



Model Code / Additional Spec. Code ( No entry if additional spec. code is not specified. )

FK-152R  -  -  / E / SYS / GEO

System cable length	Mounting plate	Terminal block	Intrinsic safety (compliance with IEC standards)	System calibration	Geothermal spec.					
1	15m	1	DIN Rail(35mm) mount	1	Screw type terminal block (M4)	10	Japan : DEKRA Ex ia IIC T4 Ga			
2	20m	2	Screw mount (50.8 × 50.8mm)	2	Spring lock terminal	40	Canada / North America : CSA C/US Class I, Division 1, Groups A,B,C,D T4 Ex ia IIC T4 Ga Class I, Zone 0, AEx ia IIC T4 Ga			
			3			Screw mount (92 × 31mm: For VK replacement)	50	Europe : ATEX Ex ia IIC T4 Ga		
			4			Screw mount Multi-pitch (50.8×50.8mm and 92×31mm)	70	China : Ex-CCC Ex ia IIC T4 Ga		
						B0	Taiwan : TS Ex ia IIC T4 Ga			
						C0	Russia : TR-CU 0 Ex ia IIC T4 Ga X			
						D0	Oceania : IECEx Ex ia IIC T4 Ga			

\*1 Above code shows model number of driver only. Refer to outline drawings for model number of sensor and extension cable.

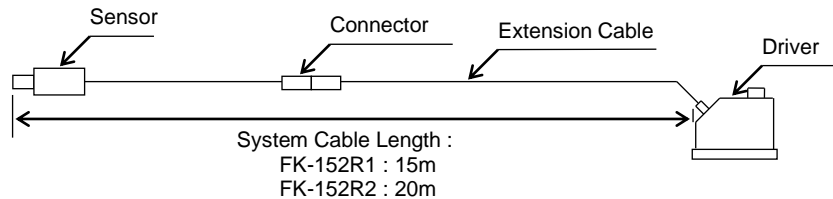
SPECIFICATIONS

CALIBRATION MATERIAL	JIS SCM440 flat surface	TEMPERATURE CHARACTERISTIC	Sensor : Less than ±6% of F.S. Extension Cable : Less than ±4% of F.S. Condition : Gap=1.5mm, Target : JIS SCM440 0 to 80°C (at 20°C standard)
MEASURING RANGE	0.25mm to 1.75mm from sensor tip	OPERATING HUMIDITY RANGE	30 to 95% RH (non-condensing, non-submerged) (Sensor body : 100%RH)
SENSITIVITY*2	7.87V/mm		
SENSITIVITY ERROR*2	Within ±5%		
SCALE FACTOR ERROR*2	Within ±5% of 7.87V/mm (if calibrated as a system) Within ±10% of 7.87V/mm (including interchangeability errors) Step : 0.25mm, Linear range : 1.5mm	POWER SUPPLY	-24VDC ± 10%
LINEARITY*2	Within ±25µm of 7.87V/mm straight line : (if calibrated as a system) Within ±45µm of 7.87V/mm straight line : (including interchangeability errors) Linear range : 1.5mm	DIELECTRIC STRENGTH OF DRIVER	Between each terminals and mounting plate : 1mA or less at 500VAC for one minute
FREQUENCY RESPONSE*2	DC to kHz or more (-3dB)	INSULATION RESISTANCE OF DRIVER	Between each terminals and mounting plate : 100MΩ or more at 500VDC
MAX. OUTPUT VOLTAGE*2	Approx. -23VDC	APPLICABLE WIRE SIZE	Screw type terminal block (M4) : 0.75 to 2mm <sup>2</sup> Spring lock terminal : 0.2 to 1.5mm <sup>2</sup>
SENSOR ABNORMAL OUTPUT VOLTAGE*2	Approx. -0.6VDC (Sensor OPEN/Sensor SHORT)	DRIVER MASS	Approx. 200g
OUTPUT IMPEDANCE*2	50Ω Current 5mA (max.)	Other	
CURRENT CONSUMPTION (10kΩ load)	Max. -15mA		
OUTPUT NOISE*2	Approx. 15mVpk-pk + power supply noise		
SENSOR TIP DIAMETER	Approx. 8mm dia.		
CABLE DIAMETER	Approx. 3.6mm dia.		
CONNECTOR DIAMETER	Approx. 7.1mm dia.		
SYSTEM CABLE LENGTH	15m or 20m		
OPERATING TEMPERATURE RANGE	Sensor : -40 to +177°C Extension Cable : -40 to +177°C Driver : -40 to +80°C		
RANGE OF TEMPERATURE AT EXPLOSION PROOF CONSTRUCTION	E10 : -40 to +80°C(Sensor, Extension Cable & Driver) E40 : -40 to +80°C(Sensor, Extension Cable & Driver) E50 : -40 to +80°C(Sensor, Extension Cable & Driver) E70 : -40 to +80°C(Sensor, Extension Cable & Driver) EB0 : -40 to +80°C(Sensor, Extension Cable & Driver) EC0 : -40 to +80°C(Sensor, Extension Cable & Driver) ED0 : -40 to +80°C(Sensor, Extension Cable & Driver)		
		*2 The above specification apply at 25°C with -24VDC power supply and load resistance 10kΩ and JIS SCM440 target (thickness≥5mm).	

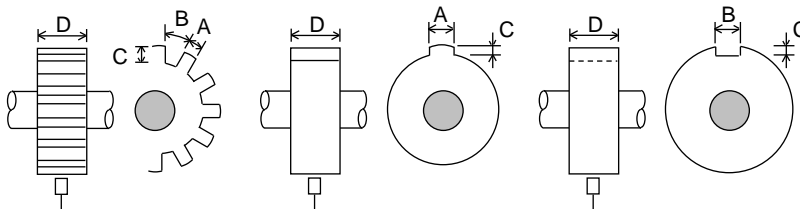
NOTICE

- |   |  |
|---|--|
| <p>1. CALIBRATION MATERIAL<br/>MODEL FK-152R Transducers are calibrated for JIS SCM440 flat surface (more than 15mm dia.).<br/>If the measured target is other than JIS SCM440 flat surface, it will present a different characteristics. In such a case, calibration by the connected equipment (e.g. monitor) side should be required for system operation.</p> <p>2. SHIELD WIRE CONNECTION<br/>Connect shield wire of signal cable (3-wire shielded cable between driver and monitor) to driver's "COM" terminal (Spring lock terminal: "Shield" terminal) and monitor's "COM" terminal.<br/>If this is not adhered to, noise may be caused.</p> <p>3. CONNECTOR ISOLATION, etc.<br/>The connector connecting the sensor cable and the extension cable shall be insulated with the attached insulation sleeve (transparent shrink tube) or fluoro resin insulation tape.<br/>The vinyl-insulating tape shall not be used, which may cause the wiring trouble in the case of temperature more than 80°C.<br/>The connector shall not be located in the oil environment.<br/>The oil penetration to cable through the connector may cause the sensitivity change, due to the change of the cable capacitance.</p> <p>4. MEGGER TEST OF SIGNAL CABLE<br/>If megger test is made on the signal cable (3-wire shielded cable), be sure to discharge the charged electric load before connecting the cable to driver. If this caution is not adhered the driver could be damaged.</p> | <p>5. SENSOR INSTALLATION<br/>Not available for rain water at out door use.<br/>It may cause the sensitivity change and insulation down.</p> <p>6. CALIBRATED AS A SYSTEM<br/>The sensor, extension cable and driver, which are calibrated as a system, shall be connected with each serial No. as specified in the inspection test report. If this is not adhered the output characteristics may be out of specification.</p> <p>7. SCALE FACTOR ERROR and LINEARITY<br/>The scale factor error margin and linearity margin provides for examination result in our factory.<br/>This regulated value is not applied to the examination result in the site.</p> <p>8. SAFETY BARRIER<br/>In case of the intrinsically safe specification, the approved following safety barrier is recommended.<br/>• MTL 7796-<br/>Please use in combination with the barrier which has explosion-proof certification in the country of use.<br/>Linear range reduces when intrinsic safety system with barrier.(to approx. 95%)</p> <p>9. The instructions manual contains important information such as conditions necessary for safe handling of the system.<br/>Such information and conditions are important and indispensable for ensuring safety. Therefore, be sure to read the instructions manual thoroughly before handling the system.</p> <p>10. In the intrinsically safe system, the product cannot be used in combination with a sensor/extension cable/driver with the intrinsically safe code "/EX□".</p> |
|---|--|

CONFIGURATION



• Dimension of target [recommended for rotational speed measurement]



Dimension of Target [recommended] (mm)	A ≥ 6
	B ≥ 7
	C ≥ 2.5
	D ≥ 16
Set gap [recommended] (mm)	1.0 to 1.5