Capteur de tension LV 100/SP71

I_{PN} = 10 mA

Pour la mesure électronique des tensions : DC, AC, Impulsionnelles..., avec une isolation galvanique entre le circuit primaire (haute tension) et le circuit secondaire (circuit électronique).

CE

Caractéristiques électriques principales

I_{PN}	Courant primaire efficace nominal		10		mA
I_P	Courant primaire, plage de mesure		0 .. ± 20		mA
R_M	Résistance de mesure		$R_{M\,min}$	$R_{M\,max}$	
	avec ± 15 V	@ ± 10 mA $_{max}$	0	185	Ω
		@ ± 20 mA $_{max}$	0	60	Ω
	avec ± 24 V	@ ± 10 mA $_{max}$	47	355	Ω
		@ ± 20 mA $_{max}$	47	150	Ω
I_{SN}	Courant secondaire efficace nominal		50		mA
K_N	Rapport de transformation		10000 : 2000		
V_C	Tension d'alimentation (±5%)		± 15 .. 24		V
I_C	Courant de consommation		25 (@±24V) + I_S		mA
V_d	Tension efficace d'essai diélectrique, 50 Hz, 1 mn		9.5		kV

Précision - Performances dynamiques

X_G	Précision globale @ I_{PN}, T_A = 25°C		± 0.7		%
ε_L	Linéarité		< 0.1		%
			Typ	Max	
I_O	Courant de décalage @ I_P = 0, T_A = 25°C			± 0.3	mA
I_{OT}	Dérive en température de I_O	- 25°C .. + 70°C	± 0.4	± 0.6	mA
t_r	Temps de retard [1] @ 63 % de V_{PN}		30 .. 100		µs
f	Bande passante (-1dB)		DC .. 8		kHz

Caractéristiques générales

T_A	Température ambiante de service	- 25 .. + 70	°C
T_S	Température ambiante de stockage	- 40 .. + 85	°C
R_P	Résistance bobine primaire @ T_A = 70°C	1900	Ω
R_S	Résistance bobine secondaire @ T_A = 70°C	60	Ω
m	Masse	450	g
	Normes	EN 50155	

Notes : [1] R_1 = 200 kΩ (Constante de temps L/R, engendrée par la résistance et l'inductance du circuit primaire)

Généralités

- Capteur de tension de type boucle fermée (à compensation) utilisant l'effet Hall
- Boîtier injecté en matière isolante auto-extinguible de classe UL 94-V0.

Principes d'utilisation

- Pour mesurer une tension, il faut prélever un courant proportionnel à la tension à mesurer
- Le primaire du capteur est à raccorder directement aux bornes de la tension à mesurer avec une résistance R_1 en série.

Particularités

- V_C = ± 15 .. 24 (±5%) V
- V_d = 9.5 kV
- Circuit électrique seulement accessible pour analyse de panne
- Entièrement moulé
- Matériel ferroviaire.

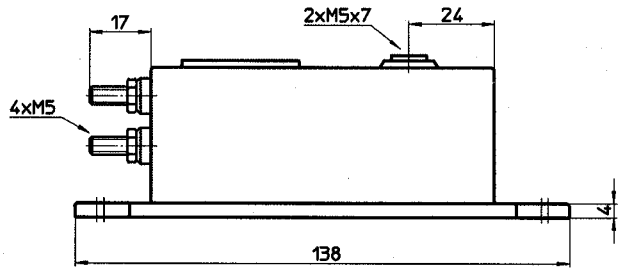
Avantages

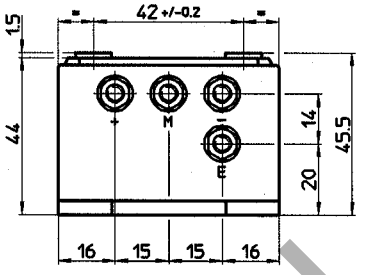
- Excellente précision
- Très bonne linéarité
- Faible dérive en température
- Faible temps de retard
- Grande bande passante
- Grande immunité aux perturbations extérieures
- Faible perturbation en mode commun.

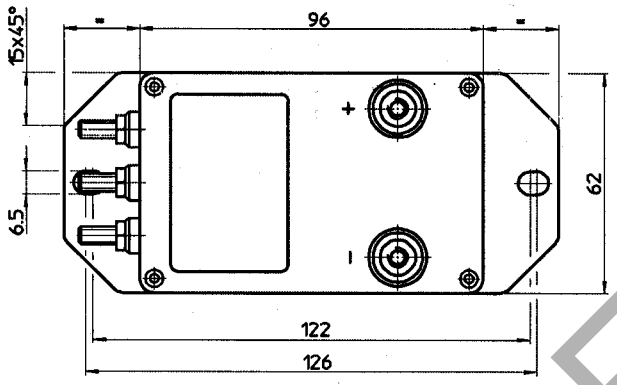
Applications

- Variateurs de vitesse et entraînements à servomoteur AC
- Convertisseurs statiques pour entraînements à moteur DC
- Applications alimentées par batteries
- Alimentations Sans Interruption (ASI)
- Alimentations pour applications de soudage.

Dimensions LV 100/SP71 (en mm)



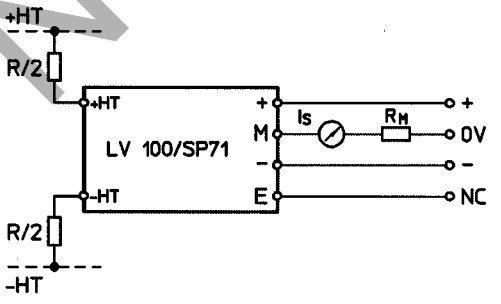




Branchement

Borne + : alimentation + 15 .. 24 V
Borne M : mesure
Borne - : alimentation - 15 .. 24 V
Borne E : NC

Raccordement



Caractéristiques mécaniques

• Tolérance générale	± 0.3 mm
• Fixation	2 trous Ø 6.5 mm
• Connexion primaire	bornes écrous M5
• Connexion secondaire	tiges filetées M5
• Couple de serrage	2.2 Nm

Remarques générales

- I_S est positif lorsqu'une tension positive V_P est appliquée à la borne +HT.

Indications pour l'utilisation du capteur de tension type LV 100/SP71

Résistance primaire R_1 : la précision optimale du capteur est obtenue avec le courant primaire nominal. Dans la mesure du possible, R_1 sera dimensionnée pour que la tension nominale à mesurer corresponde à un courant primaire de 10 mA.

Exemple : soit une tension à mesurer V_{PN} = 1000 V
a) R_1 = 100 kΩ/40 W, I_P = 10 mA — Précision = ± 0.7 % de V_{PN} (@ T_A = +25°C)
b) R_1 = 400 kΩ/ 5 W, I_P = 2.5 mA — Précision = ± 2.5 % de V_{PN} (@ T_A = +25°C)

Plage d'utilisation : compte tenu d'une part de la résistance du bobinage primaire (qui doit être faible par rapport à R_1 pour que sa variation en température soit négligeable) et d'autre part de l'isolation, ce capteur convient pour la mesure de tension nominale de 100 V à 4000 V.

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