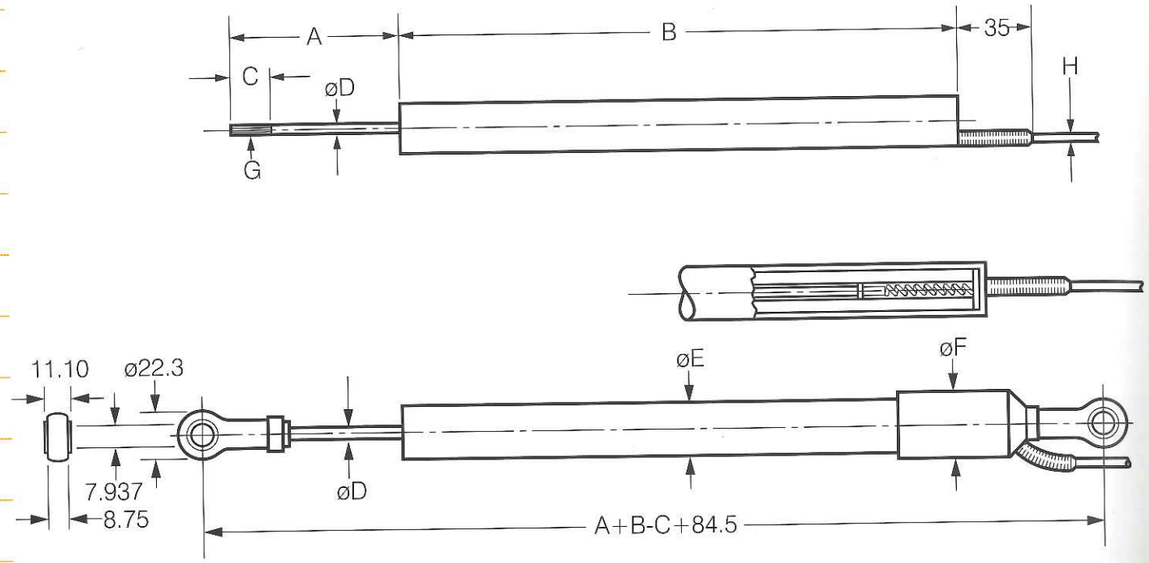
standard ac & dc

long stroke displacement transducers



Dimensions mm

	AC15 ACR15 DC15 DCR15	AC25 ACR25 DC25 DCR25	AC50 ACR50 DC50 DCR50	AC100 ACR100 DC100 DCR100	AC150 ACR150 DC150 DCR150	AC250 - DC250 -	AC300 - DC300 -
A*	45	60	85	145	197	298	349
B	97	156	280	450	552	755	857
C	20	20	20	20	19	19	19
D	3.17	4.0	4.0	4.75	4.75	4.75	4.75
E	19	19	19	25	25	25	25
F	25	25	32	32	32	32	32
G	M3	M4	M4	M5	M5	M5	M5
H	3.5	3.5	3.5	4.5	4.5	4.5	4.5

*at electrical zero

Specification

AC captive armature type AC sprung armature type DC captive armature type DC sprung armature type	AC15 ACR15 DC15 DCR15	AC25 ACR25 DC25 DCR25	AC50 ACR50 DC50 DCR50	AC100 ACR100 DC100 DCR100	AC150 ACR150 DC150 DCR150	AC250 - DC250 -	AC300 - DC300 -
Linear measuring stroke, ±mm	15	25	50	100	150	250	300
Mechanical: AC & DC series							
Max stroke, ±mm	22	35	62	125	178	279	330
Weight, g							
Body, including leads	60	96	170	600	900	1300	1600
Armature assembly	10	18	25	54	78	106	122
Spring rate	3.3	2.34	1.95	1.19	1.0		
Force at electrical zero, in g ACR	110	150	185	120	120		
Electrical: AC series							
Winding configuration	LVDT	LVDT	LVDT	LVDT	LVDT	LVDT	LVDT
Sensitivity, mV/V/mm (typical)	35	20	9.3	5	3.2	2.1	1.7
Energising current, mA	6	4	4	6	5	6	9
Output impedance, Ω	220	210	160	160	150	110	90
Input/Output phase shift, °	7	9	10	7	7	5	2
Zero phase shift, kHz	2.4	2	1.6	2.6	23	7	5.5
Energising voltage	1 to 10V rms						
Energising frequency	5kHz						
Residual voltage at zero	>0.5%						
Temperature range	-40 to +100°C						
Temperature coefficient % measuring stroke	Zero <0.005%/°C Sensitivity % per °C <0.01%/°C						
Termination	3m PVC insulated 5 core 19/0.07mm screened cabel. 100 to 300: 28/0.07mm screened cable						
Calibration	The specification provided is with a supply of 5V rms 5kHz and a calibration load of 100kΩ at 20°C. Variations of these parameters will result in changes of performance						
Electrical connections							
Red & blue	Primary Energising						
White	Secondary Signal						
Green	Secondary OV						
Yellow	Secondary centre tap (dc not connected)						
Red & white	In phase for inward displacement						
Electrical: DC series							
Winding configuration	LVDT	LVDT	LVDT	LVDT	LVDT	LVDT	LVDT
Sensitivity, mV/V/mm at 10V dc (typical)	280	165	60	20	13.3	8.0	6.6
Energising current at 10V, mA	10	18	40	40	40	40	40
Input voltage range, V	9 to 24	9 to 24	9 to 24	9 to 15	9 to15	9 to 15	9 to 15
Output ripple	<1% full scale deflection						
Response time constant	0.4 ms up to 50mm						
Frequency response	For transducers up to ±50mm: –3dB attenuation at 100Hz, –20dB/decade above 100Hz						
Temperature range	-30°C to +80°C						
Temperature coefficient % total stroke	Zero <0.005%/°C Sensitivity % per °C <0.015%/°C						
Non-linearity	0.3% is available						
Termination	3m pvc insulated 5 core 14/0.07mm screened cable. 100 to 300: 14/0.1mm screened cable						
Calibration	Specification is provided with a transducer output impedance of 2kΩ into a calibration load of 20kΩ at 20°C. Variations of these parameters will result in changes of performance						
Electrical connections							
Red & blue	Primary Energising						
White	Secondary Signal						
Green	Secondary OV						
Red & white	+ve output on white lead with respect to green for inward displacement						

submersible

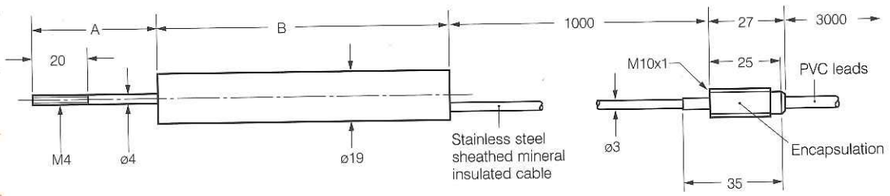
displacement transducers

AC and DC-DC types
All welded construction
Mineral insulated cable
Ranges to 50mm
Good linearity
Sealed to 100Bar (1,500psi)
LVDT configuration

SAF and SDF series transducers provide reliable, high accuracy measurements in pressurized environments up to 100bar (1,500psi). They are ideally suited for use on oil rigs, soil testing, field trials and other similar hostile environments.

Encased in electron beam welded 300 series stainless steel and terminated with stainless steel sheathed mineral insulated (mi) cable, they can be submerged in any compatible liquid.

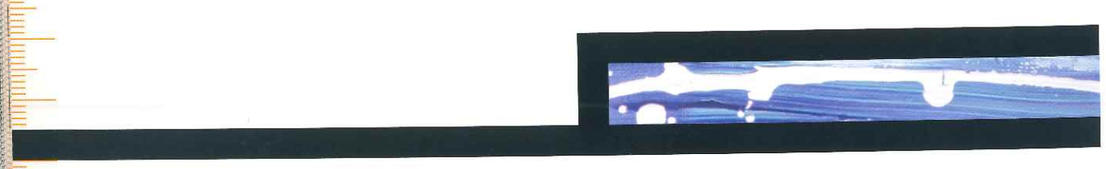
Three linear ranges are available up to ±50mm. Type SAF is for AC operation and type SDF incorporate oscillator/demodulator for DC-DC operation.



Dimensions mm

	SAF15 SACR15 SDF15 SDCR15	SAF25 - SDF25 -	SAF50 - SDF50 -
A*	45	56	81
B	105	151	275

*at electrical zero



Specification

AC free armature type **AC sprung armature type** **DC free armature type** **DC sprung armature type**	**SAF15** **SACR15** **SDF15** **SDCR**	**SAF25** **-** **SDF25** **-**	**SAF50** **-** **SDF50** **-**
Mechanical			
Linear measuring stroke, ±mm	15	25	50
Weight, g			
Body, including leads	105	150	270
Armature assembly	15	18	25
Armature (spring)	24	28	40
Spring rate	5.5	-	-
Force at electrical zero, g	140	200	290
Operating pressure range	100Bar (1500 psi)		
Electrical			
AC free armature type **AC sprung armature type**	**SAF15** **SACR15**	**SAF25** **-**	**SAF50** **-**
Winding configuration	LVDT	LVDT	LVDT
Sensitivity, mV/V/mm (typical)	34	20	9.3
Energising current, mA	6	4	4
Input/Output phase shift, °	7	9	10
Zero phase shift, kHz	2.4	2	1.6
Energising voltage	1 to 10V rms		
Energising frequency	5kHz		
Calibration load	100kΩ		
Residual voltage at zero	>0.25% fsd		
Temperature range	-40 to +100°C		
Temperature coefficient % total stroke	Zero <0.005%/°C	Sensitivity % <0.01%/°C	
DC free armature type **DC sprung armature type**	**SDF15** **SDCR**	**SDF25** **-**	**SDF50** **-**
Sensitivity, mV/V/mm at 10V dc energising	265	170	64
Energising current at 10V dc (mA)	18	18	40
Input voltage range	9 to 24V		
Output ripple	<1% full scale deflection		
Response time constant	0.4 ms		
Frequency response	600Hz for -3dB		
Temperature range	-20 to +80°C		
Temperature coefficient % total measuring stroke	Zero <0.01%/°C	Sensitivity <0.03%/°C	
Non-linearity	0.3		
Termination	1m of 3mmø stainless sheathed mi cable plus 3m PVC leads		
Calibration DC	Specification is provided with a transducer output impedance of 2kΩ into a calibration load of 20kΩ at 20°C. Variations of these parameters will result in changes of performance		
Calibration AC	The specification provided is with a supply of 5V rms 5kHz and a calibration load of 100kΩ at 20°C. Variations of these parameters will result in changes of performance		
Electrical connections			
Red & Blue	Primary Energising		
White	Secondary Signal		
Green	Secondary OV		
AC only Yellow	Secondary centre tap (dc not connected)		
Red & White	In phase for inward displacement		
DC only	Positive output on white lead with respect to green for inward displacement		