

## Model DTE

### Temperature primary element

Gas filled temperature primary element suitable for Campo instruments



#### Description

The thermal system mod. DTE comprises a gas filled thermometric sensor (bulb) and a steel Bourdon tube, connected by a capillary tube.

It operates on a principle of gas expansion, to convert process fluid temperature changes into a proportional bourdon tube motion.

The DTE model is designed to operate Campo instruments series to provide monitoring and controlling of process fluid temperature up to 650 °C.

The calibration range is normally chosen according to the value and variations of the measured variable. For the best measuring conditions the following notes are to be considered :

a) When temperatures below 0°C are to be measured the zero suppression of the instruments can not exceed the 60% of calibrated span.

b) When the lower value of the calibration range is higher than 0°C, zero elevation does not exceed the 25% (for gas filling) of the span.

## TECHNICAL DATA

CAPILLARY TUBE		VERSION D-TE 02
<b>MATERIAL</b>		AISI 316 ss
<b>PROTECTION</b>	<b>Standard</b>	AISI 316 ss (ø 4x1) pipe
	<b>Optional</b>	AISI 316 ss (ø 4x1) pipe plus PVC or AISI 316 ss flexible tube
<b>OUTPUT DIAMETER (mm)</b>		1.6
<b>INTERNAL SECTION (mm<sup>2</sup>)</b>		0.013
<b>FILLING</b>		Gas
<b>MAX. LENGTH (m)</b>		12 (*)
<b>MEASURING RANGE LIMITS (°C)</b>	<b>MIN.</b>	- 80
	<b>MAX.</b>	+ 500
<b>SPAN LIMITS (°C)</b>	<b>MIN.</b>	+ 50
	<b>MAX.</b>	+ 500

(\*) Additional length can be provided on request

**Accuracy rating** (of the thermometric sensor)  
± 0.5%

### Ambient temperature limits for capillary protections:

- PVC: - 15 and + 70° C
- AISI 316 ss: no additional limits

### Maximum overtemperature

SPAN (°C)	MAX. OVERTEMPERATURE (°C)
50	60
80	160
100	270
150	300
200	330
250	350
300	420
350	590
400	670
450 to 500	700

## AMBIENT TEMPERATURE COMPENSATION

### Version DTE 02

No capillary compensation for ambient temperature variation is required for this version.

Case compensation is provided by a bimetallic element.

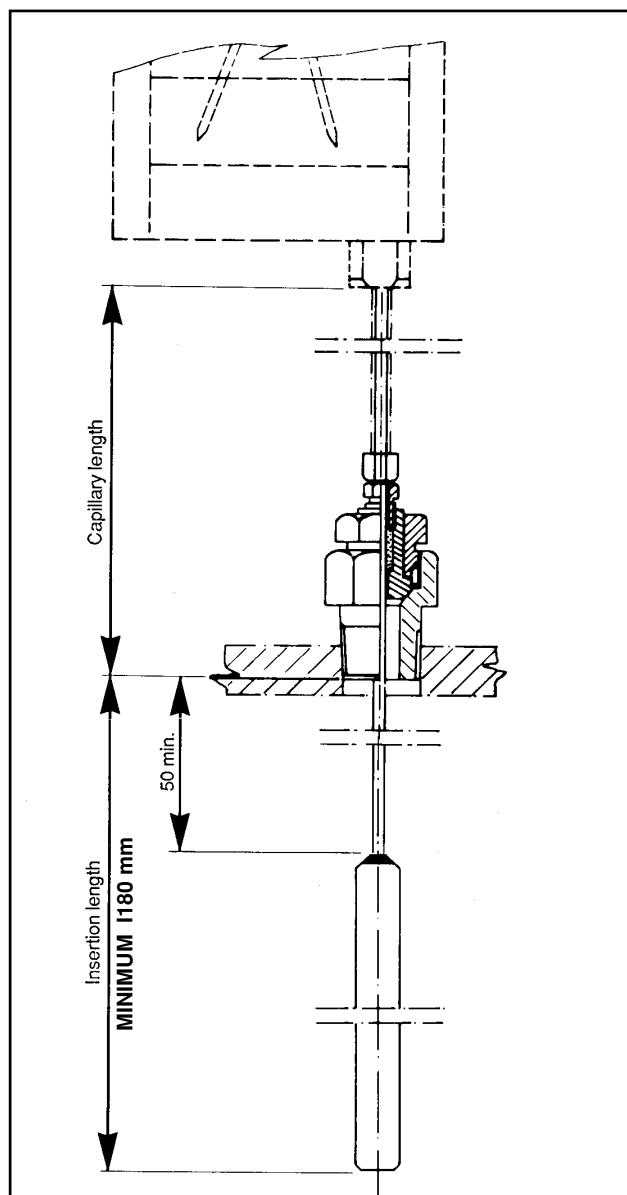
## INSERTION LENGTH

Insertion length for version **DTE 02** (fig. 1) is continuously adjustable via a threaded bushing assembly.

Unless otherwise specified the insertion length is set at the value of 650 mm. and is added to the required capillary length. When an additional protection of the capillary is required (eg. PVC) it is necessary to state a maximum insertion length. If the insertion length is not totally used, the part left should be protected on site.

When insertion length over 650 mm is required, the part exceeding the same value will be deducted from the required capillary length.

The minimum insertion length to be considered due to the bulb design and according to capillary length is 180 mm.



## ORDERING INFORMATION

Select one character or set of characters from each category and specify complete catalog number.

### PRODUCT CODE

	abc	d e	f g	h i	j	k l	m
BASE MODEL							
TEMPERATURE ELEMENT							
SPAN							
BULB DIAMETER/PROCESS CONNECTION							
BULB TYPE AND EXTENSION							
CAPILLARY LENGTH							
CAPILLARY PROTECTION							

abc	Code
<b>BASE MODEL</b>	
Temperature primary element	<b>DTE</b>

de	Code
<b>TEMPERATURE ELEMENT</b>	
Compensated - Stainless steel	<b>02</b>

fg	SPAN (°C)		Code
GAS FILLING (Range limits: -100 to +500 °C)	50		<b>41</b>
	80		<b>42</b>
	100		<b>43</b>
	150		<b>44</b>
	200		<b>45</b>
	250		<b>46</b>
	300		<b>47</b>
	350		<b>48</b>
	400		<b>49</b>
	450		<b>50</b>
Zero based range	500		<b>51</b>
	50		<b>61</b>
	80		<b>62</b>
	100		<b>63</b>
	150		<b>64</b>
	200		<b>65</b>
	250		<b>66</b>
	300		<b>67</b>
	350		<b>68</b>
	400		<b>69</b>
Range with elevated/ suppressed zero	450		<b>70</b>
	500		<b>71</b>

### BULB DIAMETER / PROCESS CONNECTION

hi	FILLING	Bulb diameter (mm)	Process connection	Code
	GAS FILLING	11.2	1/2 in. Gas M	<b>31</b>
		11.2	1/2 in. NPT	<b>32</b>
		11.2	3/4 in. Gas M	<b>33</b>
		11.2	3/4 in. NPT	<b>34</b>
		13	3/4 in. Gas M	<b>39</b>
		13	3/4 in. NPT	<b>40</b>

j	BULB TYPE AND EXTENSION	Code
	Plain bulb on capillary with adjustable fitting. Max insertion length 650 mm.	<b>1</b>

kl	CAPILLARY LENGTH (mt) - Note	Code
	2 (Not available with gas filling bulb diameter 13 mm)	<b>01</b>
	4.5	<b>02</b>
	8	<b>03</b>
	9	<b>53</b>
	12 (Not available with gas filling bulb diameter 11.2 mm)	<b>54</b>
	15 (Not available with gas filling bulb diameter 11.2 mm)	<b>55</b>
	18.5 (Not available with gas filling bulb diameter 11.2 mm)	<b>56</b>

m	CAPILLARY PROTECTION	Code
	Standard	<b>0</b>
	Standard + AISI 316 ss flexible pipe	<b>1</b>
	Standard + PVC	<b>2</b>

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