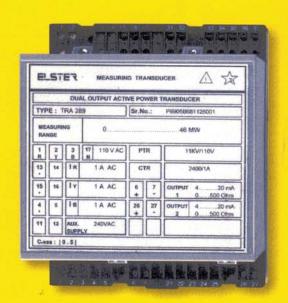
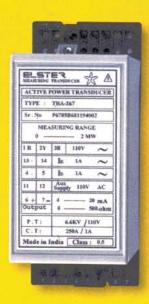


Elster Transducers







Discover the value of the diamond



ТҮРЕ	AC CURRENT	AC VOLT	AGE	DC SIGNAL ISOLATOR	FREQUENCY
	TRA170 Single Output	TRA111** Single Output	TRA 124 Single Output	TRA 430 Single Output	TRA 202 Single Output
	TRA 172 Dual output	Suppressed Lower range (Non Linear)	TRA 120 Dual Output	TRA 431 Dual Output	TRA 204 Dual Output
PARTICULARS					
Measuring Span	0-l _{in}	0-0.8 E _{in} -1.2E _{in}	0-E _{in}	0-l _{in} / E _{in} Bidirectional	45-55Hz 48-52Hz#
Rated value of Input Variable I _{in} & E _{in}	1A/5A		10/220/ 40/500V	1/2.5/5/10/20mA or 75mV300V	63.5/110/220V
Frequency ± 5Hz	50Hz/60Hz	50Hz/60Hz	50Hz/60Hz	Not Applicable	50Hz
Internal Consumption at I/P	0.5VA	E _{in} X 2mA	E _{in} X 2mA E _{in} X 4mA	Approx. 0.5V for I_{in} 0.1mA for $E_{in} < 75V$ 0.33mA for $E_{in} > 75V$	E _{in} X 2mA E _{in} X 4mA
Continuous overload Capacity	2 times	1.2 times	1.2 times	1.2 times	1.2 times
Momentary overload Capacity	60 times for 1sec	2 times for 1 sec	2 times for 1sec		2 times for 1 sec
Nominal output I _{out}	2.5/5/10/ 20mA & 4-20mA 0-5/10V	0-1-5mA 0-2-10mA 0-4-20mA 0-1-5V/0-2-10V	2.5/5/10/ 20mA & 4-20mA 0-5/10V	2.5/5/10/20mA & 4-20mA Bidirectional 0-5/10V	2.5/5/10/ 20mA & 4-20mA 0-5/10V
Output load Rout	$\leq \frac{10V}{I_{out}}$ $\geq \frac{V_{out}}{5mA}$	$\leq \frac{10V}{I_{out}}$ $\geq \frac{V_{out}}{5mA}$	$\leq \frac{10V}{I_{out}}$ $\geq \frac{V_{out}}{5mA}$	$\leq \frac{10V}{I_{out}}$ $\geq \frac{V_{out}}{5mA}$	$\leq \frac{10V}{I_{out}}$ $\geq \frac{V_{out}}{5mA}$
AC Ripple (V _{p-p})	< 0.5%	< 0.5%	< 0.5%	< 0.5%	< 0.5%
No load voltage	≤ 20V	≤ 20V	≤ 20V	≤ 20V	≤ 20V
Response time	< 500m sec.	< 500m sec.	< 500m sec.	< 500m sec.	< 500m sec.
Accuracy Class under Specified conditions	0.5	0.5	0.5	0.5*	0.2
Operating Temperature	0-55°C	0-55°C	0-55°C	0-55°C	0-55°C
Isolation test voltage between I/P & O/P	4kV, 50Hz -1min	3kV, 50Hz -1min	3kV, 50Hz -1min	1kV/2kV, 50HZ -1min ***	3kV, 50HZ -1min
Auxiliary supply	110/220V AC or 24/48/60/ 110V/220V DC	110/220V AC or 24/48/60/ 110V/220V DC or Self-powered	110/220V AC or 24/48/60/ 110V/220V DC	110/220V AC or 24/48/60/ 110V/220V DC	110/220V AC or 24/48/60/ 110V/220V DC or Self-powere
Dimensional Drawings	C/D	С	C/D	D	C/D

Note: Please consult us for your specific requirement of higher accuracy, auxiliary power supply, load etc. As a part of our endeavour to continuously improve product design, the specifications are subject to change. For Dual Output Transducers, output to output isolation of 500V is provided.

^{**} Special requirement. Please consult us for availability and delivery. # Special range 48 - 52Hz to be confirmed by ordering.
*** Isolation of 4kV, 50HZ on request for TRA 430.

	POWER			PHASE ANGLE		TRANSFORMER TAP POSITION TRANSDUCER	
	Active	TRA 261	TRA 263/267 TRA 287 Dual Output	TRA 265/269 TRA 289 Dual Output	TRA 231	TRA 232	TRA 511
	Reactive		TRA264/268 TRA 288 Dual Output	TRA266/270 TRA 290 Dual Output			
	System	1 Phase	3 Phase / 3 Wire (balanced-1 Ele/- unbalanced-2 Ele)	3 Phase / 4 Wire (balanced-1 Ele/- unbalanced-3 Ele)	3 Phase 3 Wire	1 Phase 3 Phase/4 Wire	TRA 512 Dual Output
	0.5 t	Pin an	D-P _{in} / ± P _{in} y value between grent power. Refer cha	racteristic	- 60° -	0 - + 60°	
,	0-1/5A & 63.5/110/220/380/440V			63.5/110/220V & 0-1/5A		From potentiometric transformer tap position indicator up to 99 transformer Taps. 100k Ω max (4 selectable inputs i.e. 10/100/300/1000Ω/Tap	
	50Hz/60Hz			50Hz / 60Hz		Not applicable	
	E _{in} X 2mA per voltage path & 0.5VA per current path			E _{in} X 2mA per voltage path & 0.5VA in current path		Not applicable	
	1.2 times for voltage 2 times for current			1.2 times for voltage 2 times for current		Not applicable	
	40 times for 0.5 sec current 4 times for 1 sec voltage			40 times for 0.5 sec current 4 times for 1 sec voltage		Not applicable	
ıA		2.5/5/10/20mA & 4-20mA (Live Zero) Bi-polar outputs possible for active/reactive Power		2.5/5/10/20mA & 4-20mA		5/10/20mA & 4-20mA	
			0-5/10V		0	-5/10V	0-5/10V
			≤ 10V I out		<u> </u>	10V I out	$\leq \frac{10V}{I_{out}}$
	$\geq \frac{V_{\text{out}}}{5\text{mA}}$		≥ Vout 5mA		$\geq \frac{V_{out}}{5mA}$		
			< 0.5%			< 0.5%	< 0.5%
	≤ 20V < 500m sec. 0.5		≤ 20V < 500m sec.		≤ 20V		
					< 500m sec.		
			0.5		0.5		
			0-55°C			0-55°C	0-55°C
	3kV, 50Hz - 1 min. for voltage 4kV, 50Hz - 1 min. for current			3kV, 50Hz - 1 min. for voltage 4kV, 50Hz - 1 min. for current			
AC / DC ered	Self-powered or 110/220V AC or 24/48/60/110V/220V DC				d or 110/220V AC or 0/110V220V DC	110/220V AC or 48V DC	
, ou			D/E			D	D

Some of the major supplies have been to:

Tata Honeywell Reliance Industries ■ Alstom Systems Ltd. ■ Grasim Cement ■ ITC ■ NPCIL

■ TISCO ■ Kutch Lignite Thermal Stn. ■ NTPC Siemens ■ GEB - APSEB

■ Schneider Electric ■ PGCIL ■ L&T Alstom Ltd. ■ Gridco ■ Reliance Energy ■ Tata Electric Co. ■ 10CL ■ Nelco ■ BHEL

TEMPERATURE TRANSDUCER	INTEGRATOR**	SUMMATION AMPLIFIER**	
	TRA 521**	TRA 441**	
TRA 530			
Single Output			
0-60°/100°/300°	0-l _{in} /E _{in} DG	0-l _{in} /E _{in} DC 4 inputs	
RTD	0-2.5/5/10/20mA	2.5/5/10/20mA	
PT - 100 Ω	4-20mA 0-5/10V DC	4-20mA Bidirectional	
Not applicable	DC	DC	
Not applicable	Approx. 0.5V for I _{in} & 0.1mA for E _{in}	0.5V X I _{in}	
Not applicable	2 times	2 times	
Not applicable			
2.5/5/10/20mA &	The state of the s	a I TRAINE	
4-20mA	O/P Pulses 0-0.5Hz to 2KHz	0-2.5/5/10/20mA 4-20mA Bidirectional	
0-5/10V		A Zonia Didirectional	
$\leq \frac{10V}{I_{out}}$			
	Not applicable	<u>0 - 10V</u>	
$\geq \frac{V_{out}}{5mA}$		lout	
< 0.5%	Not applicable	< 0.5%	
≤ 20V	-	≤ 20V	
< 500m sec.		< 500m sec.	
0.5	0.5	0.5	
0-55°C	0-55°C	0-55°C	
Not applicable	1kV, 50 Hz - 1 min.	No Isolation	
110/220V AC	110/220V AC	110/220V AC	
D	C	D	

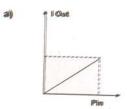
Specified Conditions of measurement:

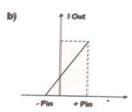
Ambient Temperature : $25^{\circ}\text{C} \pm 2^{\circ}\text{C}$ Frequency : $50\text{Hz}/60\text{Hz} \pm 0.5\%$

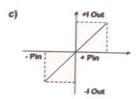
Load: 0.5 Rout

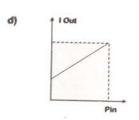
Warm uptime : 20 minutes

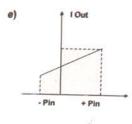
Auxilliary Supply : Supply Voltage $\pm~2\%$











Elster Transducers are manufactured to internationally acclaimed proven designs for unbeatable reliability. So that, little extra invested today, will give more savings in the long run.

Elster Transducers find a wide range of applications in virtually every sector of the power and process industry and is backed by Elster's proven experience and expertise, in the field for over two decades.

ELSTER - PIONEERS AND LEADERS IN THE FIELD OF TRANSDUCERS

Several thousand Elster Transducers are in operation in the service sectors. In fact, Elster Transducers have become synonymous with quality and reliability.

FEATURES:

- Confirms to IEC60688 & IS12784
- High accuracy Class 0.5
- Exceptional reliability
- Exceptional long-term stability
- High input/output isolation
- Output short circuit/Open circuit protection
- Load independent output
- Current or Voltage output
- Single or Dual outputs
- Choice of auxiliary power supply voltage (AC/DC)
- Low internal consumption

- No zero/span adjustments required
- Compact/Rugged design
- DIN Rail and/or Wall mounting type
- Easy installation/maintenance-free

APPLICATION

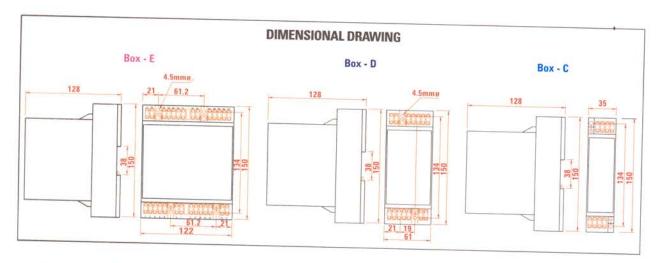
Elster Transducers find a wide range of applications, in telemetering, supervisory control and data acquisition systems for energy management, process control and other applications, where accurate and reliable monitoring of electrical parameters is desired, such as power generation, transmission, distribution and in industries as diverse as cement, steel, chemicals, fertilizers, sugar and petrochemicals & paper.

RANGE OF TRANSDUCERS

- For currents (AC & DC)
- For voltages (AC & DC)
- For power-active/reactive
- For frequency
- For phase angle

Other special types include summation amplifiers for totalising power, integrators for energy measurement, limit monitors and dual output units, transformer tap position transducers and temperature transducers.

Other special electrical transducers as per customer requirement.



Box C > Size (W x D X H)

35 mm x 128 mm x 150 mm

Box D > Size (W x D X H)

61mm x 128 mm x 150 mm

Box E > Size (W x D X H)

122 mm x 128 mm x 150 mm

Elster Metering is the new group formed from the acquisition of ABB's global metering business. Elster Metering is part of the world's largest dedicated metering company, combining the market leaders in electricity, water and gas metering. Elster Metering employs approximately 3500 employees working in 33 production and sales offices in 32 countries.

Elster Metering has a tradition of manufacturing & marketing metering products & services that use cutting edge technology.

We continue to bring value to our customers by providing the innovative solutions they need to face an ever changing energy market.

EXPORT:

We are exporting Transducers to various countries, where they have been performing satisfactorily since 1996.

Elster Transducers are used in following countries

- Argentina
- China
- Finland
- Hongkong
- Jordan

- Malaysia
- Portugal
- Romania
- Saudi Arabia
- South Africa

- Thailand
- Turkey
- Venezuela

Other Products include:

Alpha Energy Meter

- For Industrial & Commercial Utility customers
- For Wind Mill & Captive Power Plant (CPP) Applications
- MODBUS Application
- For ABT Application (Grid Meter)

System Software









Elster Metering (P) Ltd.

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