
 HYD	<b>PRODUCT STANDARD</b> <b>TURBINES &amp; COMPRESSORS</b>			TC 5 5804
				REV. NO. 05
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<b><u>UNIVERSAL TYPE FF &amp; HART COMPATIBLE HAND-HELD COMMUNICATOR &amp; INSTRUMENTATION CALIBRATOR</u></b>				
1.0	<b><u>SCOPE:</u></b>	This is a hand-held instrument that provides interface with all HART & FF compatible instruments irrespective of the manufacturer of the instruments. The instruments calibrator is used for calibration of instruments.		
2.0	<b><u>SPECIFICATIONS for HART / FF COMMUNICATOR:</u></b>			
a)	Applicable device	:	The communicator shall have device descriptions built in for smart type electronic pressure, differential pressure, temperature, level transmitters, valve positioner etc.	
b)	Transmission line requirement	:	Line length – max. 2 Km (0.75 to 1.25mm <sup>2</sup> cable) Low resistance – 250 to 575 Ohms Load Capacitance – 0.22 µF max. Load Inductance – 3.3 mH max.	
c)	Display	:	8 line by 21 characters (128x 64 pixels) LCD	
d)	Keypad	:	25 large keys including 6 action keys, 4 software defined function keys, membrane type with tactile feedback.	
e)	Power Source	:	Rechargeable battery pack with power supply (100/240V AC, 50 Hz, US/UK/EU connection)	
f)	Memory	:	12 MB (min)	
g)	Ambient temperature	:	0 to 50°C	
h)	Ambient humidity	:	0-95% RH	
i)	Hazardous location certification:	:	CENELEC/ATEX, FM, CSA intrinsically safe (includes FISCO as applicable) for NEC ,Class I, Div 1, Gas Group A,B,C & D.	
j)	Accessories	:	Lead set with minigrabber and alligator clips, carrying case, user manual, charger, AC power supply adaptor, Compensation sensor, Communication cable.	
k)	Device description language	:	Fully loaded	
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<p><b>3.0</b> The offered universal type HART/ HART &amp; FF compatible communicator shall be able to provide interface with pressure and differential pressure transmitters, level transmitters, temperature transmitters , valve positioner etc.( wherever applicable) of the following make as a minimum:</p> <ul style="list-style-type: none"><li>-Fisher Rosemount</li><li>-Fuji</li><li>-Tata Honeywell</li><li>-Yokogawa</li><li>-Smar</li><li>-ABB</li><li>- Fisher Xomox</li><li>- Dresser</li></ul>					
<p><b>4.0</b> <u><b>IDENTIFICATION MARKINGS:</b></u></p> <p>a) The following minimum identification markings shall be stamped onto an identification tag/label fixed to the transmitter.</p> <ul style="list-style-type: none"><li>- Manufacturer's Type/Model Number.</li></ul> <p>b) 12 digit material code of BHEL shall be marked on the name plate.</p>					
<p><b>5.0</b> <u><b>PAINT COATINGS:</b></u></p> <p>Manufacturer's well proven paint coatings shall be used if painting is done on any part.</p>					
<p><b>6.0</b> <u><b>INSPECTION AND TEST REQUIREMENTS:</b></u></p> <p>a) Certificate of conformance shall be furnished.</p> <p>b) FM Certificate for Intrinsic safe execution.</p>					
<p><b>7.0</b> <u><b>GUARANTEE CERTIFICATE:</b></u></p> <p>A guarantee certificate for 18 months of trouble free operation from date of shipment or 12 months from the date of commissioning whichever is earlier shall be furnished.</p>					
<p><b>8.0</b> <u><b>DOCUMENTS:</b></u></p> <p>The following Technical Information / Documents shall be furnished.</p> <p>a) Along with offer (2 copies each)</p> <p>Technical catalogues / literature.</p>					
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b) After placement of order ( 3 copies each)

- Operation and Maintenance manual for the Communicator
- Inspection and Test certificate
- Guarantee certificate

**9.0 PACKING:**

The material shall be properly packed to ensure that it is capable of withstanding transit risks without damage.

**10.0 MARKING ON PACKING CASE:**

The following details shall be marked on packing case

1. Manufacturers name
2. BHEL purchase order number
3. BHEL product standard number

**VARIANT TABLE:**

VAR. NO.	DESCRIPTION	BHEL MATERIAL CODE
01	UNIVERSAL TYPE HART COMPATIBLE HAND HELD COMMUNICATOR	TC9755804013
02	UNIVERSAL TYPE HART & FOUNDATION FIELBUS COMPATIBLE HAND HELD COMMUNICATOR	TC9755804021
03	Instrument Calibrator Yokogawa-CA71 or equivalent.  Equivalent make shall be provided with technical features similar to Yokogawa CA71.	TC9755804030

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