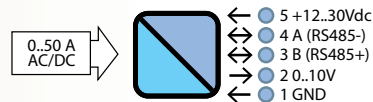
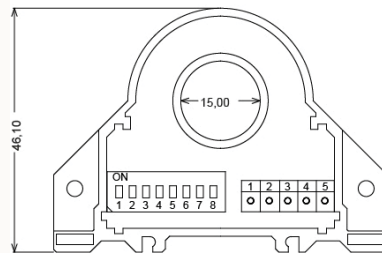
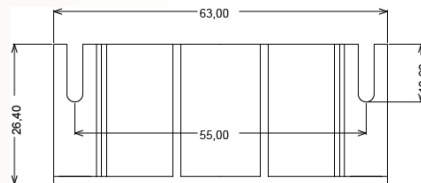
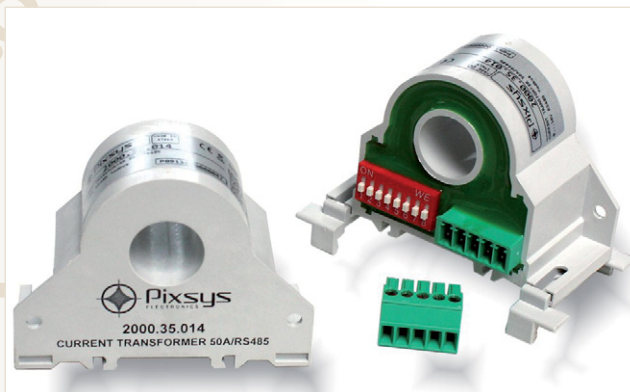
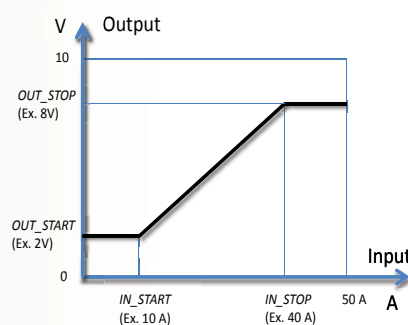


# Current Transformer AC/DC TRMS - RS485 MODBUS 2000.35.014

The 2000.35.014 is a AC/DC current transformer, galvanically isolated from the measuring circuit. The device is in the function and appearance is very similar to a standard active TA, however, able to measure the DC component and AC TRMS. The transformer is equipped with RS485 Modbus serial output and an analog output 0-10V. Through the serial port can be configured freely span and zero and assign the Modbus address.



2000.35.014 INPUT/OUTPUT (example)



**POWER SUPPLY** 12 .. 30Vdc, Protection against polarity reversal and overtemperature.

**ABSORPTION** Max 20mA

**PROTECTION INDEX** IP20

**ACCURACY** 0,5% F.S.

**RESOLUTION** 12 bit

**TEMPERATURE COEFFICIENT** < 200 ppm/°C

**WORKING TEMPERATURE** -15 .. +65°

**STORAGE TEMPERATURE** -40°C .. +85°C

**RESPONSE TIME** 1000 ms

**TYPE OF MEASURE** TRMS (True RMS)

**RANGE** 50 Arms or 25 Arms dip-switch setting, bipolar (+/- 50A DC o +/-25A DC), RS485 customize

**OUTPUT** 0 .. 10V and RS485

**BAND WIDTH AT -3dB** DC or 20 .. 2000 Hz

**ISOLATION** 3kV on bare wire

**OVERLOAD** 2k A pulse, 300 A continuous

**CREST FACTOR** 2

**HYSTERESIS** 0,15% f.s.

**HUMIDITY** 10 .. 90% not condensing

**ALTITUDE** Up to 2000 m s.l.m.

**WEIGHT** 72 gr

**FILLING** Epoxy Resins

**BOX MATERIAL** PBT, grey

**MOUNTING** Screw predisposition for vertical / horizontal mounting, DIN Rail clips (included) for vertical / horizontal mounting

**TERMINAL** Removable terminals 3,5mm, 5 poles

**DIP-SWITCH** 8 poles

**LED** N°1 yellow, Power on fixed, data communication blinking

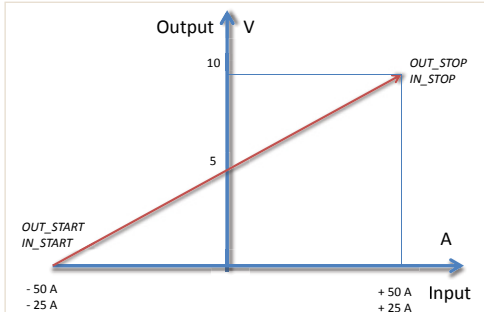
**STANDARDS CE** EN61000-6-4/2007-01; EN64000-6-2/2006-10; EN61010-1/2001

**DIMENSIONS** 46,1x 63x 26,4 mm (terminal excluded)

It's possible to connect via serial RS485 to the 2000.35.014 through a converter USB/232-485 for setting the parameters of zero and span and configuration of the Modbus addresses directly from your system of supervision, or using the free software (support@pixsys.net)

# Current Transformer AC/DC TRMS - RS485 MODBUS 2000.35.014

2000.35.014 INPUT/OUTPUT BIPOLAR



Via the serial link RS485-USB you can connect to the 2000.35.014 via free software (support@pixsys.net). Using this software, free download from www.pixsys.net, allows you to configure the processor by setting the START and STOP input and output (see diagram), you can set the Modbus address of the PC to which the query transformer and decide whether to make monopolar (only positive or negative values ) or bipolar (see diagram). By means of dip-switch can configure the 2000.35.014 to set the scale to 25 or 50A, the function monopolar (TRMS) or bipolar (mean value), the Modbus address (see register map below) up to a maximum of 15 addresses.

### MOUNTING:

The current transformer 2000.35.014 can be mounted in any position (see photo below), horizontal or vertical mounting, horizontal or vertical through the two hooks for DIN rail included in the box.

### CAUTION:

Magnetic fields of high intensity can vary the values measured by the transformer. Avoid installation near permanent magnets, electromagnets or iron masses that induce strong changes in the magnetic field. If any irregularity recommend reorient or move the transformer in the area most appropriate.

### REMARKS:

- Modbus connections: A+ and B- as per Modbus RTU standards;
- Modbus Register reference: with reference to the logical address, for ex. 40010, corresponds to physical address n°9 as per Modbus RTU standard;
- Dip Switch Settings: the setting is not enabled if the first fourth dip-switches are set to 0000, the rest of dipswitch are disabled. All settings coming from EEPROM.
- Modbus functions supported: 3 (Read multiple registers, max 4), 6 (Write single).

### DIP-SWITCH SETTINGS:

**Example:** if you want to set the measure range from 0 .. 50 A to 0 .. 25A, please, put ON the dip-switch n°8 and put ON also one of the first four dip-switch (if you don't do that it continue to take the EEPROM setting).

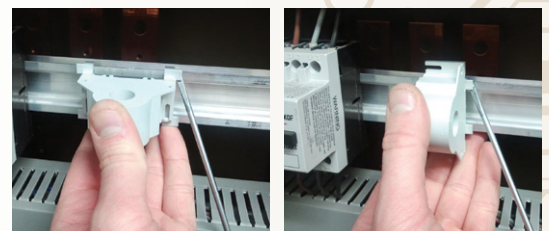
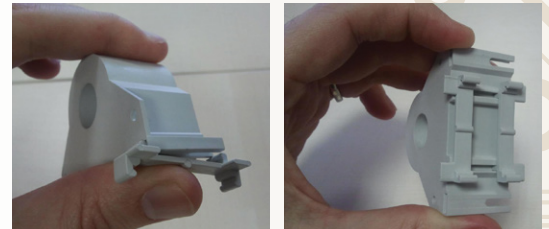
If you want to modify from Monopolar (default) to Bipolar function by dip-switch, please, put ON the dip n°7 and put ON also one of the first dip-switch (if you don't do that it continue to take the EEPROM setting). Any changes made by dip-switch required to switch off the power supply. It's a safety condition in order to prevent any manumission on the device.

### Dip-switch table

DESCRIZIONE	1	2	3	4	5	6	7	8
All settings from EEPROM	0	0	0	0				
ADD= 1	0	0	0	1				
ADD= 2	0	0	1	0				
ADD= 15	1	1	1	1				
2400 BAUDRATE					0	0		
9600 BAUDRATE					0	1		
38400 BAUDRATE					1	0		
57600 BAUDRATE					1	1		
MONOPOLAR (TRMS)							0	
BIPOLAR (MEAN VALUE)							1	
50 A								0
25 A								1

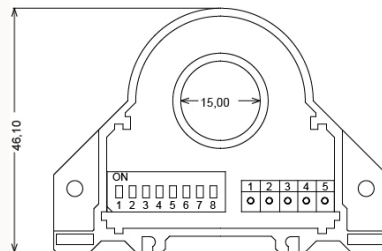
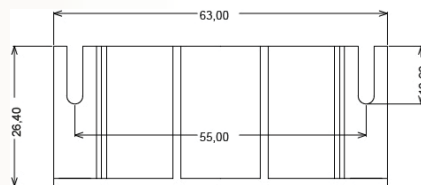
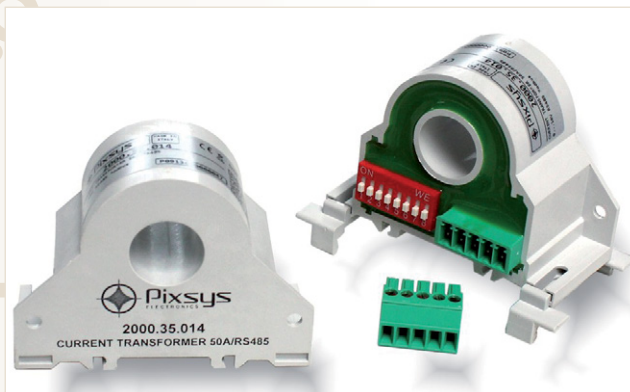
### Modbus register table

Register Name	Comment	Register Type	R/W	DEFAULT Value	Range	Modbus Address
machine_ID	ID Machine	Unsigned 16 bits	R	4		40001
FW_Version	Firmware Release	Unsigned 16 bits	R			40002
addr	Modbus Address	Unsigned 16 bits	R/W	1	1..250	40003
Delay	Answer Delay	Unsigned 16 bits	R/W	1	1..1000	40004
Baudrate	Baudrate	Unsigned 16 bits	R/W	1	0..7	40005
	0=1200 / 1= 2400					
	2= 4800 / 3= 9600					
	4= 19200 / 5= 38400					
	6= 57600 / 7= 115200					
parity	Type of parity	Unsigned 16 bits	R/W	0	0..2	40006
	0= 8,N,1					
	1= 8, O, 1(ODD)					
	2= 8, E, 1(EVEN)					
In_start	Start Input (A)	Floating 32 bits	R/W	0	-50,0..+50,0	40007(LO) - 40008(HI)
In_stop	Stop Input (A)	Floating 32 bits	R/W	50	-50,0..+50,0	40009(LO) - 40010(HI)
Out_start_V	Start Output (mV)	Unsigned 16 bits	R/W	0	0.. 10000	40011
Out_stop_V	Stop Output (mV)	Unsigned 16 bits	R/W	10000	0..10000	40012
RMS_A	RMS Current Value (A)	Floating 32 bits	R			40037(LO) - 40038(HI)
status	Status Register	Unsigned 16 bits	R			40048
	bit 0 = 1 : Error flash settings					
	bit 1 = 1 : Error flash calibration					
	bit 2 = 1 : Over Range					
	bit 3 = 1 : Under Range					
RMS_100	RMS Value of Current (A x 100)	Signed 16 bits	R			40050
RMS_sw	RMS Current Value (A) swapped	Floating 32 bits	R			40051(HI) - 40052(LO)

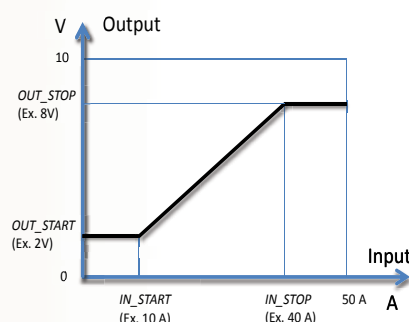


# Trasformatore di Corrente AC/DC TRMS - RS485 MODBUS 2000.35.014

Il 2000.35.014 è un **trasformatore di corrente continua ed alternata**, galvanicamente isolato dal circuito di misura. Il dispositivo è nella funzione e nell'aspetto del tutto simile ad un TA attivo standard, in grado però di misurare la componente continua e alternata **TRMS**. Il trasformatore è dotato di uscita seriale RS485 Modbus e di una uscita analogica 0-10V. Attraverso la porta seriale è possibile configurare liberamente lo span e lo zero e assegnare l'indirizzo Modbus.



2000.35.014 INPUT/OUTPUT (esempio)

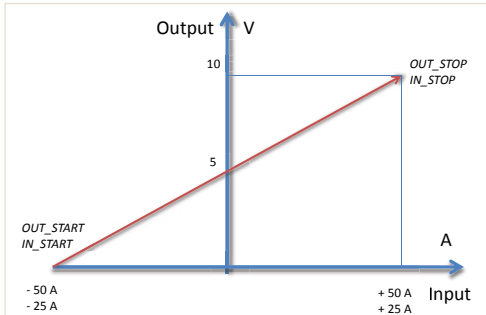


<b>ALIMENTAZIONE</b>	12 .. 30Vdc, Protezioni per inversione di polarità e sovratemperatura
<b>ASSORBIMENTO</b>	Massimo 20mA
<b>GRADO DI PROTEZIONE</b>	IP20
<b>CLASSE DI PRECISIONE</b>	0,5% F.S.
<b>RISOLUZIONE</b>	12 bit
<b>COEFFICIENTE TEMPERATURA</b>	< 200 ppm/°C
<b>TEMPERATURA DI LAVORO</b>	-15 .. +65°
<b>TEMPERATURA DI STOCCAGGIO</b>	-40°C .. +85°C
<b>VELOCITÀ DI RISPOSTA</b>	1000 ms
<b>TIPO DI MISURA</b>	TRMS
<b>PORTATE</b>	50 Arms o 25 Arms impostabili da dip-switch, bipolare (+/- 50A DC o +/-25A DC), scale personalizzate impostabili via RS485
<b>USCITA</b>	0 .. 10V e RS485
<b>BANDA PASSANTE a -3dB</b>	DC oppure 20 .. 2000 Hz
<b>ISOLAMENTO</b>	3kV su cavo nudo
<b>SOVRACCARICO</b>	2k A impulsivi, 300 continuativi
<b>FATTORE DI CRESTA</b>	2
<b>ISTERESI SULLA MISURA</b>	0,15% f.s.
<b>UMIDITÀ</b>	10 .. 90% non condensante
<b>ALTITUDINE</b>	Fino a 2000 m s.l.m.
<b>PESO</b>	72 gr
<b>RIEMPIMENTO</b>	Resina epossidica
<b>INVOLUCRO</b>	PBT, colore grigio
<b>SISTEMA DI AGGANCIO</b>	Predisposizione per aggancio verticale/orizzontale con viti, predisposizione per aggancio verticale/orizzontale per barra DIN (clip incluse)
<b>CONNESSIONI</b>	Morsetto estraibile passo 3,5mm, 5 poli
<b>DIP-SWITCH</b>	8 poli
<b>LED</b>	N°1 giallo, per segnalazione Power on, lampeggiante per trasmissione dati
<b>NORMATIVA CE</b>	EN61000-6-4/2007-01; EN64000-6-2/2006-10; EN61010-1/2001
<b>DIMENSIONI</b>	46,1x 63x 26,4 mm (escluso morsetto)

È possibile connettersi via seriale al 2000.35.014 attraverso un convertitore USB/232-485 per il settaggio dei parametri di span e di zero e la configurazione degli indirizzi Modbus direttamente dal Vostro sistema di supervisione, oppure tramite il software gratuito (servizio clienti: support@pixsys.net)

# Trasformatore di Corrente AC/DC TRMS - RS485 MODBUS 2000.35.014

2000.35.014 INPUT/OUTPUT BIPOLEARE



## IMPOSTAZIONI DIP-SWITCH:

**Esempio:** se si desidera impostare l'intervallo di misura da 0 .. 50 A a 0 .. 25A, impostare a ON il dip-switch n° 8 e anche uno dei primi quattro dip-switch (in caso contrario questo continuerà a prendere l'impostazione EEPROM).

Se si desidera passare dalla funzione Monopolare (default) a quella Bipolare tramite dip-switch, impostare a ON il dip n° 7 e anche uno dei primi dip-switch (in caso contrario questo continuerà a prendere l'impostazione EEPROM). Tutte le modifiche apportate tramite dip-switch richiedono di spegnere l'alimentazione. È una condizione di sicurezza che permette di evitare manomissioni al dispositivo.

## Tabella Dip-switch

DESCRIZIONE	1	2	3	4	5	6	7	8
Comunicazione via EEPROM	0	0	0	0				
ADD= 1	0	0	0	1				
ADD= 2	0	0	1	0				
ADD= 15	1	1	1	1				
2400 BAUDRATE					0	0		
9600 BAUDRATE					0	1		
38400 BAUDRATE					1	0		
57600 BAUDRATE					1	1		
MONOPOLARE							0	
BIPOLEARE							1	
50 A								0
25 A								1

## Tabella registri Modbus

Register Name	Comment	Register Type	R/W	DEFAULT Value	Range	Modbus Address
machine_ID	ID Machine	Unsigned 16 bits	R	4		40001
FW_Version	Firmware Release	Unsigned 16 bits	R			40002
addr	Modbus Address	Unsigned 16 bits	R/W	1	1..250	40003
Delay	Answer Delay	Unsigned 16 bits	R/W	1	1..1000	40004
Baudrate	Baudrate	Unsigned 16 bits	R/W	1	0..7	40005
	0=1200 / 1= 2400					
	2= 4800 / 3= 9600					
	4= 19200 / 5= 38400					
	6= 57600 / 7= 115200					
parity	Type of parity	Unsigned 16 bits	R/W	0	0..2	40006
	0= 8,N,1					
	1= 8, O, 1(ODD)					
	2= 8, E, 1 (EVEN)					
In_start	Start Input (A)	Floating 32 bits	R/W	0	-50,0..+50,0	40007(LO) - 40008(HI)
In_stop	Stop Input (A)	Floating 32 bits	R/W	50	-50,0..+50,0	40009(LO) - 40010(HI)
Out_start_V	Start Output (mV)	Unsigned 16 bits	R/W	0	0.. 10000	40011
Out_stop_V	Stop Output (mV)	Unsigned 16 bits	R/W	10000	0..10000	40012
RMS_A	RMS Current Value (A)	Floating 32 bits	R			40037(LO) - 40038(HI)
status	Status Register	Unsigned 16 bits	R			40048
	bit 0 =1 : Error flash settings					
	bit 1=1 : Error flash calibration					
	bit 2=1 : Over Range					
	bit 3=1 : Under Range					
RMS_100	RMS Value of Current (A x 100)	Signed 16 bits	R			40050
RMS_sw	RMS Current Value (A) swapped	Floating 32 bits	R			40051(HI) - 40052(LO)

Attraverso il collegamento seriale RS485-USB è possibile collegarsi al 2000.35.014 tramite il software gratuito (servizio clienti: support@pixsys.net) L'utilizzo di questo software, scaricabile gratuitamente dal sito [www.pixsys.net](http://www.pixsys.net), permette di configurare il trasformatore impostando lo START e STOP di ingresso e di uscita (vedi diagramma), potrete impostare da PC l'indirizzo Modbus al quale interrogare il trasformatore e decidere se renderlo monopolare (solo valori positivi o negativi) o bipolare (vedi diagramma). Tramite i dip-switch potrete configurare il 2000.35.014 per impostare il fondo scala a 25 o 50A, la funzione monopolare o bipolare, l'indirizzo Modbus (vedi mappa dei registri sotto) fino ad un massimo di 15 indirizzi.

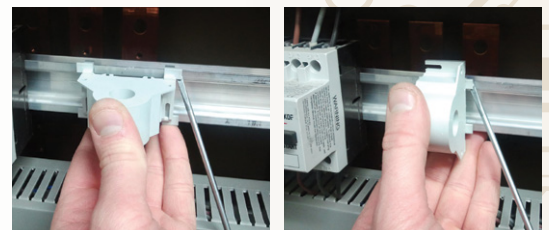
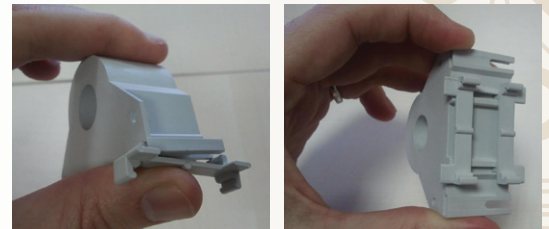
## MONTAGGIO:

Il trasformatore di corrente 2000.35.014 può essere montato in qualsiasi posizione (vedere foto in basso), orizzontale o verticale con viti, orizzontale o verticale attraverso i due gancetti per barra din inclusi nella scatola.

**ATTENZIONE:** Campi magnetici di notevole intensità possono far variare i valori misurati dal trasformatore. Evitare l'installazione vicino a magneti permanenti, elettromagneti o masse ferrose che inducano forti alterazioni del campo magnetico. Qualora si manifestassero anomalie consigliamo di orientare diversamente il trasformatore o spostarlo in zona più consona.

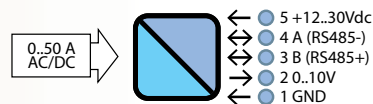
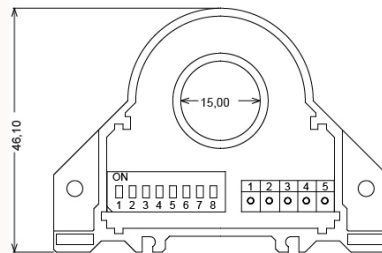
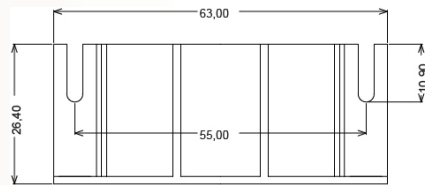
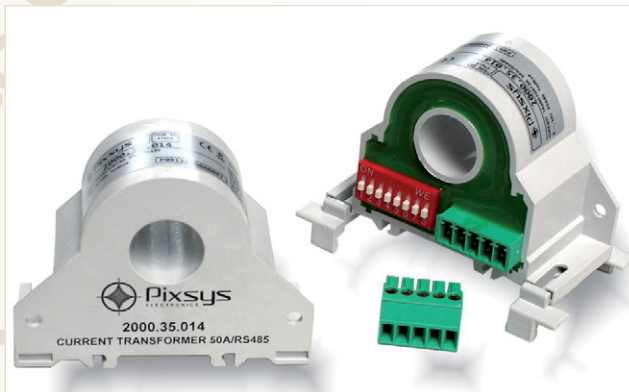
## REMARKS:

- Connessioni Modbus: A+ e B- secondo standard Modbus RTU;
- Registro Modbus di riferimento: con rif. all'indirizzo logico, es. 40010, corrisponde all'indirizzo fisico n° 9 come per il Modbus RTU standard;
- Impostazioni Dip Switch: l'impostazione non è abilitata se i primi quattro dip-switch sono impostati a 0000, il resto dei dip-switch sono disabilitati. Tutte le impostazioni provengono da EEPROM.
- Funzioni Modbus supportate: 3 (Lettura di più registri, max 4), 6 (Scrittura singolo).

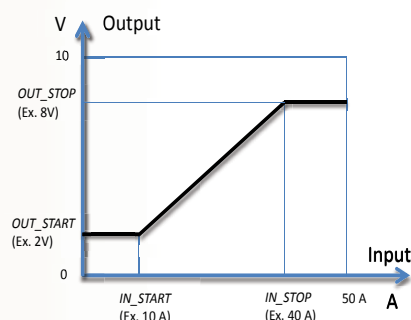


# Transformador de Corriente AC/DC TRMS 2000.35.014

El 2000.35.014 es un transformador de corriente continua y alterna, galvanicamente aislado del circuito de medida. El dispositivo ofrece la función y el aspecto del todo similar a un TA activo standard, en grado también de medir la componente continua y alterna **TRMS**. El transformador está dotado de salida serial RS485 Modbus y de una salida analógica 0-10V. A través la puerta serial es posible configurar libremente el span y el cero y asignar la dirección Modbus.



2000.35.014 ENTRADA/SALIDA (ejemplo)



**ALIMENTACION** 12 .. 30Vdc, Protecciones para inversión de polaridad y sobret temperatura

**ABSORCION** Máximo 20mA

**GRADO DE PROTECCION** IP20

**CLASE DE PRECISION** 0,5% F.S.

**RESOLUCION** 12 bit

**COEFICIENTE TEMPERATURA** < 200 ppm/°C

**TEMPERATURA DE TRABAJO** -15 .. +65°

**TEMPERATURA DE ALMACENAJE** -40°C .. +85°C

**VELOCIDAD DE RESPUESTA** 1000 ms

**TIPO DE MEDIDA** TRMS

**ALCANCE** 50 Arms o 25 Arms configurables desde dip-switch, bipolar (+/- 50A DC o +/-25A DC), escalas personalizadas configurables via RS485

**SALIDA** 0 .. 10V e RS485

**BANDA PASANTE** a -3dB DC o 20 .. 2000 Hz

**AISLAMIENTO** 3kV en cable desnudo

**SOBRECARGA** 2k A impulsivos, 300 continuativos

**FACTOR DE CRESTA** 2

**HISTERESIS EN LA MEDIDA** 0,15% f.s.

**HUMEDAD** 10 .. 90% no condensante

**ALTITUD** Hasta 2000 m s.l.m.

**PESO** 72 gr

**LLENADO** Resina epóxida

**ENVOLTURA** PBT, color gris

**SISTEMA DE ENGANCHE** Predisposición para enganche vertical/horizontal con tornillos, predisposición para enganche vertical/horizontal para riel DIN (clips incluidos)

**CONEXIONES** Borne extraíble paso 3,5mm, 5 polos

**DIP-SWITCH** 8 polos

**LED** N°1 amarillo, para señalización Power on, intermitente para transmisión datos

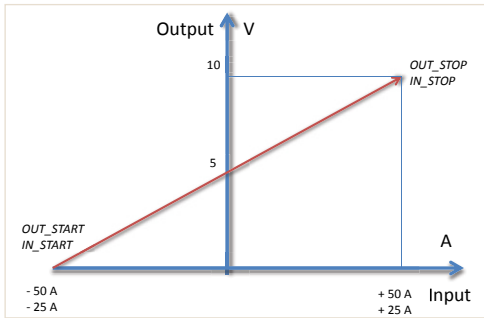
**NORMATIVA CE** EN61000-6-4/2007-01; EN64000-6-2/2006-10; EN61010-1/2001

**DIMENSIONES** 46,1x 63x 26,4 mm (borne excluido)

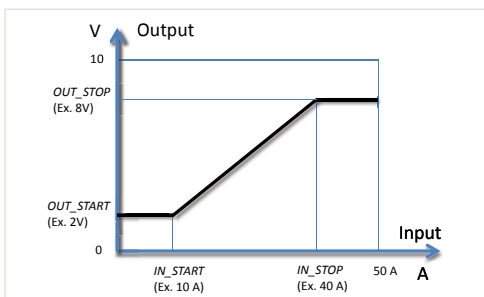
Es posible conectarse via serial al 2000.35.014 a través de un convertidor USB/232-485 para la configuración de los parámetros de span y de cero y la configuración de las direcciones Modbus directamente desde vuestro sistema de supervisión, o a través del software gratuito (servicio cliente: support@pixsys.net)

# Transformador de Corriente AC/DC TRMS 2000.35.014

2000.35.014 ENTRADA/SALIDA BIPOLAR



2000.35.014 INPUT/OUTPUT (ESEMPIO)



A través de la conexión serial RS485-USB es posible conectarse al 2000.35.014 a través del programa de interfaz TA-programmer-RS485. El uso de este software, descargable gratuitamente desde nuestro sitio web <http://es.pixsys.net/> permite configurar el transformador configurando el START y STOP de entrada y de salida (ver diagrama), se puede configurar desde PC la dirección Modbus al cual interrogar el transformador y decidir si obtenerlo monopolar (solo valores positivos o negativos) o bipolar (ver diagrama).

A través de los dip-switch se puede configurar el 2000.35.014 para configurar el fondo escala a 25 o 50A, la función monopolar o bipolar, la dirección Modbus (ver mapa de los registros abajo) hasta un máximo de 15 direcciones.

### MONTAJE:

El transformador de corriente QI puede ser montado en cualquier posición (ver foto abajo), horizontal o vertical con tornillos, horizontal o vertical a través de los dos ganchos para riel DIN incluidos en la caja.

**ATENCIÓN:** Campos magnéticos de gran intensidad pueden hacer variar los valores medidos del transformador. Evitar la instalación cerca a magnetos permanentes, electromagnetos o masas ferrosas que induzca fuertes alteraciones del campo magnético. En el caso se manifiesten anomalías aconsejamos orientar diferentemente el transformador o moverlo a una zona más apropiada.

Tabla Dip-switch

DESCRIPCIÓN	1	2	3	4	5	6	7	8
Comunicación via EEPROM	0	0	0	0				
ADD= 1	0	0	0	1				
ADD= 2	0	0	1	0				
ADD= 15	1	1	1	1				
2400 BAUDRATE					0	0		
9600 BAUDRATE					0	1		
38400 BAUDRATE					1	0		
57600 BAUDRATE					1	1		
MONOPOLAR							0	
BIPOLAR							1	
50 A								0
25 A								1

Tabla registros Modbus

Register Name	Comment	Register Type	R/W	DEFAULT Value	Range	Modbus Address
machine_ID	ID Machine	Unsigned 16 bits	R	4		40001
FW_Version	Firmware Release	Unsigned 16 bits	R			40002
addr	Modbus Address	Unsigned 16 bits	R/W	1	1..250	40003
Delay	Answer Delay	Unsigned 16 bits	R/W	1	1..1000	40004
Baudrate	Baudrate	Unsigned 16 bits	R/W	1	0..7	40005
	0=1200 / 1= 2400					
	2= 4800 / 3= 9600					
	4= 19200 / 5= 38400					
	6= 57600 / 7= 115200					
parity	Type of parity	Unsigned 16 bits	R/W	0	0..2	40006
	0= 8,N,1					
	1= 8, O, 1(ODD)					
	2= 8, E, 1(EVEN)					
In_start	Start Input (A)	Floating 32 bits	R/W	0	-50,0..+50,0	40007(LO) - 40008(HI)
In_stop	Stop Input (A)	Floating 32 bits	R/W	50	-50,0..+50,0	40009(LO) - 40010(HI)
Out_start_V	Start Output (mV)	Unsigned 16 bits	R/W	0	0.. 10000	40011
Out_stop_V	Stop Output (mV)	Unsigned 16 bits	R/W	10000	0..10000	40012
RMS_A	RMS Current Value (A)	Floating 32 bits	R			40037(LO) - 40038(HI)
status	Status Register	Unsigned 16 bits	R			40048
	bit 0 = 1 : Error flash settings					
	bit 1=1 : Error flash calibration					
	bit 2=1 : Over Range					
	bit 3=1 : Under Range					
RMS_100	RMS Value of Current (A x 100)	Signed 16 bits	R			40050
RMS_sw	RMS Current Value (A) swapped	Floating 32 bits	R			40051(HI) - 40052(LO)

