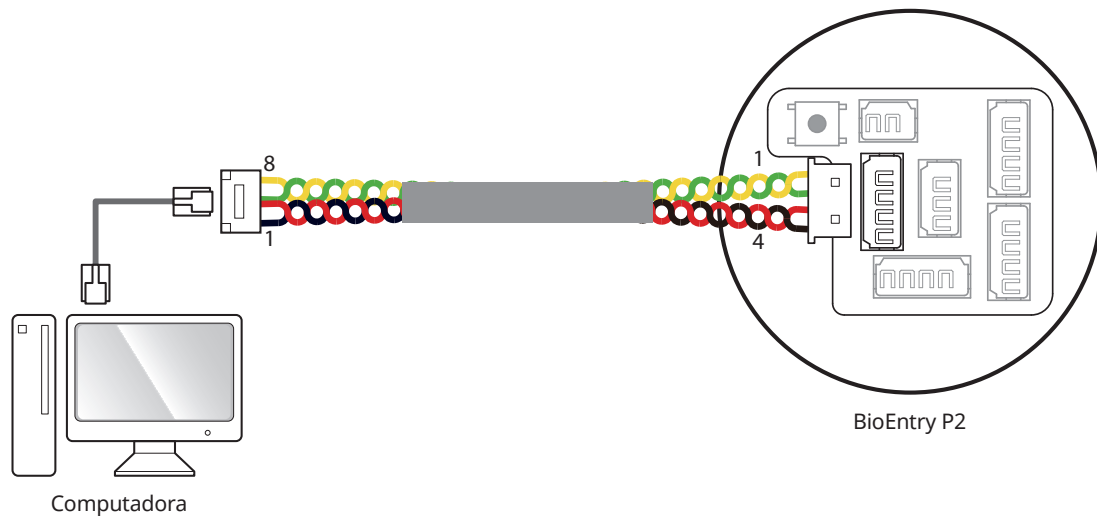
### Conexión LAN (conexión a un concentrador)

Puede conectar el producto a un concentrador mediante un cable CAT-5e de tipo general.

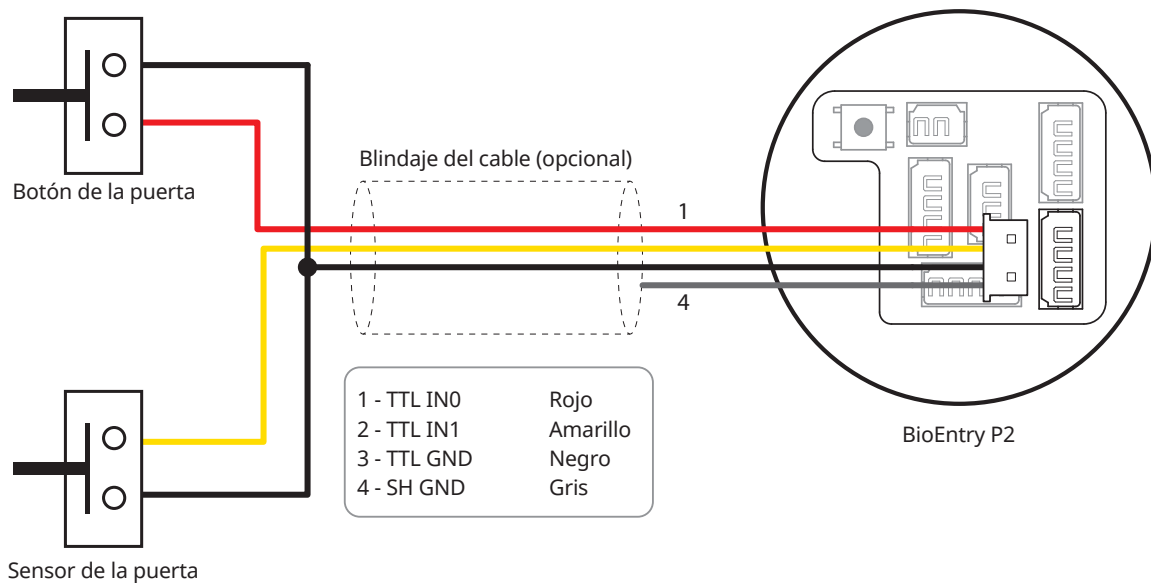


### Conexión LAN (conexión directa a una computadora)

BioEntry P2 tiene una función MDI/MDIX automática que permite conectarlo directamente a una computadora mediante un cable recto normal tipo CAT- 5e, no un cable cruzado.



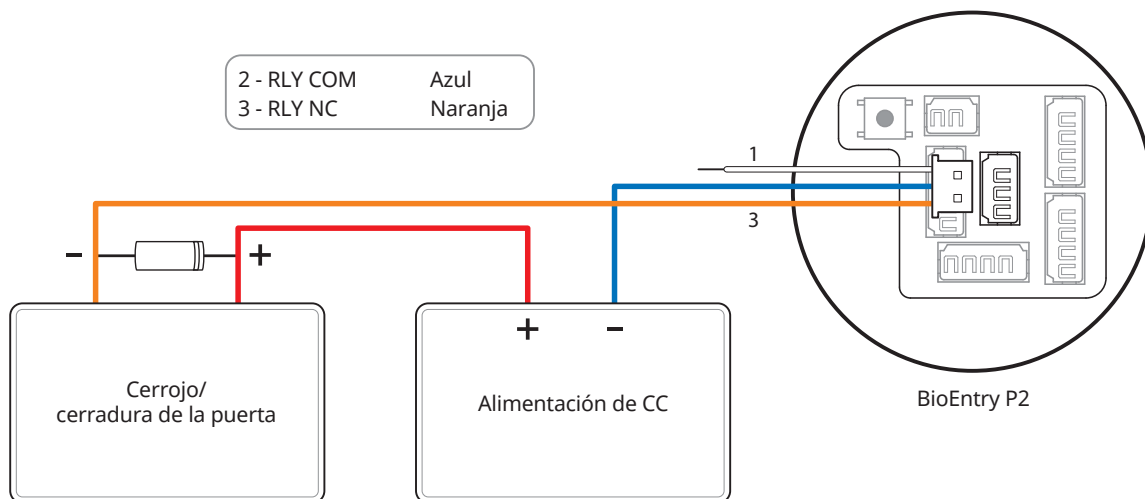
### Conexión de entrada TTL



## Conexión del relé

### Bloqueo a prueba de fallas

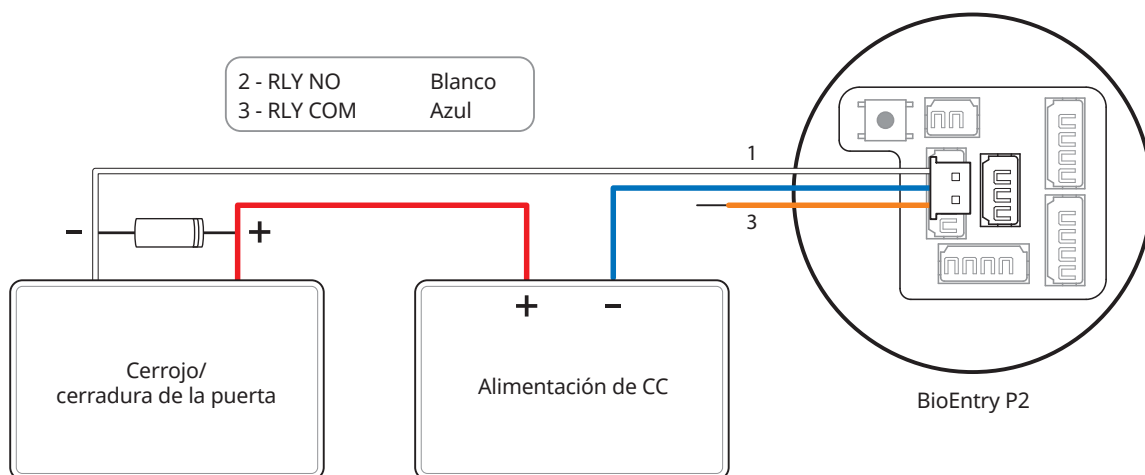
Para utilizar el bloqueo a prueba de fallas, conecte el relé normalmente cerrado como se muestra en la figura siguiente. Normalmente, hay una corriente que fluye a través del relé para el bloqueo a prueba de fallas. Cuando el relé se activa, bloqueando el flujo de corriente, la puerta se abre. Si la fuente de alimentación del producto se corta debido a una falla de la alimentación o a un factor externo, la puerta se abre.



- Instale un diodo a ambos lados del cable de la cerradura de la puerta como se muestra en la figura para proteger el relé de la corriente inversa, que se produce cuando funciona la cerradura de la puerta.
- Tenga cuidado con la dirección de instalación del diodo. Instale el diodo cerca de la cerradura de la puerta.
- Utilice una fuente de alimentación independiente para BioEntry P2 y la cerradura de la puerta.
- Los lectores inteligentes independientes de Suprema contienen relés internos que pueden bloquear o desbloquear directamente las puertas sin controladores externos para mayor comodidad. Para las aplicaciones de control de acceso que necesitan seguridad; sin embargo, NO se recomienda utilizar el relé interno de un lector para evitar cualquier ataque de manipulación que pueda activar el desbloqueo de la puerta. Para dichas aplicaciones, se recomienda encarecidamente utilizar una unidad de relé independiente para un control de bloqueo, como las Secure I/O 2, DM-20 o CoreStation de Suprema instaladas en un lado seguro de la puerta.

### Bloqueo seguro contra fallas

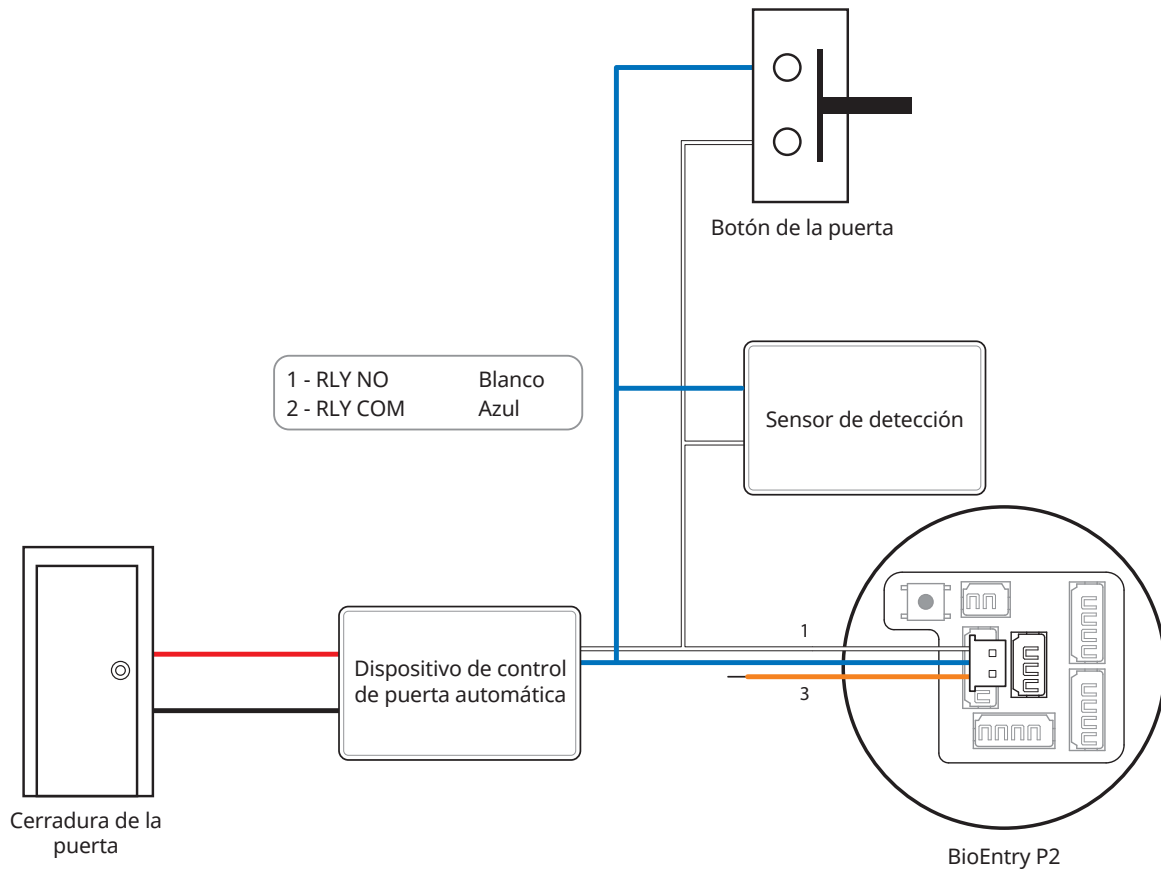
Para utilizar el bloqueo seguro contra fallas, conecte el relé normalmente abierto como se muestra en la figura siguiente. Normalmente no hay flujo de corriente a través del relé para el bloqueo seguro contra fallas. Cuando el relé activa el flujo de corriente, la puerta se abre. Si la fuente de alimentación del producto se corta debido a una falla de la alimentación o a un factor externo, la puerta se bloquea.



- Instale un diodo a ambos lados del cable de la cerradura de la puerta como se muestra en la figura para proteger el relé de la corriente inversa, que se produce cuando funciona la cerradura de la puerta.
- Tenga cuidado con la dirección de instalación del diodo. Instale el diodo cerca de la cerradura de la puerta.
- Utilice una fuente de alimentación independiente para BioEntry P2 y la cerradura de la puerta.
- Los lectores inteligentes independientes de Suprema contienen relés internos que pueden bloquear o desbloquear directamente las puertas sin controladores externos para mayor comodidad. Para las aplicaciones de control de acceso que necesitan seguridad; sin embargo, NO se recomienda utilizar el relé interno de un lector para evitar cualquier ataque de manipulación que pueda activar el desbloqueo de la puerta. Para dichas aplicaciones, se recomienda encarecidamente utilizar una unidad de relé independiente para un control de bloqueo, como las Secure I/O 2, DM-20 o CoreStation de Suprema instaladas en un lado seguro de la puerta.

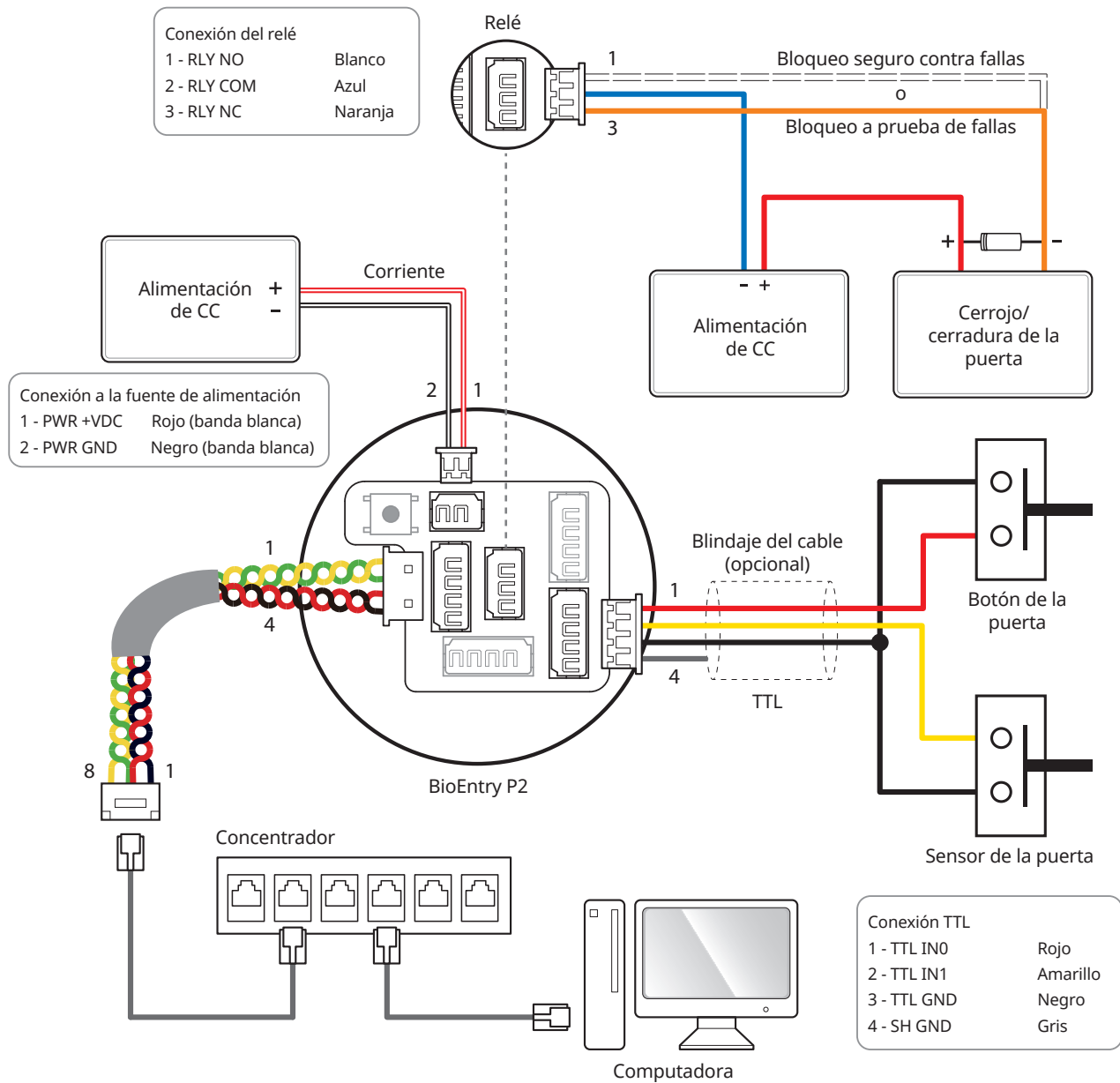


### Conexión de puerta automática



## Conexión Autónoma (Standalone)

BioEntry P2 se puede conectar directamente a la cerradura de la puerta, al botón de la puerta y al sensor de la puerta sin conectar un dispositivo de E/S independiente.

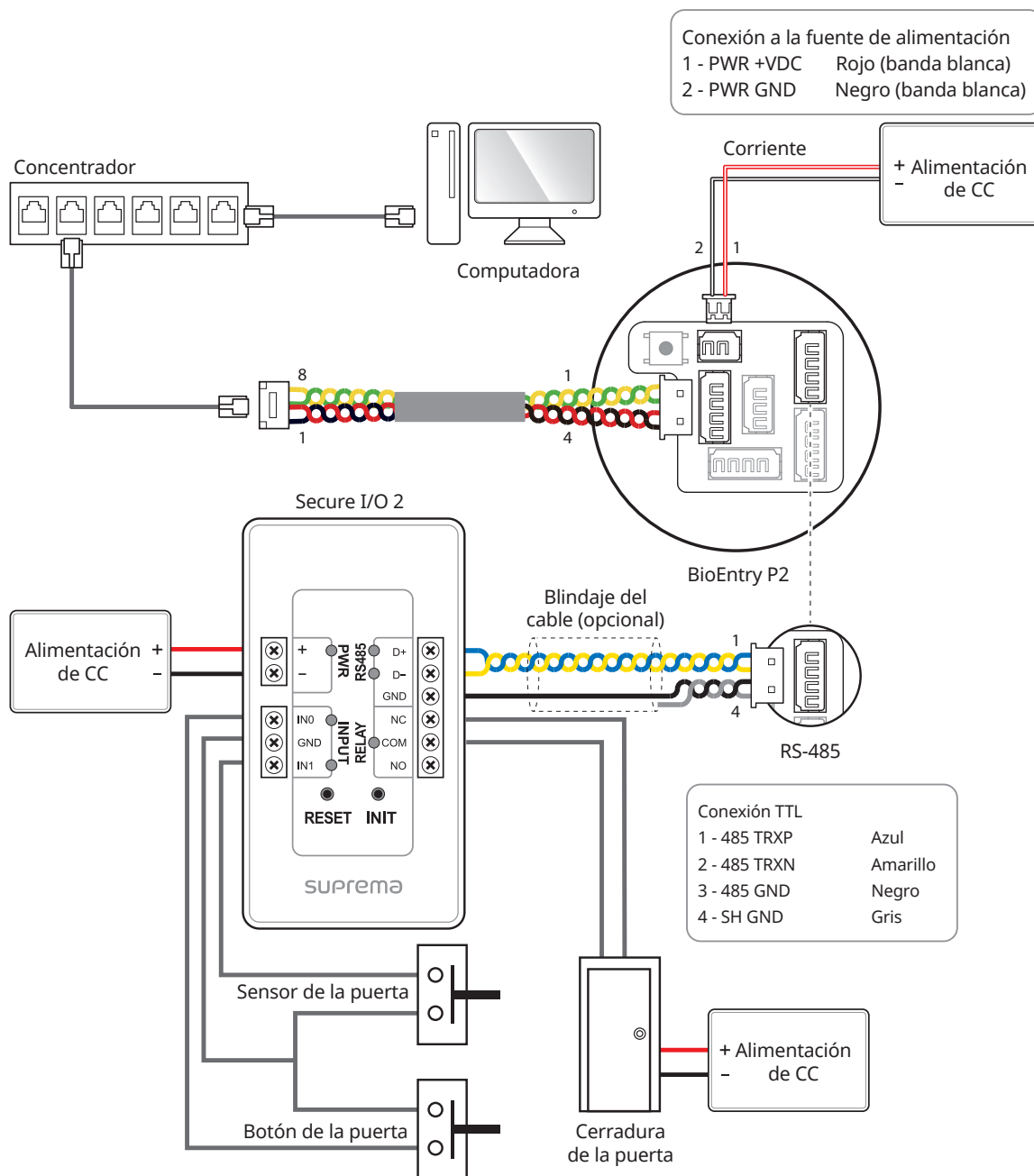


- BioEntry P2 se puede utilizar para controlar varias puertas con dispositivos esclavos con el cable RS485. Los dispositivos esclavos se utilizan como lectores solamente y la autenticación se realiza en el dispositivo maestro.
- Si Xpass está conectado al dispositivo maestro, solo se puede utilizar la autenticación con tarjeta.
- La cantidad máxima de dispositivos esclavos disponibles para conectar varía según el método de autenticación, la cantidad de usuarios y la cantidad de dispositivos. Además, se debe tener en cuenta que la cantidad de dispositivos esclavos afecta la velocidad de autenticación de la huella dactilar.
- Un dispositivo maestro puede controlar 31 dispositivos esclavos. El ancho de banda de RS485 permite conectar hasta 7 dispositivos de autenticación de huellas dactilares.
- Los lectores inteligentes independientes de Suprema contienen relés internos que pueden bloquear o desbloquear directamente las puertas sin controladores externos para mayor comodidad. Para las aplicaciones de control de acceso que necesitan seguridad; sin embargo, NO se recomienda utilizar el relé interno de un lector para evitar cualquier ataque de manipulación que pueda activar el desbloqueo de la puerta. Para dichas aplicaciones, se recomienda encarecidamente utilizar una unidad de relé independiente para un control de bloqueo, como las Secure I/O 2, DM-20 o CoreStation de Suprema instaladas en un lado seguro de la puerta.
- Para obtener más información, comuníquese con el equipo de asistencia técnica de Suprema (<http://support.supremainc.com>).

## Conexión a Secure I/O 2

Secure I/O 2 es un dispositivo de E/S que se puede conectar a BioEntry P2 con un cable RS-485. La seguridad se puede mantener incluso si se pierde la conexión entre BioEntry P2 y Secure I/O 2 o si se apagó la fuente de alimentación de BioEntry P2 debido a factores externos.

- Utilice un cable de par trenzado AWG24 con una longitud máxima de 1.2 km para el cable RS-485.
- Si se enlaza con una conexión en cadena RS-485, conecte la resistencia de terminación (120 Ω) a ambos extremos de la conexión en cadena. Si la conexión se realiza a la línea central, el nivel de la señal se reduce y el rendimiento de las comunicaciones se deteriora. Asegúrese de realizar la conexión en ambos extremos del enlace en cadena.

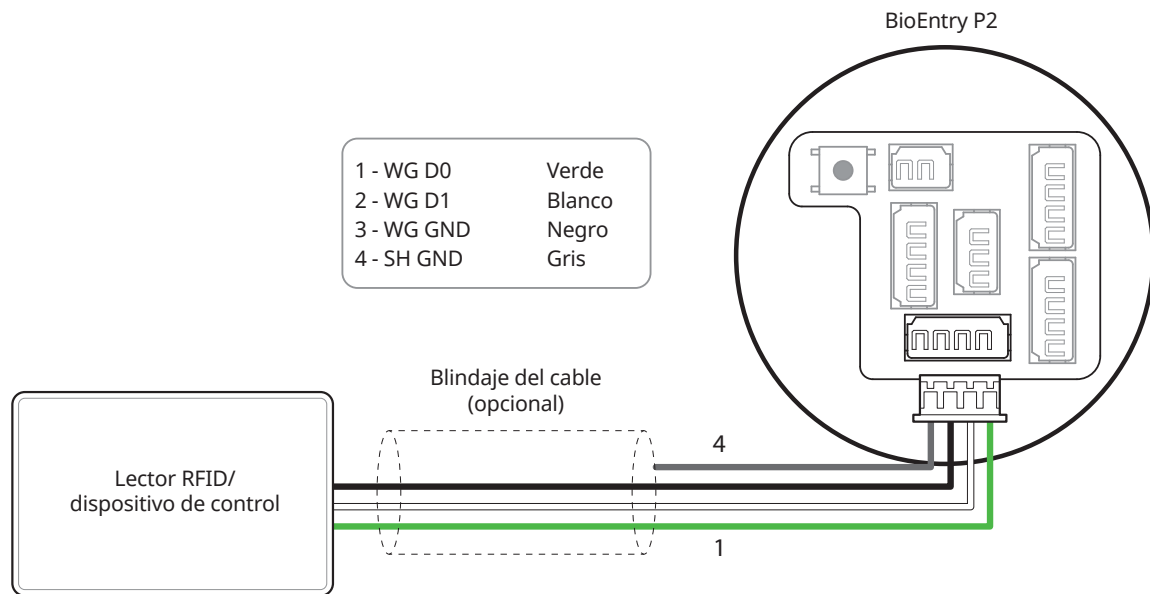


- BioEntry P2 se puede utilizar para controlar varias puertas con dispositivos esclavos con el cable RS485. Los dispositivos esclavos se utilizan como lectores solamente y la autenticación se realiza en el dispositivo maestro.
- Si Xpass está conectado al dispositivo maestro, solo se puede utilizar la autenticación con tarjeta.
- La cantidad máxima de dispositivos esclavos disponibles para conectar varía según el método de autenticación, la cantidad de usuarios y la cantidad de dispositivos. Además, se debe tener en cuenta que la cantidad de dispositivos esclavos afecta la velocidad de autenticación de la huella dactilar.

- Un dispositivo maestro puede controlar 31 dispositivos esclavos. El ancho de banda de RS485 permite conectar hasta 7 dispositivos de autenticación de huellas dactilares.
- Para obtener más información, comuníquese con el equipo de asistencia técnica de Suprema (<http://support.supremainc.com>).

## Conexión Wiegand

Utilizar como dispositivo de entrada/salida Wiegand



## Restablecer la configuración de la red

- 1 Conecte la alimentación.
- 2 Presione el botón de restablecimiento de red en la parte posterior del dispositivo hasta que el dispositivo se reinicie automáticamente.
- 3 Conecte el dispositivo con los valores predeterminados.
  - Dirección TCP/IP: Asignación de la dirección DHCP (si falla la asignación de la dirección DHCP, se establece 169.254.x.x)
  - Modo de servidor: Desactivado
  - RS-485: Valor predeterminado, 115,200 bps
- 4 Cambie la dirección TCP/IP o la información de RS-485.
- 5 Deconecte la alimentación posteriormente y compruebe que la configuración de red sea la correcta.

## Restauración de los valores predeterminados de fábrica

Esto elimina todos los datos y el certificado raíz del dispositivo, y restablece la configuración.

- 1 Conecte la alimentación.
- 2 Presione el botón de reinicio tres veces rápidamente.
- 3 Cuando el LED amarillo parpadee, vuelva a presionar el botón de reinicio.



Si no hay ningún certificado raíz en el dispositivo, no puede restaurar los valores predeterminados de fábrica.

# Especificaciones del producto

Categoría	Característica	Especificación	
		BEP2-OD	BEP2-OA
Credencial	Biometría	Huella dactilar	
	Opción de la tarjeta LF	EM	EM y HID Prox
	Opción de la tarjeta HF	MIFARE, MIFARE Plus, DESFire EV1/ EV2*, FeliCa	MIFARE, MIFARE Plus, DESFire EV1/ EV2*, FeliCa, iCLASS SE/SR/Seos
	Tarjeta NFC	Soportado	
	Rango de lectura de RF**	MIFARE/DESFire/EM/HID Prox/iCLASS: 50 mm, FeliCa: 30 mm	
General	CPU	1.0 GHz	
	Memoria	Memoria flash de 8 GB + 64MB de RAM	
	Chip criptográfico	Soportado	
	LED	Multi-color	
	Sonido	Timbre de varios tonos	
	Temperatura de funcionamiento	-20°C - 50°C	
	Temperatura de almacenamiento	-40°C - 70°C	
	Humedad en almacenamiento	0 % - 80 %, sin condensación	
	Storage humidity	0 % - 90 %, sin condensación	
	Dimensión (ancho x alto x largo)	50 x 164 x 37.5 (mm)	
	Peso	<ul style="list-style-type: none"> <li>Dispositivo: 162 g</li> <li>Soporte (incluye arandela y tornillo): 39 g</li> </ul>	
	Certificaciones	CE, FCC, KC, RoHS, REACH, WEEE	
	Huella dactilar	Dimensión de la imagen	272 x 320 pixeles
Profundidad de bits de la imagen		8 bits, 256 tonos de la escala de grises	
Resolución		500 dpi	
Plantilla		SUPREMA / ISO19794-2 / ANSI-378	
Extractor		Con certificación y compatible con MINEX	
Capacidad	Máximo de usuarios	10,000	
	Máximo de credencial (1:N)	Huella dactilar: 10,000	
	Máximo de credencial (1:1)	<ul style="list-style-type: none"> <li>Huella dactilar: 10,000</li> <li>Tarjeta: 10,000</li> <li>PIN: 10,000</li> </ul>	
	Máximo de registro de texto	1,000,000	
	Registro de imágenes máximo	No soportado	
Interfaz	Ethernet	Compatible (10/100 Mbps, MDI/MDI-X automática)	
	RS-485	1 canal maestro/esclavo (seleccionable)	
	Wiegand	1 canal de entrada/salida (seleccionable)	
	Entrada TTL	Entrada de 2 canales	
	Relé	1 relé	
	Seguro contra alteraciones (Tamper)	Soportado	

Eléctrica	Alimentación	<ul style="list-style-type: none"> <li>• Corriente: DC 12 V (Máx. 600 mA)</li> <li>• Especificaciones recomendadas para el adaptador: DC 12 V (<math>\pm</math> 10%) con un mínimo de 1.5 A***</li> </ul>
	Entrada del interruptor VIH	Mínimo 3 V / Máximo 5 V
	Entrada del interruptor VIL	Máximo de 1 V
	Interruptor de resistencia de polarización	4.7 k $\Omega$ (los puertos de entrada se polarizan con 4.7 k $\Omega$ )
	Salida Wiegand VOH	Mínimo 4.8 V
	Salida Wiegand VOL	Máximo 0.2 V
	Resistencia de polarización de la salida Wiegand	Polarización interna con 1 k $\Omega$
	Relé	1 A @ 30 VDC Resistive load

\* Las tarjetas DESFire EV2 se pueden usar con tarjetas de compatibilidad retroactiva de DESFire EV1. Las funciones de CSN y de tarjeta inteligente son compatibles con X-Station 2.

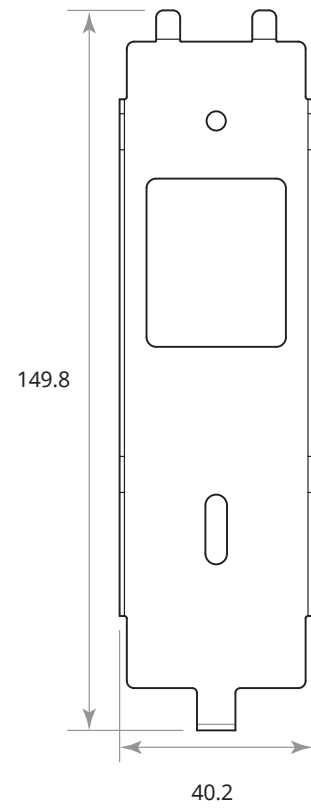
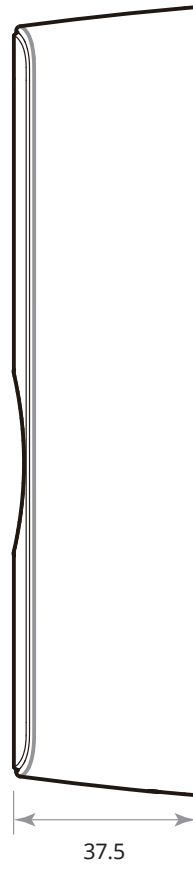
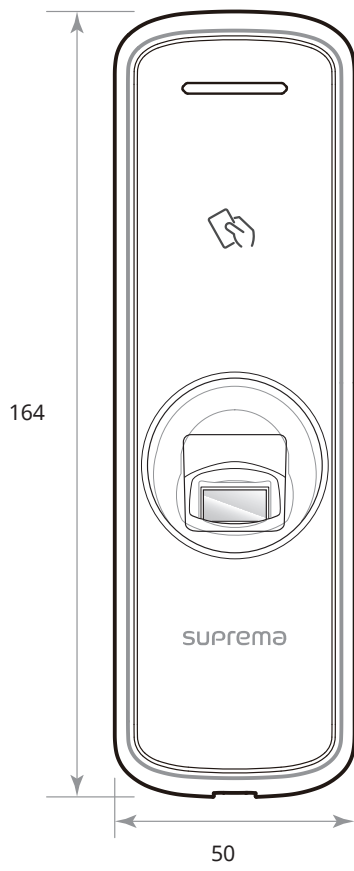
\*\* El rango de lectura de RF varía según el entorno de instalación.

\*\*\* El adaptador se vende por separado. Consulte las especificaciones recomendadas.

## Dimensiones

(Unidad: mm)

\* La tolerancia es de  $\pm 0.3$  mm.





# Información de cumplimiento de la FCC

ESTE DISPOSITIVO CUMPLE CON LA PARTE 15 DEL REGLAMENTO DE LA FCC.

El funcionamiento está sujeto a las siguientes dos condiciones:

- (1) Este dispositivo no puede causar interferencia perjudicial, y
- (2) Este dispositivo debe aceptar cualquier interferencia recibida, incluidas las interferencias que puedan causar un funcionamiento no deseado.



Este equipo ha sido probado y cumple con los límites para un dispositivo digital Clase B, en conformidad con la parte 15 del reglamento de la FCC. Estos límites están diseñados para proporcionar una protección razonable contra la interferencia perjudicial en una instalación residencial. Este equipo genera, utiliza y puede irradiar energía de radiofrecuencia y, si no se instala y utiliza de acuerdo con las instrucciones, podría causar interferencias perjudiciales en las comunicaciones de radio. Sin embargo, no hay garantía de que no se produzcan interferencias en una instalación determinada. Si este equipo causa interferencia perjudicial en la recepción de radio o televisión, lo que se puede determinar apagando y encendiendo el equipo, se recomienda al usuario que intente corregir la interferencia mediante una o varias de las siguientes medidas:

- Reoriente o reubique la antena receptora.
- Aumente la separación entre el equipo y el receptor.
- Conecte el equipo a una toma de corriente de un circuito distinto al que está conectado el receptor.
- Consulte al distribuidor o a un técnico experimentado en radio/televisión para obtener ayuda.

Las modificaciones no aprobadas expresamente por el fabricante podrían anular la autoridad del usuario para hacer funcionar el equipo de acuerdo con el reglamento de la FCC.

- Este aparato y su antena no se deben ubicar juntos ni se deben operar junto con otras antenas o transmisores.
- Se debe mantener una distancia mínima de separación de 20 cm entre la antena y las personas para que el aparato cumpla con los requisitos de exposición a RF.

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Version 3, 29 June 2007

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