TBC-SP Closed Loop Mode Hall Effect Current Sensor

TBC-SP current sensor is a closed loop device based on the measuring principle of the hall effect and null balance method, with a galvanic isolation between primary and secondary circuit, it uses for precision measurement of DC, AC and pulse current

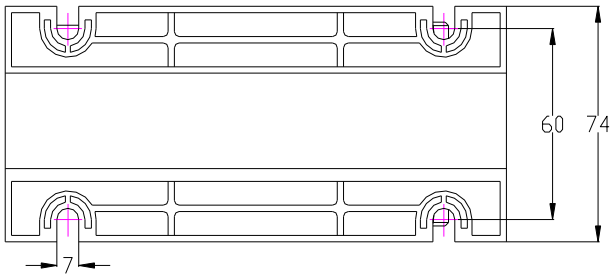
Electrical data (Ta=25℃±5℃)

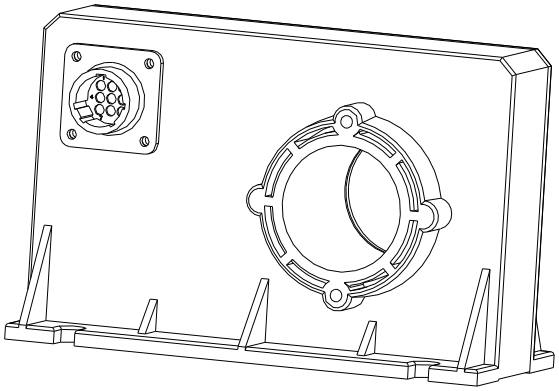
Type / Parameter	TBC1000SP		Unit
Rated input (Ipn)	±1000		A
Measure range (Ip)	±1500		A
Measure resister	with±15V @±1000Amax	0(min) 25(max)	Ω
	with±15V @±1500Amax	0(min) 5(max)	Ω
	with±24V @±1000Amax	0(min) 68(max)	Ω
	with±24V @±1500Amax	0(min) 30(max)	Ω
Turns ratio (Np/Ns)	1:5000		T
Coil resister	@ +85℃	43	Ω
Rated output (Is)	±200±0.5%FS		mA
Supply voltage	±15 ~ ±24		V
Power consumption	≤25+IpX (Np/Ns)		mA
Offset current	@Ip=0	≤±0.3	mA
Offset drift	@ -40℃ ~ +85℃	≤±0.5 (Typ) , ≤±0.75 (Max) ,	mA
Response time	@50A/μS,10%-90%	< 1	μs
Linearity	@Ip=0-±Ipn	≤0.1	%FS
Galvanic isolation	@ 50Hz, AC,1min	6	KV
di/dt followed	> 50		A/μs
Bandwidth	@-3dB	DC-200	KHz

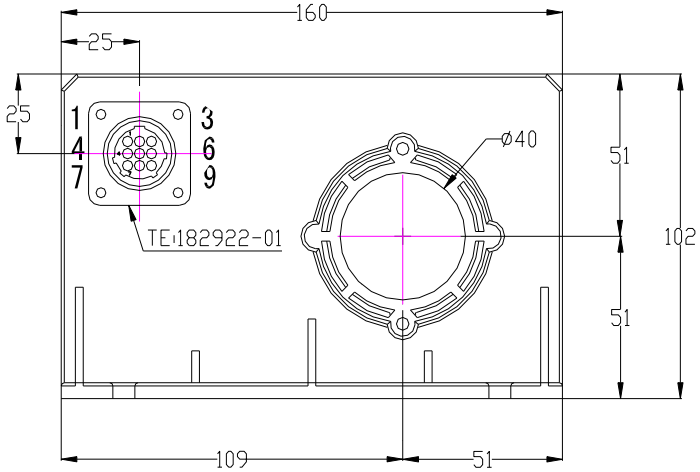
Applications

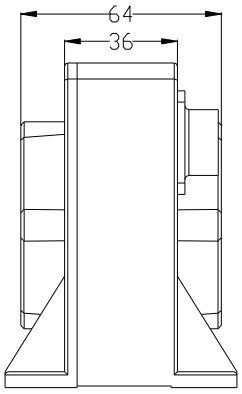
- Variable speed drives
- Welding machine
- Battery supplied applications
- Uninterruptible Power Supplies (UPS)
- Electrochemical

Mechanical dimension (for reference only)







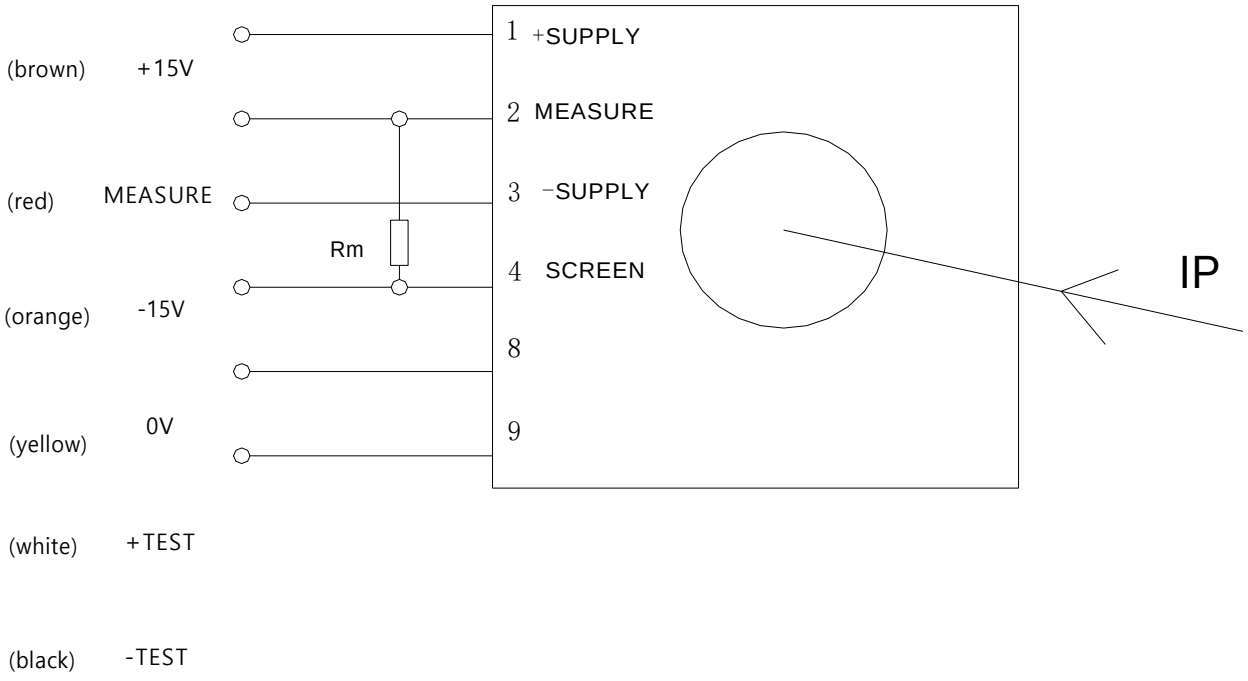


PINS		
1	brown	+SUPPLY +15v
2	red	MEASURE
3	orange	-SUPPLY -15v
4	yellow	SCREEN 0V
5	green	NC
6	blue	NC
7	gray	NC
8	white	+TEST
9	black	-TEST

Remarks :

1. All dimensions are in mm.
2. General tolerance ±1.0mm

测试接线图



Directions for use

1. Is will be in a forward direction when the Ip flows according to the direction of the arrowhead.
2. The primary conductor should be≤120℃.
3. The dynamic performance (di/dt and the response time) is the best when the primary hole is fully filled with the bus bar.
4. The primary turns should be at the top of the sensor for the best magnetic coupling.
5. When the current will be measured goes through a sensor, the voltage will be measured at the output end. (Note: The false wiring may result in the damage of the sensor).
6. Custom design in the different rated input current and the output current are available.

Standards

UL94-V0

EN60947-1:2004

IEC60950-1:2001

EN50178:1998

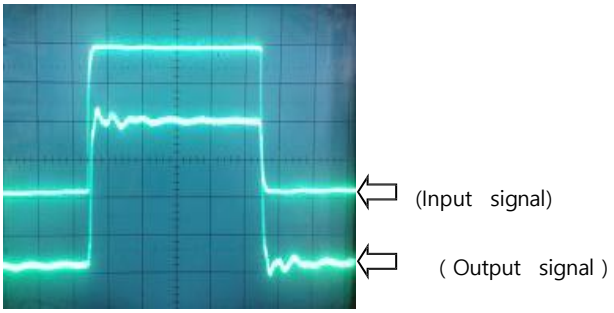
SJ 20790-2000

General data

	Value	Unit	Symbol
Operating temperature	-40 to +85	ºC	TA
Storage temperature	-40 to +125	ºC	TS
Mass(approx)	600	g	M

Characteristics chart

Pulse current signal response characteristic



Effects of impulse noise