

# 煤矿安全

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SAFETY IN COAL MINES

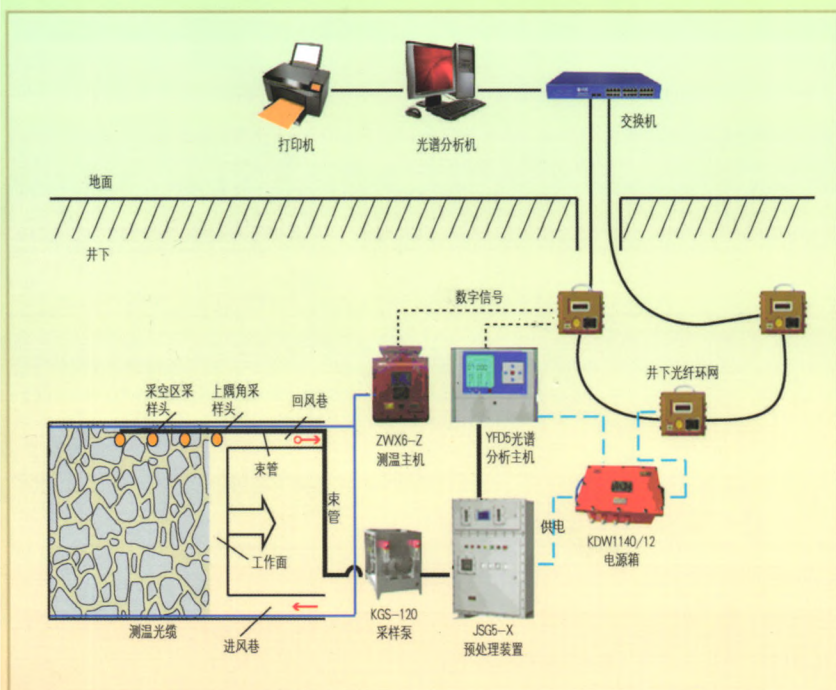
煤科集团沈阳研究院有限公司

主办

1970年创刊·月刊

## 井下自然发火综合监测系统

井下自然发火综合监测系统采用光谱气体分析和光纤测温技术，解决了气体长距离传输气样变化的难题，乙烯监测精度可达 $10^{-7}$ 。主体设备为本质安全型，配套设备完善，可结合历史数据综合分析，预警准确、安全性好、可靠性高，可与防灭火装备联动，实现了管控一体化和自动化，体现了“预防为主”的自燃火灾防控原则，已成功应用于神华、陕煤、龙煤等多家大中型煤炭企业。



### 系统参数

光纤测温参数	测温距离/km:	8
	测温精度/ $^{\circ}\text{C}$ :	$\pm 1$
	测温分辨率/m:	$\pm 1$
	测温通道数/路:	6
分析气体种类	测量范围	允许误差
甲烷/%	0~1.0	$\pm 0.06$
	1.0~100.0	真值的 $\pm 6\%$
一氧化碳浓度/ $10^{-6}$	0~100	$\pm 4$
	100~500	真值的 $\pm 5\%$
二氧化碳浓度/%	500~10000	真值的 $\pm 10\%$
	0~0.50	$\pm 0.02$
氧气浓度/%	0.50~20.0	$\pm (0.05 + \text{真值的} 5\%)$
	0~25.0	$\pm 3\% \text{ F.S}$
乙烯浓度/ $10^{-6}$	0~2.0	$\pm 0.5$
	2.0~100.0	$\pm (0.5 + \text{真值的} 10\%)$

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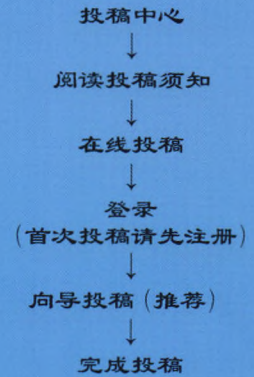
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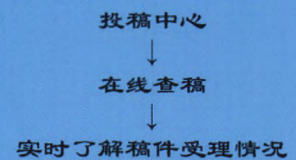
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煤矿用激光甲烷传感器采用激光吸收光谱技术,是具备测量精确、标校周期长、不受水汽和其它交叉气体干扰的高性能环境甲烷监测仪表,用于煤矿井下或其它需要监测环境甲烷浓度的场所。

## 性能特征

- ◎ 采用高分辨率激光吸收光谱技术,消除气体交叉干扰,降低甲烷监测误报。
- ◎ 具备温度自适应和补偿功能,测量结果不受环境温度影响。
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